国家级中医药继续教育项目

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# 便秘的诊断治疗新进展培训班

时　　间：2016 年 5 月 26 日至 29 日

地　　点：浙江省立同德医院

主办单位：中国中西医结合学会大肠肛门病专业委员会

# 2016 国家级中医药继续教育项目
# 便秘的诊断治疗新进展培训班
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# TST理念与手术在便秘诊治中的运用

任东林

## 什么是TST微创无痛技术？

- 称为“痔上黏膜环切术”，这是一种以肛垫病变引起痔疮这一发病机制的新认识为理论根据的新技术。TST手术是用一种称为“TST吻合器”的特殊器械，将痔上方的直肠黏膜脱垂带做环形切除。手术时先扩开肛门，于齿状线（直肠与肛管的交界线）上方约4厘米处将直肠黏膜环形缝合一圈，然后将TST吻合器插入肛门，吻合器可将脱垂的黏膜带切除下来，整个过程只需半小时左右。

## 什么是TST微创无痛技术？

- 由于齿状线以上的直肠黏膜受内脏神经支配，手术后患者几乎没有疼痛的感觉；又由于手术既切除了直肠黏膜脱垂带，又阻断了直肠末端动静脉的终末吻合支，消除了痔疮发生的根源，各种痔疮都有着理想的治疗效果。具有术后见效快、恢复快、无痛苦等特点。

## TST技术的治疗效果怎么样？

- 痔疮的发病机制主要是“肛垫”出了问题。传统疗法多是针对痔本身，虽也有一定疗效，但不十分理想，术后症状的缓解率较低；或即使取得暂时性缓解，但1、2年后症状容易复发。
- TST手术与传统疗法不同，它并不直接处理痔本身，而是用一种从美国进口的特殊器械，将痔上方的直肠粘膜脱垂带作环形切除，同时也阻断了直肠末端动静脉的终末吻合支，从而消除了痔疮发生的根源，因此效果比较理想。尤其对一些用传统疗法十分棘手的痔类型，如混合痔、环状痔、严重痔脱垂、脱肛等，TST手术也具有很好的疗效。

## TST技术适合治疗哪些肛肠疾病？

- 对内痔、外痔、混合痔、环状痔、严重痔脱垂、脱肛等都有着非常理想的治疗效果。用于Ⅲ、Ⅳ度内痔的治疗。

## TST技术的手术原理是什么？

- 利用特制的圆形吻合器经肛门插入直肠，环形切除直肠下端肠壁的黏膜和黏膜下层组织，并在切除同时进行吻合，使脱垂的肛垫上提，恢复肛垫的正常解剖位置，起“悬吊”作用，同时切断供应痔核的动脉血液分支，起“断流”作用，从而达到根治的目地。

## TST技术的优势主要有哪些？

- **1、安全：**无需切除肛垫，最大程度保留肛门正常功能，避免肛门狭窄、肛门失禁等并发症。
- **2、无痛：**将脱出肛门的痔疮拉回原位，同时截断向痔疮提供血液的血管，不损伤肛周皮肤，故术后几乎无疼痛。
- **3、创伤小、恢复快：**吻合器环形切除粘膜为非开放性伤口，出血少，免除术后换药烦恼，可很快恢复正常生活。
- **4、诊疗范围：**环形痔、多瓣痔、巨大孤立痔、内痔、外痔、混合痔、环状痔、嵌顿痔、直肠粘膜脱垂、脱肛等。
- **5、适合对象：**因损伤少，特别适合中老年人、注重效率的白领人群及传统治疗复发者、伴有轻度脱肛与直肠粘膜内脱的患者。

## 哪些人不适合接受TST技术治疗？

- 对妊娠妇女、儿童、有顽固性便秘，盆腔肿瘤、门静脉高压症，布一卡综合症或不能耐受手术者均不推荐使用。

## TST术后应该如何护理？

- 术后便秘或腹泻的饮食护理：该手术后一般要求患者48小时前后开始排便，每日一次，大便以质软呈糊状为佳，以避免当大便排出经过创面时摩擦造成损伤和疼痛加剧。如术后3日尚无便意者，指导病人适当增加一些含植物油脂的食物，如芝麻、肉汤等，也可晚上睡前用开水冲服少量麻油或蜂蜜，经上述食疗后，一般能排出大便。若不能排出，可用开塞露小灌肠。若术后出现腹泻时，指导病人进食清淡、易消化的食物，注意饮食卫生，禁食生冷。并可饮浓茶已利小便而使大便成形，必要时可用止泻药。

## TST术后应该如何护理？

- 术后当日或第二日，多因麻醉影响，手术刺激，伤口疼痛或敷料压迫，引起反射性膀胱颈部括约肌疼痛、痉挛致术后排尿困难。此类患者应饮浓茶或糖开水使尿量增多，刺激膀胱，增强尿意，也可放松压迫伤口的敷料，促使排尿。仍不能排尿者，遵医嘱给予导尿。

## TST术后应该如何护理？

- 饮食结构与痔疮治愈有密切关系。若食物过细过精，会造成肠蠕动减慢，引起便秘，导致肛门直肠部位静脉曲张；若食物中辣椒或胡椒摄入过多，则会刺激肛门直肠，造成肛门直肠部位血管充血扩张；若饮食摄入过多或摄入过粗食物，易造成术后大便次数过多，引起伤口感染；若在手术前后饮食调理得当，不仅能使手术顺利进行，而且对创面的修复起到重要作用，还能减轻疼痛，有利于伤口愈合，同时可防止和减少术后并发症的发生。

## TST术后应该如何护理？

- (1)饮食：术后第1天流质或半流质饮食，次日可普通饮食；
- (2)排便：术后控制排便1天，并口服液体石蜡油或麻仁丸，使大便软化，便后坐浴。无需换药，肛内不必纳入栓剂等；
- (3)抗生素的使用：一般术后预防性应用抗生素1～3d，防止吻合口感染。

谢谢！
武警南京医院肛肠中心
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网址：www.jsgcw.com

# 便秘新分类与外科治疗进展


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中国农工党全国中医药文化与肛肠专科建设特训基地

主任

## 医护圈里疯传的从医宝典《一》：需要警惕的14种患者

- 1.看过3名以上专家
- 2.满嘴都是专业术语
- 3.和医生探讨手术怎么做
- 4.一见医生就泪流满面，说你是救命稻草，甚至下跪
- 5.到处是疼痛点
- 6.行为古怪
- 7.总皱眉头，面相不善，尖酸刻薄
- 8.一上来就问，我这病是不是被XXX误诊了
- 9.治疗后效果不好者
- 10.一见面就请吃饭喝酒者
- 11.动不动就拍照、录音、录像者
- 12.反正我们不懂，你们看着办吧
- 13.N多家属没有统一意见
- 14.有钱任性、有权支招的人太多

## 我们的经历。。。。。。

关于便秘的传说……

一、奇怪的便秘现象

21岁某，术前状态

开腹所见

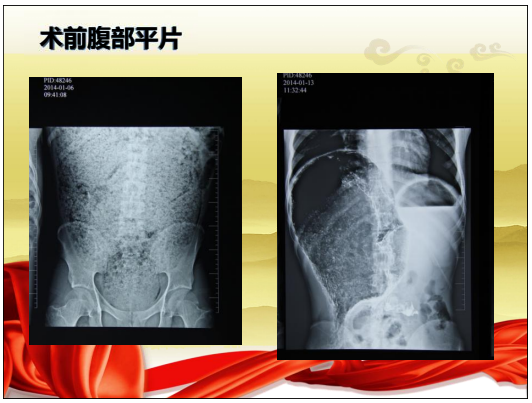
术中所见

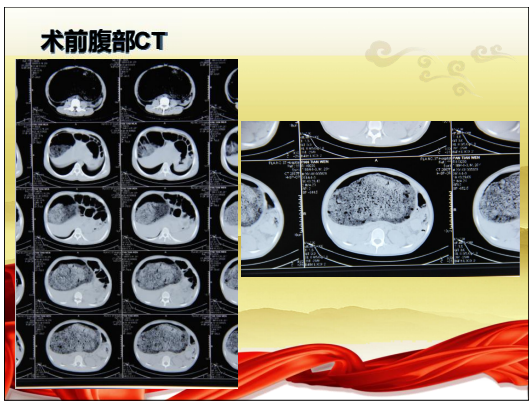
一条巨蟒被成功“降服”

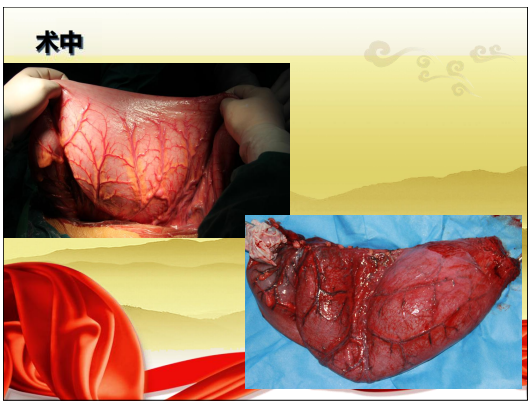
切下来的手术标本

二、肠大如腹

潘某，男，20岁
从小发病，半年通过灌肠才排一次便，腹胀如鼓。
诊断：1、慢性顽固性便秘
（重度A期混合型）
2、巨结肠同源病
3、反位结肠


术前腹部平片


术前腹部CT


术中

## 术后复查

## 三、感人的“妈妈”

## 例 3

任某，女，34岁
诊断：慢性顽固性便秘
（重度B期 混合型）
入院胃肠心理评估：
精神分裂症（单纯型）
精神方面异常症状：
情绪抑郁，默默无语，无法与人正常交流，生活不能自理。

## 术后1周

## 出院时

## 四、觉悟的公交车旅行者

## 例 4

受便秘困扰20多年，需每天早起即乘坐公交车直至晚上才能排便，造成莫大心理压力。

- 经过手术、中医药等综合治疗后，现在已成功摆脱便秘困扰。

## 五、“健步如飞”的帕金森

## 例 10

陶某，男，58岁

诊断：1、慢性顽固性便秘（重度B期 混合型）

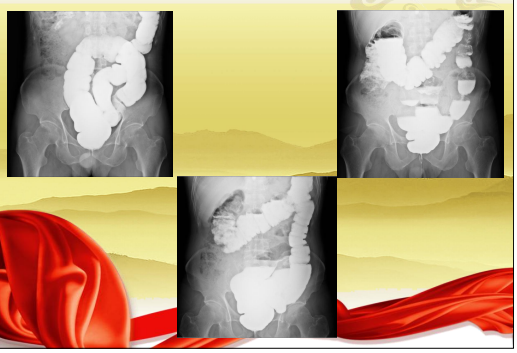
2、帕金森病

入院胃肠心理评估：器质性心境障碍，中度抑郁

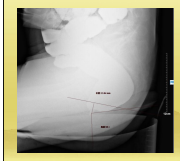
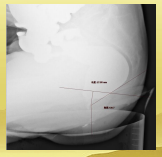
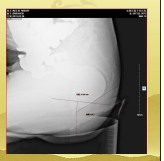
病史：帕金森病10年，近2月无法排便，药物、灌肠均无效。腹胀、肛门坠胀不适，无法正常进食及入睡。有多次自杀倾向，家属带其辗转数十家医院就诊，没有一个医生愿意为其手术。

## 扶入医院

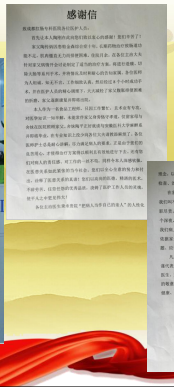
## 术前钡灌肠



## 术前排粪造影

## 出院前的感谢


感谢信



## 出院时情况：排便通畅，能正常进食，活动自如，精神状态良好，睡眠明显好转，性格开朗，主动关心和鼓励其他病员。家属称其健步如飞。

## 六、惊心动魄的精分症

## 秋某，男性，20岁
便秘4年，
精神分裂症2年

## 七、因秘成"家"的旅行者

两年时间跑了60家医院的军人雷某

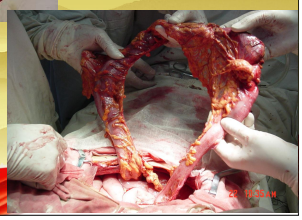
八、以院为家的老革命

王爷爷，87岁重度结肠瘫痪症患者，已在我院住院3、4年，行保守治疗，每年花费几十万。

九、“小肚鸡肠”的肠弯弯

结肠冗长

肠壁菲薄



十、迷茫的杨大爷

## 的杨大爷

- 1.所有检查都没有问题
- 2.为什么大便排不出来
- 3.我该怎么办
- 背景：杨大爷86岁，患高血压、糖尿病、耳聋、腿脚残疾；生活不能自理。

## 十一、惊悚的排气声

例 11

## 恐怖的便秘

姓名：李某某
性别：女
年龄：70岁
主诉：排便困难14年，全身气动气窜，必须排出才能缓解。

## 我们的体会

十个便秘九个疯，还有一个想腾空！

## 我们的理论

结肠瘫痪症学说

## 我们的意见

1. 轻度便秘不能手术
2. 重度便秘必须慎重手术
3. 中度便秘才是最佳手术时机

## 我们的观点

外科手术应该是慢性顽固性便秘的终极治手段

——只有实践与完善，毋庸置疑

## 我们的经验

重度便秘慎重手术，不是不能手术，但是必须要条件具备，才能手术：

1. 熟练的外科手术技能
2. 强大的中医临床技能
3. 专业的精神心理辅助

长期的临床实践证实，外科手术是STC有效的治疗方法。

临床外科杂志2009年4月
第17卷第4期，232-233

# 谢谢

成都肛肠专科医院/中国PPH技术培训中心

# 手助腹腔镜在结直肠外科的应用

浙江大学医学院附属第一医院肛肠外科
浙江省结直肠疾病诊治中心
林　建　江

1. 技术概述
2. 手术操作
3. 病例总结
4. 应用体会

Company Logo

## 概　述

手助腹腔镜手术( Hand-Assisted Laparoscopic Surgery , HALS )是近年来兴起的一种新型腹腔镜手术方式，是指术者经特定的手助器将非优势手伸入腹腔从而协助完成手术。

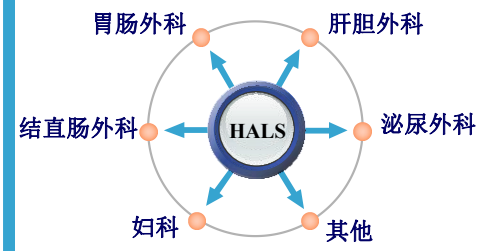
Company Logo

## 概　述

1. 安全、微创
2. 减少手术时间
3. 降低平均住院日
4. 缩短腔镜学习曲线

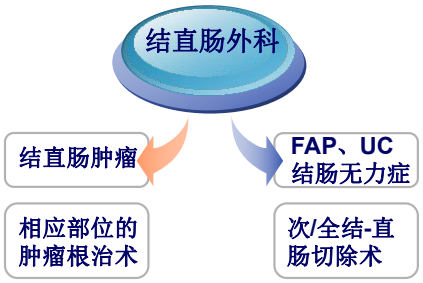
Company Logo

## 概　述




Company Logo

## 手术操作




Company Logo

## 手术操作

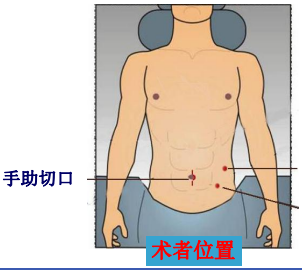
患者体位、手术切口选择以及术者位置

| | 体位 | 手助切口 | 腔镜光源 | 超声刀 | 术者 |
|---|---|---|---|---|---|
| 右半结肠 | 截石位 | 绕脐切口 | 左侧平脐15cm | 左下腹反麦氏点 | 患者腿间 |
| 左半结肠 | 截石位 | 绕脐切口 | 剑突下4-5cm | 左侧平脐15cm | 患者腿间 |
| 乙状结肠 | 截石位 | 绕脐切口 | 耻骨上2cm | 右侧平脐15cm | 患者右侧 |
| 直肠 | 截石位 | 绕脐切口 | 耻骨上2cm | 右侧平脐15cm | 患者右侧 |
| 全结肠 | 右半—左半—乙状—直肠 | | | | |

Company Logo

## 手术操作

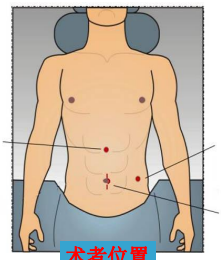
右半结肠切除术




Company Logo

## 手术操作

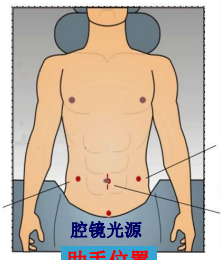
左半结肠切除术




Company Logo

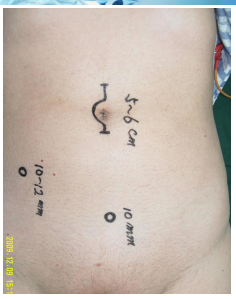
## 手术操作

乙状结肠、直肠切除术




Company Logo

## 手术操作



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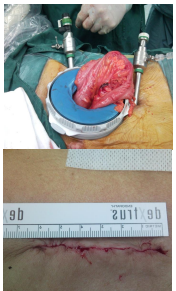
## 手术操作

手术图片



Company Logo

## 病例总结

- 本中心从2000年初开展HALS，主要限于良性疾病患者，随后逐渐开展结直肠恶性肿瘤的手术，近4年来，更是得到了迅速发展，共计开展90余例（数据统计至2013.4），成为了全国HALS四大中心之一。
- 开展的术式包括：右半、左半、乙状结肠、低位Dixon、Hartmann、Miles、次/全结肠切除术、全结直肠切除＋回肠储袋-肛管吻合+回肠保护性造口、联合脏器切除等。

Company Logo

## 病例总结

本中心2009.8-2013.4统计资料

恶性肿瘤（644）

| | 例数 |
|---|---|
| 右半 | 127 |
| 左半 | 24 |
| 横结肠 | 12 |
| 乙状结肠 | 79 |
| Dixon | 368 |
| Hartmann | 9 |
| Miles | 17 |

良性疾病（48）

| | 例数 |
|---|---|
| STC | 21 |
| FAP | 10 |
| UC | 1 |
| 类缘病 | 4 |
| 其他 | 12 |

Company Logo

## 病例总结

本中心2009.8-2013.4统计资料

| | 恶性肿瘤 | 良性疾病 |
|---|---|---|
| 手术时间 | （135±40）min | （240±65）min |
| 出血量 | （118±56）ml | （155±45）ml |
| 肠道恢复 | （65.4±8.3）h | （68±12.3）h |
| 住院时间 | （9.1±3.5）d | （8.9±3.8）d |
| 淋巴清扫 | （13.9±5.1） | |
| 中转率 | 11例(1.7%) | 0% |
| 并发症 | 23例（3.6%） | 2例（4.2%） |

Company Logo

## 病例总结

- 以上手术中，联合其他脏器切除的共有0例，包括胆囊、肝脏等；
- 中转原因：共11例（均为恶性病变）；肿瘤侵犯周围脏器、术中暴露困难、出血等；
- 并发症共25例（恶性病变23例，良性2例），包括：周围脏器损伤、肠梗阻、吻合口漏、吻合口出血、腹腔出血等；其中9例经再次手术治疗后缓解，另16例经保守治疗后缓解；

Company Logo

## 病例总结

本科特色：

手助腹腔镜Dixon+回肠自闭性保护性插管造口术

主要适用于低位或超低位的Dixon, 或者吻合不满意的患者；回肠自闭性保护性插管造口是我科的一项特色，创造性的使用气管插管行自闭性回肠插管造口术，到目前为止，取得了非常满意的效果。（常规开腹手术中120余例+手助腹腔镜中30余例）

Company Logo

## 病例总结

本科特色：

手助腹腔镜Dixon+回肠自闭性保护性插管造口术

Company Logo

## 病例总结

**本科特色：**

手助腹腔镜Dixon+回肠自闭性保护性插管造口

Company Logo

## 病例总结

**本科特色：**

手助腹腔镜Dixon+回肠自闭性保护性插管造口术

自闭性造口的优势：(1) 操作简单，粪便转流确切；(2) 术后2-3周左右可以拔除插管，造瘘口能自行愈合；(3) 相比常规的回肠袢式造口，此法造口护理简单，造口相关并发症少；(4) 同时避免了二次回纳手术及相应的风险，极大的减轻了患者的痛苦和经济负担

Company Logo

## 病例总结

**本科特色：**

手助腹腔镜Dixon+回肠自闭性保护性插管造口术

手助腹腔镜+自闭性插管造口技术的联合应用，在低位直肠肿瘤的微创治疗中起到极大的作用；同时我们也将此法应用于接受术前新辅助放化疗的直肠肿瘤患者，创伤小，疗效确切，增加保肛率，避免二次手术，并发症少等等；

*相关文章投稿中。。。。*

Company Logo

## 本中心所发表的相关文献

- *Hand-assisted laparoscopic VS open right hemicolectomy: short-term outcomes in a single institution from China. Surg Laparosc Endosc Percutan Tech.2012 22(3):267-71*
- 本文比较了常规开腹手术和手助腹腔镜手术在右半结肠肿瘤根治术中的应用情况(HALS=59, OS=57)；
- 研究表明：HALS组的术中出血更少、术后疼痛更轻、手术切口更短、术后恢复更快、住院时间更短；手术时间略长；而在淋巴结清扫、术后并发症等方面无统计学差异；
- 结论：HALS在右半结肠肿瘤根治术中是安全可行的。

Company Logo

## 本中心所发表的相关文献

- *Hand-assisted laparoscopic surgery versus the open approach in curative resection of rectal cancer. J Int Med Res 2010; 8: 916-922*
- 本文比较了常规开腹手术和手助腹腔镜手术在直肠肿瘤根治术（Dixon）中的应用情况(HALS=98, OS=88)；
- 研究表明：HALS组的术中出血更少、手术切口更短、术后恢复更快、住院时间更短；而在手术时间、淋巴结清扫、术后并发症等方面无统计学差异；在随访期内未发现肿瘤局部复发。
- 结论：HALS在直肠肿瘤根治术中是安全可行的。

Company Logo

## 本中心所发表的相关文献

- *手助腹腔镜技术在结肠良性病变中的应用中华普通外科杂志, 2011, 26(10): 879-880*
- 本文回顾性分析本中心2009.8-2010.4实施的18例手助腹腔镜次/全结-直肠切除术患者的临床资料；其中结肠无力症11例，FAP 6例，溃疡性结肠炎1例。
- 研究表明：18例手术均顺利完成，无中转开腹，术后无严重并发症发生；全部患者均随访至今，随访时间1-19个月；生活质量良好；
- 结论：手助腹腔镜次全结-直肠切除术治疗结肠良性病变是一种安全、微创的手术方式。

Company Logo

## 本中心所发表的相关文献

- *Hand-assisted laparoscopic VS open right hemicolectomy: short-term outcomes in a single institution from China**Surg Laparosc Endosc Percutan Tech, 2012;***
- *Hand-assisted laparoscopic surgery versus the open approach in curative resection of rectal cancer.**J Int Med Res, 2010;***
- *手辅助腹腔镜下直肠癌根治术 **中华外科杂志** 2012;*
- *手助腹腔镜结直肠癌肝转移一期同步切除术六例分析**中华普通外科杂志** 2012;*
- *111例手助腹腔镜结直肠癌根治术短期疗效分析**中华胃肠外科杂志** 2011;*
- *手助腹腔镜技术在结肠良性病变中的应用**中华普通外科杂志** 2011;*
- *腹腔镜技术在结肠慢传输型便秘手术中的应用**腹部外科** 2011;*
- *手辅助腹腔镜全结肠切除J型回肠储袋肛管吻合术治疗家族性腺瘤性息肉病 **中华外科杂志** 2011;*
- *…… ……*

Company Logo

## 应用体会

- HALS作为一种新兴的手术方式，它既具备腹腔镜手术微创的优点，又保留了传统开腹手术直观的特点，已被越来越多的外科医师所接受。
- 在结直肠外科，许多中心的研究表明，HALS的手术效果要优于传统的开腹手术或者全腹腔镜手术。

Company Logo

## 应用体会

HALS优势

1. 视、触结合，心手相应
2. 操作安全，根治彻底
3. 微创手术，恢复良好
4. 易于掌握，学习曲线短
5. 特有的手助器—“蓝碟”

Company Logo

## 应用体会

### A 切口选择

- 属于“万能切口”，基本上可以满足不同部位肿瘤的需求；
- 切口位于中间，腹腔内操作空间大，探查全面；
- 绕脐切口，借助其生理凹陷，切口愈合较美观；
- 若需中转开腹，便于切口延长；

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## 应用体会

### B 中转开腹率

- 各中心报道不一，国内文献报道约为0%-0.9%；而国外文献报道约为0%-15%；
- 中转原因包括：结直肠癌远处转移、肿瘤周围浸润、肿瘤周围器官侵犯、肿瘤巨大等等。
- 本中心，中转开腹率为1.7%（11/644）;我们认为这与术前评估的完善程度和腔镜操作技巧的熟练程度有关。

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## 应用体会

Add Your Text

### C 术后并发症

- 研究表明，HALS 的术后并发症要低于开腹手术，尤其是切口相关并发症；而国外有研究发现HALS和全腹腔镜手术的并发症相仿；
- 本中心，术后并发症发生率为3.6 %(25/692)；其中的尿漏与胆漏病例，我们认为可能是术中分离过程中，超声刀热力灼伤所致；

Company Logo

## 应用体会

### D 淋巴结清扫

- 就腹腔镜手术而言，对于深部组织的良好照射、放大效应及准确操作，可确保病灶的彻底切除和淋巴结的清扫；有文献报道，HALS 结直肠手术可较全腹腔镜手术获得更多的淋巴结数目；
- 本中心，HALS 肿瘤根治术中的淋巴结清扫个数为（13.9±5.1）个；

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## 应用体会

### E 使用技巧及注意事项

- 合理安排手助器和Trocar的位置,两者距离应大于10厘米；
- 放置手助器的切口长度适合，长度一般为术者四个手指的宽度；
- 充分利用手助切口，必要时可以通过手助切口进行直视下手术操作；

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## 应用体会

### E 使用技巧及注意事项

- 术者非优势手进入腹腔时，可带入一干纱布；便于术中及时擦拭血迹，以保持视野清晰；
- 注意周围器官的保护，防止超声刀的热灼伤；
- 注意术者与扶镜助手的良好配合；
- 熟练掌握超声刀或能量平台的使用，既保证手术安全，又能缩短手术时间；

Company Logo

## 应用体会

### F 不足之处

- 从经济角度看，手术费用相对较高是该技术较难被广大患者接受的原因之一；
- 相比开腹手术而言HALS 对术者的手术技巧有更高的要求；
- 另外，在腹腔内手的操作易导致组织渗血，而且辅助手在腹腔内操作有增加术后肠粘连之虞；

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## 应用体会

### F 不足之处

- HALS手术时，特别要求术者和扶镜助手的默契配合；
- HALS也存在一定的并发症发生率，尤其是超声刀的热损伤；
- 长时间手术操作，辅助手易疲劳；
- 此外，Trocar穿刺孔肿瘤种植转移也是腹腔镜外科技术发展中需要关注的问题之一；

Company Logo

## 展　望

总体而言，HALS在结直肠外科以及其他腹腔脏器手术方面已经显示出优越性，但其应用规范、相关原则以及适应症的选择等等仍需进一步明确，我们相信随着腹腔镜器械发展，操作技能的提高和更多经验的积累，HALS将会有着更广阔的应用前景。

Company Logo

浙江省结直肠疾病诊治中心

COLORECTAL DISEASE CENTER OF ZHEJIANG PROVINCE

1956

## 科室简介

- 前身是痔科，创建于50 年代初。60年代初陆琦主任曾经先后两次为敬爱的周恩来总理治疗痔疾而闻名海内。1984年发展为肛肠外科，科室目前有医护人员80名，医师30名,其中教授、主任医师5名，副主任医师6名，主治医师12名，博士生8名，硕士生12名。现有4个病区，核定病床120余张，实际收治病人数约150张。电子结肠镜检查室及肛门直肠测压室各一个。每年开展结直肠癌手术1200余例，良性结肛周疾病手术1300余台。

## 温馨的肛肠外科全家福(2009)

## Thank You ！

# 便秘的中医治疗进展

*Challenge and Opportunity of anal continence*

南京中医药大学第三附属医院
全国中医肛肠医疗中心

丁义江

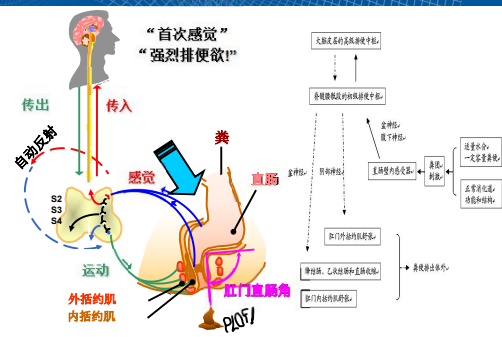
## 结直肠肛门功能 *Function*

**大肠肛门的生理功能**

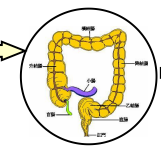
- 肛门自制
- 吸收水分、电解质和维生素
- 形成粪便并排出体外
- 利用肠内细菌制造维生素

魄门亦为五脏使
“大肠主津，传导糟粕”
“欲得长生，肠中常清”

## 正常排便过程 *Normal defecation*




- 手术、外伤
- 遗传、环境
- 精神心理
- 慢性疾病
- 其他…



- 大便失禁
- 便秘
- 腹泻
- 腹痛腹胀
- 肛门坠胀疼痛

器质性疾病

功能性疾病

结直肠肛门功能受损

## 肛门疾病 *Hemorrhoids* 痔

**传统痔切除术造成的控便障碍**

| Author | Year | Number | Follow-up | Procedure | Continence disorder |
|---|---|---|---|---|---|
| Read et al. [80] | 1982 | 24 | 6–12 weeks | Milligan | 4% |
| McConnell and Khubchandani [81] | 1983 | 441 | 1–7 years | Parks | 12.9% (transitory)<br>0.5% (permanent) |
| Athanasiadis et al. [29] | 1986 | 167 | 3–36 months | Parks | 13% ($I^0$ 9%, $II^0$ 4%) |
| Kennten and Bieten [72] | 2000 | 35 | 17 years | Milligan | 20% |
| Ho et al. [31] | 2000 | 62 | 3 months | Milligan | 2% (with defect of internal sphincter) |
| Kinch et al. [82] | 2001 | 150 | 3–6 months | Milligan | 0 |
| Johannson et al. [83] | 2002 | 418 | 2–11 (6) years | Milligan | 20% ($I^0$ 52%, $II^0$ 40%, $III^0$ 8%) |
| Ebert and Meyer [30] | 2002 | 30 | 54 months | Milligan | 11% ($I^0$ 3%, $II^0$ 10%) |
| Hetzer et al. [84] | 2002 | 20 | 12 months | Ferguson | 0 |

**PPH术造成的控便障碍**

| Author | Year | Number | Follow-up | Procedure | Continence disorder |
|---|---|---|---|---|---|
| Ho et al. [31] | 2000 | 57 | 3 months | Longo | 0 |
| Kinch et al. [82] | 2001 | 150 | 3–6 months | Longo | 0 |
| Beattie and Loudon [85] | 2001 | 85 | 6 months | Longo | 0 |
| Altomare et al. [86] | 2001 | 20 | 6 months | Longo | 0 (1× urge incontinence) |
| Fantin et al. [87] | 2002 | 18 | 12 weeks | Longo | 0 (manometry =) |
| Hetzer et al. [84] | 2002 | 20 | 1 year | Longo | 0 |
| Ebert and Meyer [30] | 2002 | 72 | 14 months | Longo | 28% ($I^0$ 18%, $II^0$ 10%) |
| Jongen et al. [88] | 2006 | 654 | 16 months | Longo | 1.5% |
| Kanellos et al. [32] | 2006 | 126 | 61.5 months | Longo | $I^0$ 5.8% (up to 6 weeks postoperative) |

*Ommer A,et.Int J Colorectal Dis,2008;23:1023–1031.*

## 肛门疾病 *Hemorrhoids* 痔

| 远期主要并发症 | 传统手术 | | PPH术 | |
|---|---|---|---|---|
| | n/m | % | n/m | % |
| 脱出 | | | | |
| 全部 | 9/524 | 1.7 | 47/539 | 8.7 |
| III度 | 2/51 | 3.9 | 12/58 | 20.7 |
| IV度 | 0/72 | 0 | 13/65 | 20 |
| 未详细指明 | 7/401 | 1.7 | 22/416 | 5.3 |
| 出血 | 15/176 | 8.5 | 18/186 | 10 |
| 再次手术 | 17/413 | 4.1 | 31/411 | 7.5 |

| 远期次要并发症 | 传统手术 | | PPH术 | |
|---|---|---|---|---|
| | n/m | % | n/m | % |
| 坠胀 | 0/66 | 0 | 9/65 | 13.8 |
| 大便失禁 | 9/352 | 2.6 | 4/352 | 1.1 |
| 肛门肤窄 | 16/520 | 3.1 | 10/519 | 2 |
| 肛门痛 | 15/279 | 5.4 | 6/281 | 2.1 |
| 大便急迫 | 22/392 | 5.6 | 32/394 | 8.1 |
| 皮赘 | 40/410 | 10 | 52/410 | 12.7 |
| 肛门瘙痒 | 26/209 | 12.4 | 25/213 | 11.7 |
| 肛裂 | 5/213 | 2.3 | 6/213 | 2.8 |
| 肛瘘 | 3/171 | 2 | 0/162 | 0 |

Long-term Outcomes of Stapled Hemorrhoidopexy vs Conventional Hemorrhoidectomy

*A Meta-analysis of Randomized Controlled Ti* *Arch Surg.* 2009;144(3):266-272

## 肛门疾病 Fissure 肛裂

**肛裂切除术后并发症**

| Complication | Operation F |
|---|---|
| Persistence of pain | – |
| Persistence of bleeding | – |
| Urinary retention | 1 (3.3%) |
| Incontinence to flatus or fecal soiling | 2 (6.2%) |
| Infection (abscess or fistula) | – |
| Fissure recurrence | 1 (3.1%) |
| Anal stenosis | – |
| Total complications | 4 (12.5%) |

*Mousavi SR,et al.J Gastrointest Surg.2009,13:1279-1282.*

## 肛门疾病 Fistula 肛瘘

- 肛瘘切开术
  - 直接切开
  - 切割挂线
- 挂线引流
- 全括约肌保留手术
  - 瘘管剔除术
  - 直肠推移瓣手术
  - 生物蛋白胶充填
  - 肛瘘栓治疗
  - 间置手术

## 肛门疾病 Fistula 肛瘘

Fistulotomy

Carlos Pastor, MD, PhD, John Hwang, MD, and Julio Garcia-Aguilar, MD, PhD

**肛瘘术后失禁**

| Reference, Author (yr) | n | Follow-Up (mo) | Continence Disorders | Assessment Method |
|---|---|---|---|---|
| (9) van Tets (1994) | 312 | 12 | 27.0% minor disorders | Questionnaire |
| (3) Garcia-Aguilar (1996) | 363 | 29 | 42.0% fistulotomy<br>63.0% seton and fistulotomy | Questionnaire |
| (26) Mylonakis (2001) | 74 | 3 | 21.0% | CIS score |
| (4) Cavanaugh (2002) | 110 | < 24-> 60 | 64.0% | FISI score |
| (17) Westerterp (2003) | 60 | 248 | 50.0% (82.0% high fistulas) | Questionnaire |
| (18) Rosa (2006) | 844 | 24 | 6.9% | Questionnaire |
| (19) van der Hagen (2006) | 103 | 75 | 6.0% | ND |
| (20) Toyonaga (2007) | 148 | 12 | 20.3% | CCFI-FI score |
| (22) Ortiz (2008) | 206 | 42 | 9.6% | CCF-FI score |
| (23) van Koperen (2008) | 109 | 36 | 41.8% | Vaizey/COREFO |

FISI score, Fecal Incontinence Severity Index; CIS score, Cleveland Incontinence Score; CCF-FI, Cleveland Clinic, Florida fecal incontinence scoring system; COREFO, Colorectal Functional Outcome Questionnaire; ND, not determined.

*Pastor C,et al.Fistulotomy.Semin Colon Rectal Surg.2009;20:18-23.*

## 肛门疾病 Fistula 肛瘘

**系统性回顾经括约肌肛瘘术后失禁的发生**

| Author | Year | Number | Surgical procedure | Follow-up | Continence disorder |
|---|---|---|---|---|---|
| Aguilar et al. [94] | 1985 | 151 | Muc. adv. flap | 8 months–7 years | 10% |
| Abcarian et al. [95] | 1987 | 70 | Muc. adv. flap | ? | 8% |
| Wedell et al. [96] | 1987 | 29 | Muc. adv. flap | 18 months–4 years | 28% preoperative disorder unchanged; others: complete continence |
| Kodner et al. [97] | 1993 | 107 | Rect. adv. flap | 7 months | 20% impairment<br>18% advancement |
| Athanasiadis et al. [98] | 1994 | 189 | Muc. adv. flap | 1–7.5 years | 21% |
| Miller and Finan [99] | 1998 | 26 | Rect. adv. flap | 14 months | 0 |
| Zimmermann et al. [37] | 2001 | 26 | Anodermal flap | 25 months | 52% preoperative disorder<br>30% postoperative impairment |
| Willis et al. [100] | 2000 | 37 | Muc. adv. flap | 29 months | 0 |
| Ortiz and Marzo [101] | 2000 | 103 | Rect. adv. flap | 12 months | 8% |
| Gustafsson and Graf [41] | 2002 | 42 | Rect. adv. flap | 12 months | 42%<br>31% slight impairment<br>11% distinct impairment |
| Van der Hagen et al. [102] | 2005 | 30 | Rect. adv. flap | 22 (8–52) months | 23% "minor soiling" |
| Perez et al. [103] | 2005 | 35 | Sphincter division with reconstruction | 32 months | 31% preoperative incontinence<br>12.5% "minor alterations" |
| Uribe et al. [104] | 2007 | 56 | Rect. adv. flap | 44 months | 12.5% "minor incontinence"<br>9% "major incontinence" |

*Ommer A,et.Int J Colorectal Dis,2008;23:1023–1031*

## 肛门疾病 Fistula 肛瘘

**切割挂线术后失禁的发生**

| Author | year | Number of patients | contience Disorder |
|---|---|---|---|
| Deshpande et al | 1975 | 397 | 0 |
| Culp | 1984 | 20 | 15% |
| Christensen et al | 1986 | 21 | 61. 30% |
| Held et al | 1986 | 9 | 0 |
| Flich Carbonell et al | 1987 | 19 | 15. 80% |
| Misra and Kapur | 1988 | 53 | 0 |
| Fazth et al | 1990 | 7 | 0 |
| Shukla et al | 1991 | 155 | 5. 20% |
| Williams et al | 1991 | 13 | 61. 50% |
| Tahir | 1993 | 9 | 55. 60% |
| Graf et al | 1995 | 29 | 51. 70% |
| McCourtney and Finlay | 1996 | 16 | 18. 75% |
| Ha ma lai nen and Sainio | 1997 | 35 | 62. 90% |
| Mohite et al | 1997 | 114 | 0 |
| Wallisch et al | 1997 | 23 | 0 |
| Dziki and Bartos | 1998 | 32 | 37. 50% |
| Hasegawa et al | 2000 | 28 | 53. 60% |
| Ho et al | 2001 | 46 | 6. 50% |
| Ibbister and Al Sanea | 2001 | 47 | 36. 20% |
| Decanini-Tera n et al | 2002 | 42 | 0 |
| Durgan et al | 2002 | 10 | 20% |
| Guresh et al | 2002 | 4 | 50% |
| Theerapol et al | 2002 | 41 | 0 |
| Zbar et al | 2003 | 34 | 8. 90% |
| Hamel et al | 2004 | 12 | 0 |
| Menters et al | 2004 | 20 | 20% |
| Gonzalez-Ruiz et al | 2006 | 31 | 0 |
| Hammond et al | 2006 | 16 | 38% |
| Charu a-Gundic et al | 2007 | 50 | 10% |
| Guner et al | 2007 | 17 | 0 |
| Votansev et al | 2007 | 32 | 15. 60% |

**平均失禁发生率：**

**11.2%**

*Ritchie RD,et al.Colorectal Dis. 2009;11(6):564-71.*

## 肛门疾病 Fistula 肛瘘

**Complication after treatment of primary and recurrent fistulas**

| Type of complication | Primary fistulas, 242 patients (80.7%) | Recurrent fistulas, 58 patients (19.3%) |
|---|---|---|
| Recurrent fistula | 13 (5.4) | 30 (51.7) |
| Gas and/or stool incontinence | 9 (3.7) | 23 (39.7) |

**Complication after treatment of single-and multi-tract fistulas**

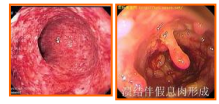
| Type of fistula | Number of patients (%) | Number of recurrences (%) | Number of cases of incontinence (%) |
|---|---|---|---|
| Single-tract | 266 (88.7) | 32 (12) | 22 (8.3) |
| Multi-tract | 34 (11.3) | 11 (32.4) | 10 (29.4) |

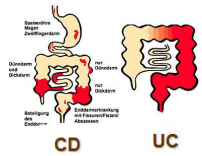
*Sygut A.Late results of treatment of anal fistulas.Colorectal Dis. 2007;9(2):151-8.*

## 炎性肠病 *Inflammatory Bowel Disease*

- 溃疡性结肠炎(UC)
- 克罗恩病(CD)

- 肛门狭窄与失禁
- 腹痛
- 腹泻
- 粘液脓血便
- 全身并发症






## 炎性肠病 *Inflammatory Bowel Disease*

Fatigue and Health-Related Quality of Life in Pediatric Inflammatory Bowel Disease CLINICAL GASTROENTEROLOGY AND HEPATOLOGY 2009;7:554–561

self-report statistically different mean total fatigue and subscale scores compared with children with rheumatologic diseases or cancer. *Conclusions:* In children with primarily inactive IBD, fatigue was significantly higher and HRQOL was significantly lower than in healthy controls. Results among children with IBD were comparable to children with rheumatologic diseases and cancer.

IBD患儿与健康相关的生活质量明显低于正常者

*Perianal Crohn's disease most commonly presents with perianal abscesses and fistulas, and significantly jeopardizes patients' quality of life*

CD肛周病变严重影响患者生活质量

## 结直肠肿瘤 *Colorectal Tumor*

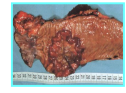
所有外科医师的共识，奋斗的目标

手术必须达到根治、彻底

扩大手术范围

创 伤　并发症　后遗症

*严重影响器官功能、生活质量*



## 结直肠肿瘤 *Colorectal Tumor*

- 术式的改善
- 器械的完善
- 分子靶向治疗
- 多学科合作

保肛术式（肛门功能）
新辅助化疗的实施
腹腔镜技术

?

*目标：提高生存率的同时必须改善生活质量*

## 结直肠肿瘤 *Colorectal Tumor*

- 不同手术方式带来的排便障碍（便秘和腹泻）

Type of Procedure with Prevalence of Patient-Reported Constipation and Diarrhea

| Operation | No. of Patients | % with Constipation | % with Diarrhea |
|---|---|---|---|
| Without stoma | | | |
| Right hemicolectomy | 58 | 27.6 | 39.6 |
| Left hemicolectomy | 26 | 38.5 | 19.2 |
| Anterior resection (without stoma) | 30 | 22.2 | 14.8 |
| Subtotal colectomy with ileorectal join | 5 | 20.0 | 100 |
| All nonstoma patients | 119 | 28.3 | 31.4 |
| With stoma | | | |
| Anterior resection with loop stoma | 51 | 2.1 | 41.7 |
| APR or Hartman's with end colostomy | 30 | 30.0 | 17.2 |
| All stoma patients | 81 | 12.4 | 32.6 |
| All patients | 200[a] | 21.9 | 31.9 |

APR = abdominoperineal excision
[a]One patient with an end ileostomy resulting from a leak after right hemicolectomy excluded.

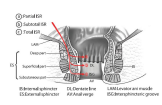
*Wilson TR,et al. Measurement of Health-Related Quality of Life in the Early Follow-Up of Colon and Rectal Cancer. Dis Colon Rectum,2006;49:1692-1702*

## 结直肠肿瘤 *Colorectal Tumor*

Long-Term Results of Intersphincteric Resection for Low Rectal Cancer

TABLE 3. Defecatory function evaluated at 12 to 24 months after ISR in 104 patients who underwent stoma closure

| | Total ISR (n = 19) | Subtotal ISR (n = 16) | Partial ISR (n = 69) |
|---|---|---|---|
| Bowel frequency (per day)* | 4.5 (2.4) | 3.8 (1.3) | 3.5 (1.5) |
| Wexner's score* | | | |
| Continent patients (Kirwan Grade 1, 2) | 4.8 (5.6) | 3.2 (4.1) | 3.7 (5.8) |
| Incontinent patients (Kirwan Grade 3, 4) | 13.3 (5.6) | 13.4 (2.1) | 12.4 (3.7) |
| Evacuation disorder in: | | | |
| Constipation | 3 (15.8%) | 2 (12.5%) | 11 (15.9%) |
| Dyschezia | 3 (15.8%) | 3 (18.8%) | 9 (13.0%) |
| Used enemas | 1 (5.3%) | 0 | 2 (2.9%) |



低位直肠癌保肛术后患者大便次数增多，失禁评分升高，伴有不同程度排便障碍

Dis Colon Rectum 2009; 52: 1065–1071

## 结直肠肿瘤 Colorectal Tumor

**Analysis of Clinical Factors Associated with Anal Function after Intersphincteric Resection for Very Low Rectal Cancer**

Masaaki Ito, M.D. • Norio Saito, M.D. • Masanori Sugito, M.D.
Akihiro Kobayashi, M.D. • Yusuke Nishizawa, M.D. • Yoshiyuki Tsunoda, M.D.

In conclusion, preoperative CRT was found to be the factor most strongly associated with poor anal function after ISR, suggesting that patients with rectal cancer who undergo ISR after preoperative CRT are very likely to experience incontinence. This information should be given to patients when they are offered a choice of treatment. Since postoperative anal function after ISR

术前放疗会严重影响直肠癌ISR术后肛门功能

*Dis Colon Rectum 2009; 52: 64-70*

## 结直肠肿瘤 Colorectal Tumor

JOURNAL OF CLINICAL ONCOLOGY ORIGINAL REPORT

**Quality of Life in Patients With Colorectal Cancer 1 Year After Diagnosis Compared With the General Population: A Population-Based Study**

*Volker Arndt, Henrike Merx, Christa Stegmaier, Hartwig Ziegler, and Hermann Brenner*

From the German Centre for Research on Aging, Department of Epidemiology, Heidelberg, Germany; University of Ulm, Department of Epidemiology, Ulm, Germany; Saarland Cancer Registry, Saarbrücken, Germany.

Submitted February 2, 2004; accepted September 23, 2004.

ABSTRACT

**Purpose**
Quality of life (QOL) has become an important outcome measure for patients with cancer, but long-term results from population-based studies are rare. The objective of our study was to identify specific limitations of QOL in survivors of colorectal cancer in comparison with men and women from the general population 1 year after diagnosis when acute treatment effects are expected to have declined.

采用癌症患者生命质量测定量表（EORTC QLQ-C30），结直肠癌患者情感和社会功能明显低下，尤其青年患者

Diseases of the Colon & Rectum

**Measurement of Health-Related Quality of Life in the Early Follow-Up of Colon and Rectal Cancer**

Timothy R. Wilson, B.Sc., M.B.Ch.B.,[1] David J. Alexander, M.B.B.S., M.S.,[1] P. Kind, M.Phil.[2]

青年、造口、伴有腹泻或便秘的结直肠癌术后患者生活质量更差

## 结直肠肿瘤 Colorectal Tumor

**多学科协作诊治模式下新辅助化疗联合手术治疗结直肠癌患者的生存质量评估**

汪晓东* 刘春娟* 陈增蓉* 邱 萌* 李 立*

比新辅助化疗后更严重，其差异均有统计学意义(P<0.001)。结论 MDT诊治模式下新辅助化疗联合手术综合治疗过程中，化疗干预手段会使生存质量降低，这可能与其副反应相关，但其不良反应可能并不会实际影响到术后患者的部分主观感受；而结直肠癌外科手术干预可能是造成患者术后近期内更多的不适感的主要原因，但并不会额外增加综合治疗后患者的生存质量负担。不同综合治疗模式对患者生存质量的影响，以及综合治疗的成本-效果是需要进一步探讨的问题。

Chin J Bases Clin General Surg, Vol. 15, No. 5, May 2008

## 功能性结直肠肛门疾病

罗马III　　2006　成人 6类

**A.功能性食管病（4）**
- A1.功能性烧心
- A2.功能性食管源性胸痛
- A3.功能性吞咽困难
- A4.癔球症

**B.功能性胃十二指肠病（8）**
- B1.功能性消化不良-餐后不适、上腹痛
- B2.功能性嗳气症-吞气症 非特异性
- B3.功能性恶心和呕吐症-特发性、功能性、周期性
- B4.成人反刍综合征

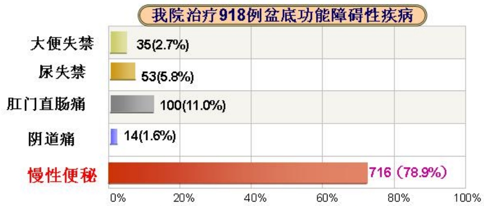
**C.功能性肠病（5）**
- C1.肠易激综合征
- C2.功能性腹胀
- C3.功能性便秘
- C4.功能性腹泻
- C5.非特异性功能性肠病

**D.功能性腹痛综合征（1）**

**E.胆囊和SO功能障碍（3）**
- E1.胆囊功能障碍
- E2.胆道SO功能障碍
- E3.胰管SO功能障碍

**F.功能性肛门直肠病（7）**
- F1.功能性大便失禁
- F2.功能性肛门直肠疼痛
- F3.功能性排便障碍

**我院治疗918例盆底功能障碍性疾病**




- 慢性便秘中出口梗阻型便秘 577例

| | |
|---|---|
| 盆底失弛缓型 | 325 |
| 盆底松弛型 | 153 |
| 混合型 | 82 |
| 合并肛门直肠痛 | 17 |
| 有效率 | 73.7% |

## 慢性便秘 Chronic Constipation

**Table 1.1.** Prevalence of constipation by gender

| Study | Population source | Year | Constipation definition | Overall prevalence (%) | Males (%) | Females (%) |
|---|---|---|---|---|---|---|
| Sandler[17] | NHANES I | 1971–75 | Self-report | 12.8 | 7.0 | 18.2 |
| Everhart[10] | NHANES I | 1971–75 | Self-report | 15.8 | 8.0 | 20.8 |
| Johanson[7] | NHIS | 1983–87 | Self-report | 1.9 | 0.9 | 2.8 |
| Harari[15] | NHIS | 1989 | Self-report | 3.4 | 1.3 | 4.9 |
| Talley[12] | Olmsted county | 1991 | Strain and hard Or <3/wk | 17.4 | 13.9 | 20.8 |
| Talley[13] | Olmsted county | 1993 | Self-report | 5.0 | 2.7 | 7.3 |
| | | | Rome I FC | 19.2 | 18.3 | 20.1 |
| | | | Rome I DD | 11.0 | 5.2 | 16.5 |
| Drossman[23] | Householder | 1993 | Rome I FC | 3.6 | 2.4 | 4.8 |
| | | | Rome I DD | 13.8 | 11.5 | 16.0 |
| Stewart[21] | U.S. EPOC | 1997 | Rome II FC | 14.7 | 12.0 | 16.0 |
| Pare[20] | Canada | 2000 | Self-report | 27.2 | 18.4 | 35.4 |
| | | | Rome I | 16.7 | 12.0 | 21.0 |
| | | | Rome II | 14.9 | 8.3 | 21.1 |

DD, Disordered defecation; EPOC, Epidemiology of Constipation (study); FC, Functional constipation; NHANES, National Health and Nutrition Examination Survey; NHIS, National Health Interview Survey.

罗马标准下发病率：3.6%~27.2%

## 慢性便秘 Chronic Constipation

### Classification

Clinical Assessment

Exclude metabolic/structural causes

Colonic Transit
Anorectal Manometry (ARM), Balloon Expulsion (BE)
Scintigraphic/Barium Defecography

| | | | | |
|---|---|---|---|---|
| *Colonic Transit* | (N) | (N) | (AbN) | (AbN) |
| *ARM/BE* | (N) | (AbN) | (AbN) | (N) |
| | *Functional constipation/ IBS* | *Pelvic floor dysfunction* | *Pelvic floor dysfunction + Slow-transit* | *Slow-transit* |

*Bharucha AE.Constipation. Best Practice & Research Clinical Gastroenterology. 2007,21:709–731.*

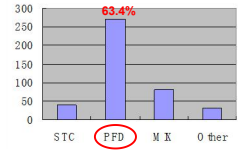
## 慢性便秘 Chronic Constipation

Classification of 215 patients with functional constipation

| | |
|---|---|
| STC | 18 (8.4) |
| PFD | 164 (76.3) |
| NTC | |
| C-IBS | 23 (10.7) |
| No abnormalities | 10 (4.6) |

*Note.* STC, slow transit constipation; PFD, pelvic floor dysfunction; NTC, normal transit constipation; C-IBS, constipation-predominant irritable bowel syndrome. Data are numbers (percentages).

Audit of Constipation in a Gastroenterology Referral Center




**Clinic Database from 421 Patients in our hospital**

## 慢性便秘 Chronic Constipation

Studies on Long-Term Follow-Up of Children With Chronic Idiopathic Constipation

| Studies | Number of Patients | Age at Diagnosis (years) | Duration of Follow-Up (years) | Favorable Outcome (%) |
|---|---|---|---|---|
| Loening-Baucke[2] | 90 | ≤4 | 6.9 | 63 |
| Keuzenkamp-Jansen et al[4] | 137 | ≤18 | 4 | 66 |
| Elshimy et al[17] | 41 | ≤5 | 1.5 | 88 |
| Sutphen et al[18] | 43 | ≤13 | 6.8 | 70 |
| Staiano et al[3] | 62 | 1-11 | 5 | 48 |
| Procter and Loader[19] | 76 | ≤16 | 6 | 64 |
| Van Ginkel et al[5] | 418 | ≥5 | 5 | 50-70 |
| van den Berg et al[20] | 47 | ≤2 | 3 | 70 |
| Present study | 45 | ≤14 | 10 | 54 |

**Outcome of Functional Constipation in Childhood: A 10-Year Follow-Up Study**

Laurent Michaud, MD, Marie-Dominique Lamblin, MD, Sophie Mairesse, MD, Dominique Turck, MD, and Frédéric Gottrand, MD, PhD

**患有便秘的儿童，经长期随访后仍有50%以上存在便秘**

*Clinical Pediatrics,2009 ,48:26-31.*

## 慢性便秘 Chronic Constipation

**4 D's in common**

- Discomfort
- Depression
- Dollar costs
- Drug toxicity

**10 D's in elder**

- Drugs (side effects)
- Defecatory dysfunction
- Degenerative disease
- Decreased dietary intake
- Dementia
- Decreased mobility/activity
- Dependence on others for assistance
- Decreased privacy
- Dehydration
- Depression

- *Constipation is associated with significantly lower quality of life and higher psychological distress*

*Bouras EP.Gastroenterol Clin N Am,2009,38:463–480.*

## 慢性便秘 Chronic Constipation

Psychological profiles and quality of life differ between patients with dyssynergia and those with slow transit constipation

Satish S.C. Rao[a,*], Kara Seaton[a], Megan J. Miller[a], Konrad Schulze[a], C. Kice Brown[a],

1. Constipated patients with dyssynergic defecation have greater psychological dysfunction and more impaired health-related QOL as compared with patients with STC and control subjects.
2. There are strong correlations between psychological dysfunction and impaired QOL in constipated patients.

- *PFD患者较STC有更严重的心理问题，生活质量更低*
- *便秘患者与心理问题和生活质量受损存在密切联系*

*Journal of Psychosomatic Research ,2007, 63 :441– 449*

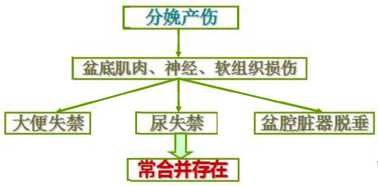
## 大便失禁 Fecal Incontinence

| Study | Population | Sample size (response rate) | Data collection method | Outcome definition | Prevalence (95% confidence interval) |
|---|---|---|---|---|---|
| Johanson and Lafferty 1996 [14](USA) | Convenience sample of general-practice patients aged 18–92 | 586 | Anonymous self-administered questionnaire | Any involuntary leakage of stool or soiling of undergarments | Approximately 11% (8.5, 13.5)* |
| Lam et al. 1999 [16] (Australia) | Random sample of Sydney electoral roll, aged over 18 | 955 (71%) | Anonymous postal questionnaire, core questions validated | At least two of: stool leakage, pad for faecal soiling, incontinence of flatus >25% of the time | 15% (12.2, 17.8)* |
| Kalantar et al. 2002 [15] (Australia) | Gender-stratified random sample of Sydney electoral roll, aged over 18 | 990 (66%) | Anonymous self-administered questionnaire | Unwanted release of liquid or solid faeces at an inappropriate time or place | 11.2% (8.8, 13.7) |
| Sproudhis et al. 2006 [17] (France) | Random stratified cluster sample of noninstitutionalized adults aged over 15 | 7196 (72%) | Anonymous self-administered postal questionnaire | Uncontrolled anal leakage of stool ever in past 12 months | 16.8% (15.9, 17.7)* |

**发病率：11%~16.8%**

## 大便失禁 Fecal Incontinence

- 功能性大便失禁:张力型、急迫型、混合型
- 女性高达15.9%，分娩产伤是主要原因，其中21%的患者伴有尿失禁、骨盆内脏器脱垂或两者兼有



## 大便失禁 Fecal Incontinence

*Conclusions* FI symptoms are frequently severe, QL very altered and anxiety and depression common. FI is frequently associated with other digestive and perineal symptoms, which argue in favour of a multi-disciplinary management of FI.

- **FI患者生活质量明显低下，多伴有焦虑和抑郁，而且常伴随其他消化系统或盆底疾病**

*Damon H,et al. Clinical characteristics and quality of life in a cohort of 621 patients with faecal incontinence. Int J Colorectal Dis ,2008;23:845–851.*

## ▪▪▪▪怎样评估结直肠肛门功能

**How to evaluate？**

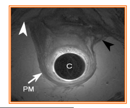
实验室检查

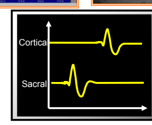
肛门功能评估量表

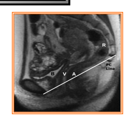
生活质量评估量表

## 检查方法 Examinations

- 肛门直肠指诊
- 肛管直肠测压
- 排粪造影
- 结肠传输试验
- 钡灌肠
- 动态磁共振
- 腔内B超
- 盆底肌电图
- 盆底运动诱发电位






## 便秘的优势检查方法

| Test | Strengths (Clinical utility) | Weaknesses (Clinical utility) | Evidence | Recommendation (grade)* | Comment |
|---|---|---|---|---|---|
| Blood tests (thyroid function tests, serum calcium, glucose, electrolytes) | Rule out systemic or metabolic disorder | Not a cost effective strategy | None | C | Not recommended for routine evaluation, particularly in the absence of alarm features |
| Imaging tests | | | | | |
| Plain abdominal x-ray | Identifies excessive amount of stool in the colon, simple, inexpensive, widely available | Lack of standardization on how to review the film, lack of controlled studies | Poor | C | Not recommended for routine evaluation, particularly in the absence of alarm features |
| Barium enema | Identifies megacolon, megarectum, stenosis, diverticulosis, extrinsic compression, and intraluminal masses | Lack of standardization, embarrassing for patients, radiation exposure, lack of controlled studies | Poor | C | Not recommended for routine evaluation, particularly in the absence of alarm features |
| Defecography | Identifies dyssynergia, rectocele, prolapse, excessive descent, megarectum, Hirschsprung's disease | Radiation exposure, embarrassment, availability, interobserver bias, inconsistent methodology | Fair | B3 | Used as an adjunct to anorectal manometry |
| Anorectal ultrasound | Visualization of the internal anal sphincter and puborectalis muscles | Interobserver bias, availability | Poor | C | Experimental |
| MRI | Simultaneously evaluates global pelvic floor anatomy, sphincter morphology, and dynamic motion | Expensive, lack of standardization, availability | Fair | B3 | Used as an adjunct to anorectal manometry |
| Endoscopy | | | | | |
| Flexible sigmoidoscopy and colonoscopy | Direct visualization of the colon to exclude mucosal lesions such as solitary rectal ulcer syndrome, inflammation, or malignancy | Invasive, risks related to the procedure (perforation, bleeding), sedation | Poor | C | Indicated in patients aged < 50 years with warning symptoms, indicated in all subjects aged > 50 years for colorectal |
| Physiologic testing | | | | | |
| Colonic transit study with radiopaque markers | Evaluates presence of slow, normal, or rapid colonic transit; inexpensive; widely available | Inconsistent methodology, validity has been questioned | Good | B2 | Useful to classify patients according to the pathophysiologic subtypes |
| Colonic transit study with scintigraphy | Evaluates presence of slow, normal, or rapid colonic transit; provides evaluation of whole gut transit | Expensive, time consuming, availability, lack of standardization | Good | B2 | Useful to classify patients according to the pathophysiologic subtypes |
| Anorectal manometry | Identifies dyssynergic defecation, rectal hyposensitivity, rectal hypersensitivity, impaired compliance, Hirschsprung's disease | Lack of standardization | Good | B2 | Useful to establish the diagnoses of Hirschsprung's disease and dyssynergic defecation |
| BET | Simple, inexpensive, bedside assessment of the ability to expel a simulated stool; identifies dyssynergic defecation | Lack of standardization | Good | B2 | Normal BET does not exclude dyssynergia, should be interpreted alongside results of the other anorectal tests |
| Colonic manometry | Identifies colonic myopathy, neuropathy, or normal function-facilitating selection of patients for surgery | Invasive, not widely available, lack of standardization | Fair | B3 | Adjunct to colorectal function tests |

*Satish S.C. Rao.Functional Disorders of Defecation:Evaluation and Treatment. Current Treatment Options in Gastroenterology 2007, 10:221–230*

## 评估量表 Scales

- 便秘评分
  - Wexner constipation scoring system
- 失禁评分
  - Browing and Parks Scale
  - Cleveland Clinic Florida Fecal Incontinence Score (CCF-FIS)
  - Vaizey Score
- 疼痛评分
  - VAS

Cleveland Clinic Florida Fecal Incontinence Score (CCF-FIS)

| Type of incontinence | Never (Frequency) | Rarely | Sometimes | Usually | Always |
|---|---|---|---|---|---|
| Solid | 0 | 1 | 2 | 3 | 4 |
| Liquid | 0 | 1 | 2 | 3 | 4 |
| Gas | 0 | 1 | 2 | 3 | 4 |
| Wears pads | 0 | 1 | 2 | 3 | 4 |
| Lifestyle alteration | 0 | 1 | 2 | 3 | 4 |

*Never* 0, *Rarely* <1 month, *Sometimes* <1 week to ≥1 month, *Usually* <1 day to ≥1 week, *Always* ≥1 day

## 生活质量问卷 *Questionnaires of QOL*

- 便秘患者生活质量问卷 (PAC-QOL)
- 简易36项条目（SF-36）
- 症状自评量表（SCL—90）
- 大便失禁--生活质量评分（FI-QOL）
- ……

## ■■■■ 治 疗 Treatment ?

**非手术治疗**
药物
生物反馈
针灸疗法

**手术治疗**
括约肌成形术
骶神经刺激
人工肛门括约肌

## 中药 *Chinese herb*

【魄门亦为五脏使】

- 脾肾阳虚型：占 50.46%
- 温阳药使用率：70%
- 有效率：60%

南京市中医院盆底中心

附子 干姜 肉桂 茯苓 仙灵脾 白蔻 葛根

## 生物反馈 *Biofeedback*

**Biofeedback Treatment for Functional Anorectal Disorders: A Comprehensive Efficacy Review**

Olafur S. Palsson,[1,2] Steve Heymen,[1] and William E. Whitehead[1]

*This review aimed to critically evaluate the literature on the efficacy of biofeedback for functional anorectal disorders, rate these biofeedback applications according to established guidelines, and make recommendations for this field based on the literature. The Medline and PsychInfo databases were searched to obtain all papers published from 1975 to 2002 that included the terms "biofeedback" and either "constipation," "pelvic floor dyssynergia," "fecal incontinence," or "anorectal pain." Adult and pediatric papers in any language were screened. Prospective studies with five or more participants and a description of the treatment protocol and outcome were selected for review. Seventy-four studies qualified for review: 53 trials on fecal incontinence (FI), 38 on pelvic floor dyssynergia (PFD) or functional constipation, and 3 on anorectal pain. Only 20% of studies were controlled outcome trials. Treatment protocols, etiological subgroups studied and outcome measures varied greatly. The overall average probability of successful treatment outcome for patients treated with biofeedback was 67.2% for functional FI and 62.4% for constipation. There were insufficient data to warrant such calculation for anorectal pain. According to standard efficacy rating criteria, biofeedback treatment is efficacious for functional constipation or PFD in children and probably efficacious in adults; probably efficacious for functional FI; and possibly efficacious for anorectal pain. Utilizing data from all applicable studies, we found that success rate per subject is significantly higher for biofeedback treatment than for standard medical care for PFD/functional constipation, and FI ($p < .001$ for both). Biofeedback treatment may therefore be viewed as a valuable adjunct to medical management of functional PFD/constipation and incontinence. A number of recommendations for future investigations are made based on the review.*

- 治疗排便障碍有效率：62.4%
- 治疗大便失禁有效率：67.2%
- 对儿童和成人同样有效

*Applied Psychophysiology and Biofeedback, Vol. 29, No. 3, September 2004 (© 2004)*

## 生物反馈 *Biofeedback*

**The role of biofeedback in the treatment of gastrointestinal disorders**

Giuseppe Chiarioni and William E Whitehead*

**Table 1** Biofeedback therapy for dyssynergic defecation: randomized, controlled trials in adults.

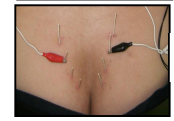
| Reference | Number of patients (f/m) | Control treatment | Positive outcome | Follow-up |
|---|---|---|---|---|
| Chiarioni *et al.* (2006)[42] | 109 (104/5) | PEG 14.6–29.2 g/day | Major clinical improvement: BF 80% vs PEG 22% ($P<0.001$) | BF 24 months; PEG 12 months |
| Heymen *et al.* (2007)[44] | 84 (72/12) | Diazepam or placebo pill | Symptom relief: BF 70% vs D 23% ($P<0.001$) vs PP 38% ($P<0.017$) | 3 months all groups, ongoing |
| Rao *et al.* (2007)[43] | 77 (69/8) | Sham feedback or standard therapy | Global satisfaction with symptoms: BF 86% vs SF 48% ($P$ 0.018) vs ST 62% ($P$=NS) | 3 months all groups, ongoing |

- 治疗排便障碍有效率：70%以上

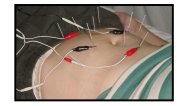
*GASTROENTEROLO GY & HEPATOLO GY,2008,5:371-382*

## 针灸疗法 *Acupuncture*

CNS



ANS



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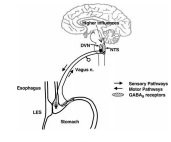


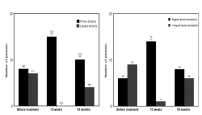
## 针灸疗法 *Acupuncture*

Fecal incontinence treated with acupuncture - a pilot study

Marco Scaglia [a,*], GianGaetano Delaini [b], Ines Destefano [a], Leif Hultén [c]

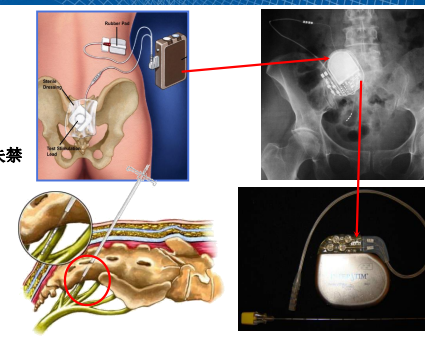
*Conclusion:* Acupuncture offers good opportunities for improving fecal incontinence. The mechanism of action is obscure but might be an effect of the "neuromodulation" of the recto-anal function similar to that explaining the favorable results achieved by sacral nerve stimulation. The concomitant regulation of disordered bowel habits may also contribute to the satisfactory results.

- 针灸能明显改善大便失禁的症状，有类似SNS的作用



## 骶神经刺激 *Sacral Nerve Stimulation*

- 便秘
- 大便失禁
- 疼痛



## 骶神经刺激 *Sacral Nerve Stimulation*

### Long-Term Outcome of Sacral Nerve Stimulation for Fecal Incontinence

***RESULTS:*** Fifty-two patients were available for long-term follow-up lasting at least 5 years. Compared with baseline, the Wexner score decreased significantly after definitive implantation (from 15 ± 4 to 5 ± 5, $P < 0.001$). At least 50 percent improvement in continence was achieved in 74 percent of the patients, and at least 70 percent improvement (median value) was achieved in 50 percent. The mean number of solid/liquid incontinence episodes decreased significantly from 0.5 (±0.5) to 0.1 (±0.3) per day ($P = 0.004$). Quality of life improved in all domains. The overall mean improvement in SF-36 scores was 39.8 percent. Both mean resting and squeeze anal pressures increased significantly, and maximum volume tolerated decreased significantly.

**骶神经刺激治疗远期疗效显著，患者症状减轻，生活质量明显提高**

*Altomare DF.et al.Dis Colon Rectum 2009; 52: 11-17.*

## 骶神经刺激 *Sacral Nerve Stimulation*

Results of SNS for constipation

| Author | No of Patients | Follow-up (mo) | Success (%) | Wexner Constipation Score (B/F) |
|---|---|---|---|---|
| Malouf et al, 2002[205] | 4 | 8 | 75 | 21/9 |
| Ganio et al, 2003[207] | 16 | 12 | 94.8 | 14.3/2.7 |
| Kenefick, 2006[208] | 4 | 8 | 75 | 21.5/9.2 |
| Holzer et al, 2008[209] | 19 | 11 | 42 | 23/8 |

**骶神经刺激治疗便秘有效率：42-94.8%**

*Pinto RA,et al. Surgery and Sacral Nerve Stimulation for Constipation and Fecal Incontinence. Gastrointest Endoscopy Clin N Am,2009;19:83–116.*

## 骶神经刺激 *Sacral Nerve Stimulation*

### Incidence and Predictors of Complications With Sacral Neuromodulation

Wesley M. White, Joe D. Mobley III, Regula Doggweiler, Cindy Dobmeyer-Dittrich, and Frederick A. Klein

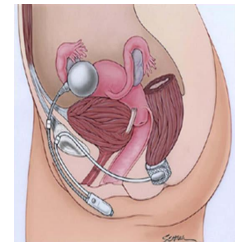
and device variables were examined statistically for evidence of predictive value. From September 2001 to March 2008, 221 patients with a mean age of 48.8 years underwent SNS lead placement for the treatment of intractable urinary urgency/frequency (n = 121), urge incontinence (n = 63), or urinary retention (n = 37). Of this group, 202 patients (91.4%) experienced a >50% improvement in symptoms and underwent implantable pulse generator placement. At a mean follow-up of 36.9 months, 67 patients (30.3%) had experienced AEs (pain in 6, elective removal in 10, lack of efficacy in 11, trauma in 18, infection in 7, hematoma in 3, and lead migration in 12) requiring 44 lead revisions and 47 implantable pulse generator revisions. The significant predictors of AEs included a history of trauma ($P < .001$), a change in body mass index class ($P < .001$), enrollment in a pain clinic ($P = .008$), the duration of follow-up ($P = .002$), and a history of AEs ($P < .001$).

- 并发症：疼痛、电极移位、损伤、感染、血肿
- 价格昂贵

*UROLOGY, 2009,73: 731–735*

## 人工肛门括约肌 *Artificial Anal Sphincter*

**大便失禁！重度括约肌损伤**



## 人工肛门括约肌 *Artificial Anal Sphincter*

Results of ABS

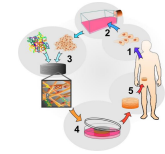
| Author | Year | No of Patients | Complication (%) | Explanted (%) | Follow-up (Months) |
|---|---|---|---|---|---|
| Cristiansenet et al[70] | 1999 | 17 | 70 | 41 | 84 |
| Lehur et al[71] | 2000 | 24 | 17 | 29 | 20 |
| Altomare et al[72] | 2001 | 28 | 46 | 18 | 19 |
| Wong et al[69] | 2002 | 115 | 86 | 37 | 12 |
| Ortiz et al[73] | 2002 | 22 | 40 | 31 | 28 |
| Devesa et al[74] | 2002 | 53 | 57 | 19 | 26.5 |
| Michot et al[75] | 2003 | 37 | — | 24 | >24 |
| Parker et al[76] | 2003 | 45 | 51 | 40 | 24 |
| Da Silva et al[77] | 2004 | 11 | 45 | 0 | 19 |
| Casal et al[78] | 2004 | 10 | 60 | 30 (20 rmpt.) | 29 |
| La Torre et al[79] | 2004 | 8 | 25 | 25 | 3–40 |
| O'Brien et al[80] | 2004 | 7 | 42 | 14 | 6 |
| Melenhorst et al[81] | 2008 | 33 | 24 | 21 | 17.4 |

并发症：17%～70%

*Pinto RA,et al. Surgery and Sacral Nerve Stimulation for Constipation and Fecal Incontinence. Gastrointest Endoscopy Clin N Am,2009;19:83–116.*

## 组织工程学 *Tissue engineering*

- 综合应用工程学和生命科学的基本原理、基本理论、基本技术和基本方法
- 在体外预先构建一个有生物活性的种植体，然后植入体内，修复组织缺损，替代组织、器官的一部分或全部功能，或作为一种体外装置，暂时替代器官部分功能
- 达到提高生活、生存质量，延长生命活动的目的。
- 核心：活的细胞、可供细胞进行生命活动的支架材料以及细胞与支架材料的相互作用




## 结直肠外科医生的天职

## 重视结直肠肛门功能
## 提高生活质量

## Thank you

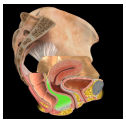
# 盆底功能障碍的诊断与治疗进展

南京中医药大学第三附属医院
全国中医肛肠医疗中心　盆底疾病中心
丁曙晴

## 盆底是一个整体

功 能
- 支 持
- 收 缩
- 放 松

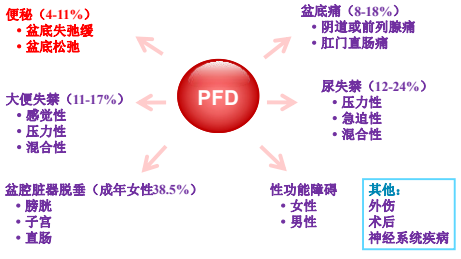
功能障碍
- 活动过度
- 活动低下
- 功能缺乏



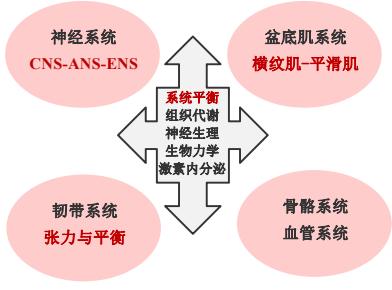
盆底功能障碍性疾病

- 盆底功能障碍所致便秘涉及学科，主要包括：泌尿（前盆）、妇科（中盆）和肛肠（后盆），还需要医学影像、康复、消化、中医、针灸、精神心理等多个学科，形成了以整体观和多学科合作为指导的临床实践。

## 盆底功能障碍性疾病




## 盆底功能障碍所致便秘的病因




Hippocrates： 平衡表示健康，失衡预示疾病。

## 盆底功能障碍所致便秘的症状

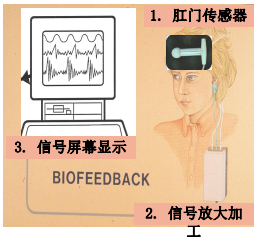
系统失衡 → 病症重叠

心理精神症状　上消化道症状　其他全身疾病

## 盆底生物反馈

- What：　什么是盆底生物反馈
- Indication：　适应证
- Protocol：　训练方案
- Result from evidence：　循证结果

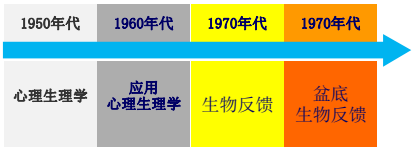
## 什么是盆底生物反馈




- 调节和训练大脑控制排便的技术

- 将盆底肌肉运动信号，**通过屏幕显示，让患者感知**（认识错误），
- 建立大脑和盆底肌之间的**外部条件反射通路**，部分**代偿**或训练已经受损的内部反馈通路。

## 什么是盆底生物反馈




- 1967年Miller等证明，自律性神经系统的活动如心率、血压、腺体分泌等可通过“学习”条件反射产生双向调节，
- 1973年Birk提出生物反馈疗法及“行为医学”概念。
- 1974年Engel用三球囊压力测定模拟排便生理反射，并用此装置经肛门反馈治疗大便失禁，同年Bleijenberg开始采用盆底肌电反馈技术治疗便秘。

## 盆底生物反馈的适应症

| 肛肠科 | 泌尿科 | 妇科 |
|---|---|---|
| • 大便失禁(建议作为金标准)<br>• 出口梗阻性便秘<br>• 肠易激综合征 | • 尿失禁<br>• 间质性膀胱炎 | • 性交痛<br>• 外阴前庭综合征<br>• 外阴痛 |

共同问题
- 肌性盆底痛
- 盆底肌协同障碍
- 盆腔器官脱垂

http://www.aapb.org/

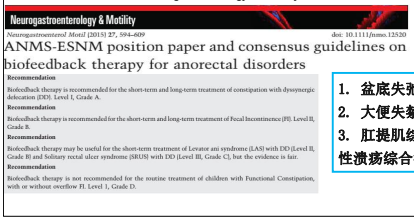
## 盆底生物反馈的适应症

肌肉：过度活动或活动不足

神经：部分阴部神经或骶神经功能障碍

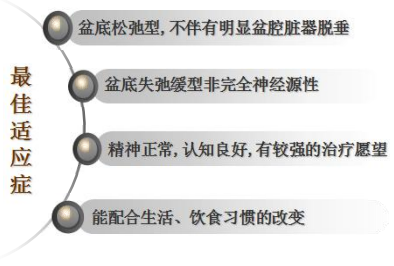
心理精神

The American Neurogastroenterology and Motility Society and the European Society of Neurogastroenterology and Motility




1. 盆底失弛缓所致便秘 1A
2. 大便失禁 2B
3. 肛提肌综合征2B和孤立性溃疡综合征3C

## 盆底生物反馈最佳适应症

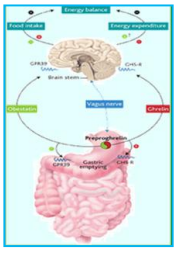



丁嗣晴. 肛肠动力学检查在盆腔脏器脱垂病情评估中的应用及临床价值 中国医刊, 2014，49（4）：6-7.

## 盆底生物反馈的机理

**通过装置建立外部的反馈通路，部分代偿或训练已经受损的内部反馈通路，重建条件反射的过程。**

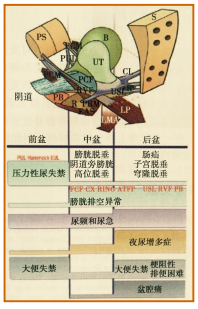
**脑肠轴理论**

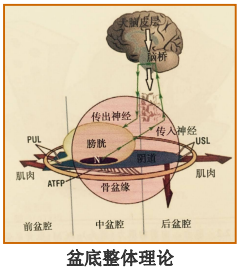



- 神经系统对胃肠运动的调控通过CNS, ANS 和ENS 3个层次；
- 脑-肠轴：在不同层次将胃肠道与中枢神经系统联系起来的神经-内分泌网络；
- 不同层次脑肠轴神经调控过程也是生物反馈治疗的通路

倪敏, 丁义江, 丁嗣晴. 神经调节在功能性胃肠病发病中的作用及其研究进展. 世界华人消化杂志, 2011.

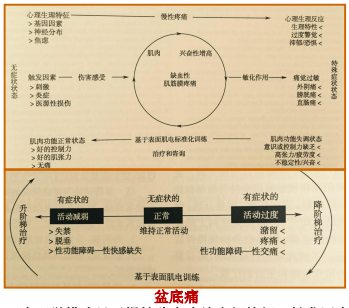
## 盆底生物反馈的机理



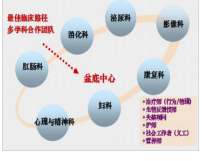

盆底整体理论
Dr. Petros,1990

## 盆底生物反馈的机理




盆底痛
心理生理学模式显示慢性盆底痛综合征特征，触发因素及肌肉调节机制之间的关系

## 盆底生物反馈的最优化临床路径



诊治模式的发展
中医凸显优势的契机

## 盆底生物反馈的最优化临床路径

多维度诊断模式是提高疗效的前提

体系特色：“病”+“证”

中医证候诊断
辨证论治

辨病诊断
•症状：前盆，中盆，后盆等
•形态学：排粪造影，钡灌肠，超声，MR
•功能：肛管直肠测压，尿流动力，盆底神经电生理等

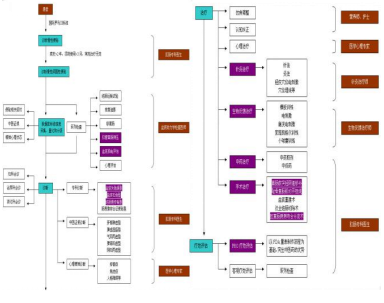
心理诊断
量表及专科医生

生活质量评估
生活质量及PRO量表

## 盆底生物反馈的最优化临床路径

规范诊治流程

诊治流程
优势技术
多学科人员参与

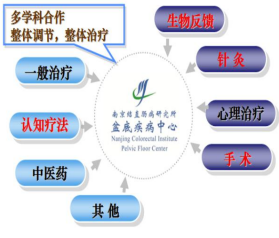


## 盆底生物反馈的最优化临床路径

在多专业一体化平台下规范诊治技术

从预防到治疗

从非手术到微创治疗



## 盆底生物反馈需要多学科团队

- 结直肠
- 妇科
- 泌尿科或男科
- 消化科
- 康复科
- 心理生理学 / 行为医学
- 治疗师（行为疗法，物理治疗）
- 生物反馈技师
- 失禁顾问
- 护师
- 社会工作者（义工）
- 营养师

## 方案设计来源于诊断

**病史**

**查体**

**盆底相关检查：**

- 测压、肌电(**盆底表面肌电**)、尿动力、盆底超声、排粪造影、四重造影、动态磁共振等

**综合评价，分析病因：**

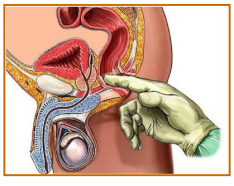
- 部分疑难患者需要多学科联合评估

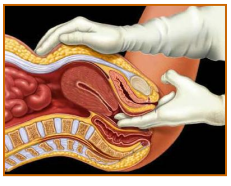
**筛选出合适纳入治疗的患者**

## 方案设计来源于诊断 查 体

**肛门直肠 ：** 肌肉张力，持续收缩能力，快速收缩能力，肌肉协调性，脱垂，耻骨直肠肌牵拉痛和阴部神经扳机点（坐骨棘 ）

**阴道 ：** 子宫骶骨韧带，会阴体，脱垂等





## 方案设计来源于诊断 盆底表面肌电

- **无创技术**
- **经阴道/肛门表面电极记录　盆底横纹肌潜在运动电位**
- **利用模拟信号转化、滤波、信号整合等技术处理数据**
- **建立数据库**
- **应用于盆底肌功能评估，帮助指导个性化康复方案**

**探头**

**采集器**

**软件**

## 方案设计来源于诊断 盆底表面肌电

**肌张力、肌力和肌电活动 的关系**

- **肌张力：**肌肉安静放松状态下的紧张度。
- **肌力：** 指肌肉收缩的力量。
- **肌电活动：**肌肉各种状态下的电生理活动，判断神经和肌肉的功能状态。

**高张力和过度肌电活动**

无关

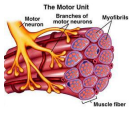
**低张力和肌电活动减弱**

**控制良好，肌张力正常。**

## 方案设计来源于诊断 盆底表面肌电

| 功 能 | 盆底肌纤维类型 |
|---|---|
| 支持（子宫，膀胱和肠道）长时间保持张力 | Ⅰ型（深色）需氧的慢反应型肌，耐疲劳 |
| 性 完成短而有力的收缩 | Ⅱ型 （浅色）厌氧的快反应型肌，不耐疲劳 |
| 括约 | Ⅰ型和Ⅱ型混合 |

- 大约 2/3 盆底肌是慢反应型肌；
- 无法将快反应肌训练成慢反应肌，反之亦然。



## 方案设计来源于诊断

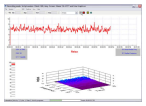
盆底表面肌电

**评估方案- Glazer Protocol**

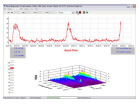
- Howard Glazer, Ph.D.纽约康奈尔医学院教授
- 擅长女性阴道痛及尿失禁等盆底功能障碍的诊断和治疗
- 1995年开始对盆底功能障碍患者表面肌电数据进行分析
- 2005年提出盆底肌评估方案(Glazer Protocol)
- 计算机表面肌电信号处理设备和软件程序指导下的一系列肌肉活动和检测指标
- 收集表面肌电信号，建立数据库
- 设立个性化康复方案，用于临床诊断和治疗

## 方案设计来源于诊断

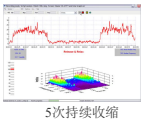
盆底表面肌电



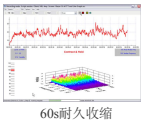
60s前基线静息状态
Pre-baseline



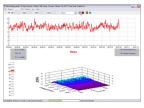
5次快速收缩
Flick



5次持续收缩
10s-Tonic



60s耐久收缩
60s-Endurance



60s后基线休息状态
Post-baseline

## 方案设计来源于诊断

盆底表面肌电

**正常表面肌电五步骤的意义**

**静息状态基线值：**肌肉活动之前能量消耗的水平；基线升高多由组织学、情绪因素或两者共同引起

**肌肉募集的速度：**指肌肉收缩的速度，取决于肌纤维组成及特性、神经分布比例及肌肉长度；快肌和慢肌纤维传导速度不同

**收缩波幅：**肌肉募集的综合，与肌肉体积、神经支配、综合运动单位及疲劳适应度呈正比

**疲劳度：**组织灌注不充分、能量耗尽及代谢物堆；当肌肉以10%-50%最大自主力量收缩时，肌力增加足以压迫小动脉，使肌肉缺氧和能量消耗

**恢复到基线：**如不能恢复到基线，会影响活动后神经肌肉兴奋性，造成本体感觉受损。

## 方案设计来源于诊断

盆底表面肌电

**主要检测指标**

1. 振幅(AVG)
2. 标准差(SD)
3. **变异系数**(CV,CV=SD/AVG)
4. 肌肉收缩募集/恢复时间(Onset)
5. 中值频率(MF)：收缩时能量密度，运用傅立叶变换算法(FFT)公式分析频谱获得。

**变异系数**：反应快、慢型肌运动是否协调，代表肌肉运动的稳定性。

## 方案设计来源于诊断

盆底表面肌电

**Glazer方案在盆底痛领域的应用**

外阴前庭炎综合征
- 静息波幅升高
- 静息状态变异系数升高

外阴痛
- 静息波幅升高
- 收缩波幅下降
- 收缩状态变异系数升高

慢性盆腔痛(男性)
- 静息波幅升高
- 收缩状态变异系数升高

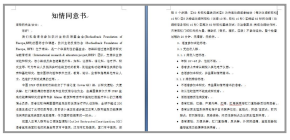

- Glazer HI Electromyographic comparisons of the pelvic Floor in Women with Dyspareunia Vulvodynia Asymptomatic Women J Reprod Med.1998;-
- Glazer HI. Pelvic Floor Muscle Surface Electromyography: Reliability and Clinical Predictive Validity. J Reprod Med.1999;-
- Glazer HI.Web-enabled Glazer surface electromyographic protocol for the remote,real-time assessment and rehabilitation of pelvic floor dysfunction in vulvar vestibulitis syndrome: A case report. J Reprod Med. 2002;-
- Herrick DC,Glazer HI. Pelvic Floor Electromyography in Men With Chronic Pelvic Pain Syndrome:A Case-Control Study Neurourol Urodynam.1998;-


## 方案设计来源于诊断

盆底表面肌电

- **盆底表面肌电-正常值的研究 （共116例）**

| 研究时间 | 研究方式 | 研究对象（无症状人群★） |
|---|---|---|
| 2009.05～2010.07 | **多中心**（南京市中医院 沈阳肛肠医院 湖州肛肠医院） | 116例，男47例，女69例<br>年龄21～60（35.57±13.16）岁 |



知情同意书

★主要排除便秘、大便失禁、肛门直肠痛、尿失禁、外阴阴道痛、盆腔脏器脱垂等盆底功能障碍性疾病及有器质性疾病者。

## 方案设计来源于诊断　　盆底表面肌电

### 盆底表面肌电正常值

| 检测阶段 | 检测指标 | 性别 | 正常范围 | P值 |
|---|---|---|---|---|
| 前基线 | 波幅(μv) | 男<br>女 | 3.94±2.08<br>3.59±1.87 | 0.195 |
| | 变异系数 | 男<br>女 | 0.19±0.08<br>0.19±0.09 | 0.589 |
| 快速收缩 | 收缩反应时间(s) | 男<br>女 | 1.90±0.37<br>1.89±0.37 | 0.963 |
| | 最大收缩波幅(μv) | 男<br>女 | 75.86±34.73<br>47.34±19.31 | **0.000** |
| 持续收缩 | 收缩波幅(μv) | 男<br>女 | 33.08±23.55<br>26.32±11.85 | **0.000** |
| | 变异系数 | 男<br>女 | 0.31±0.07<br>0.30±0.08 | 0.759 |
| | 中值频率(Hz) | 男<br>女 | 86.87±10.37<br>86.18±11.79 | 0.653 |
| 耐久收缩 | 收缩波幅(μv) | 男<br>女 | 34.30±19.57<br>23.19±11.82 | **0.000** |
| | 变异系数 | 男<br>女 | 0.28±0.08<br>0.29±0.09 | 0.430 |
| | 中值频率(Hz) | 男<br>女 | 87.18±12.14<br>85.46±12.17 | 0.306 |
| 后基线 | 波幅(μv) | 男<br>女 | 4.22±2.40<br>3.69±2.09 | 0.084 |
| | 变异系数 | 男<br>女 | 0.24±0.18<br>0.21±0.12 | 0.167 |

薛雅红, 丁嗥晴. 无症状人群盆底表面肌电的研究及其临床意义 临床外科杂志, 2012.

## 方案设计来源于诊断　　盆底表面肌电

### 盆底表面肌电正常值-不同年龄段比较

| 检测阶段 | 检测指标 | 21～30 岁（n=68） | 31～40 岁（n=10） | 41～50 岁（n=12） | 51～60 岁（n=26） | P 值 |
|---|---|---|---|---|---|---|
| 前基线 | 波幅(μv) | 3.65±1.96 | 4.59±1.96 | 3.57±1.94 | 4.28±1.88 | 0.300 |
| | 变异系数 | 0.19±0.06 | 0.18±0.03 | 0.24±0.15 | 0.23±0.10 | 0.160 |
| 快速收缩 | 收缩反应时间(s) | **1.94±0.38** | **1.62±0.42** | **2.09±0.27** | **2.11±0.31** | **0.002** |
| | 最大收缩波幅(μv) | 67.46 ±30.25 | 84.20±35.05 | 59.54±32.22 | 55.07±26.91 | 0.058 |
| 持续收缩 | 收缩波幅(μv) | **30.46±16.41** | **39.41±15.96** | **23.21±13.40** | **24.22±13.48** | **0.030** |
| | 变异系数 | **0.31±0.11** | **0.27±0.05** | **0.39±0.10** | **0.40±0.11** | **0.000** |
| | 中值频率(Hz) | 85.33±10.86 | 84.82±7.99 | 85.90±9.64 | 85.53±10.08 | 0.996 |
| 耐久收缩 | 收缩波幅(μv) | 23.17±11.63 | 30.94±9.48 | 20.51±13.16 | 21.75±13.47 | 0.172 |
| | 变异系数 | **0.27±0.09** | **0.25±0.07** | **0.35±0.07** | **0.38 ±0.12** | **0.000** |
| | 中值频率(Hz) | 86.25±11.39 | 87.70±11.91 | 90.08±16.43 | 85.38±11.51 | 0.704 |
| 后基线 | 波幅(μv) | 4.08±2.29 | 4.84±2.29 | 2.75±1.45 | 3.95±2.14 | 0.147 |
| | 变异系数 | 0.22±0.15 | 0.30±0.28 | 0.24± 0.08 | 0.22±0.12 | 0.750 |

1. **收缩波幅：**不同收缩阶段男性明显大于女性；
2. **快速收缩反应时间：**随年龄增加延长；
3. **持续收缩：**随年龄增加收缩**波幅**下降、 **变异系数**升高。

## 方案设计来源于诊断　　盆底表面肌电

### 盆底表面肌电异常参考值

- **研究时间：2009.7～2012.5**
- **研究单位：南京市中医院盆底中心**
- **研究对象：盆底失弛缓综合征**
  **功能性肛门直肠痛**
  **盆底松弛综合征**

| | n | M | F | Age(y) |
|---|---|---|---|---|
| 盆底失弛缓综合征 | **73** | 31 | 42 | 18-40 (28.04±5.83) |
| 功能性肛门直肠痛 | **146** | 45 | **101** | 20-79 (49.33±12.37) |
| 盆底松弛综合征 | **145** | 12 | **133** | 35-80 (56.43±10.29) |

## 方案设计来源于诊断　　盆底表面肌电

### 盆底失弛缓综合征

| 检测阶段 | 检测指标 | 盆底失弛缓（n=73） | 正常组（n=80） | t 值 | P 值 |
|---|---|---|---|---|---|
| 前基线 | 波幅(μv) | **4.93±3.01** | **3.80±1.97** | **2.723** | **0.007** |
| | 变异系数 | 0.18± 0.07 | 0.19±0.05 | 0.860 | 0.391 |
| 快速收缩 | 收缩反应时间(s) | 1.85±0.39 | 1.91±0.40 | 0.953 | 0.342 |
| | 最大收缩波幅(μv) | **59.15±28.14** | **69.95±31.05** | **2.245** | **0.026** |
| 持续收缩 | 收缩波幅(μv) | 27.13±16.49 | 31.41±16.34 | 1.607 | 0.110 |
| | 变异系数 | **0.38±0.13** | **0.31±0.11** | **3.147** | **0.002** |
| | 中值频率(Hz) | 86.83±18.25 | 85.44±10.44 | 0.581 | 0.562 |
| 耐久收缩 | 收缩波幅(μv) | 24.05±14.58 | 23.85±11.65 | 0.092 | 0.927 |
| | 变异系数 | **0.35±0.14** | **0.28±0.10** | **4.094** | **0.000** |
| | 中值频率(Hz) | 85.53±19.81 | 86.29±11.36 | 0.292 | 0.771 |
| 后基线 | 波幅(μv) | 4.50±2.49 | 4.21±2.27 | 0.766 | 0.445 |
| | 变异系数 | 0.22±0.11 | 0.23±0.17 | 0.222 | 0.824 |

薛雅红, 丁嗥晴, 丁又江, 等. 盆底失弛缓综合征患者盆底表面肌电的改变及临床意义 世界华人消化杂志, 2012, 20 (12) :1025-1029.

## 方案设计来源于诊断　　盆底表面肌电

### 盆底失弛缓综合征 –与年龄相关性

| 检测阶段 | 检测指标 | t 值 | P 值 |
|---|---|---|---|
| 前基线 | 波幅(μv) | -0.229 | 0.051 |
| | 变异系数 | -0.213 | 0.071 |
| 快速收缩 | 收缩反应时间(s) | -0.016 | 0.891 |
| | 最大收缩波幅(μv) | 0.003 | 0.981 |
| 持续收缩 | 收缩波幅(μv) | -0.162 | 0.170 |
| | **变异系数** | **0.359** | **0.002** |
| | 中值频率(Hz) | 0.029 | 0.808 |
| 耐久收缩 | 收缩波幅(μv) | -0.131 | 0.271 |
| | **变异系数** | **0.274** | **0.019** |
| | 中值频率(Hz) | 0.080 | 0.500 |
| 后基线 | 波幅(μv) | -0.108 | 0.361 |
| | 变异系数 | -0.109 | 0.359 |

- **随着年龄增长，变异系数升高。**

## 方案设计来源于诊断　　盆底表面肌电

### 盆底失弛缓综合征

- 静息波幅大于无症状组：静息状态盆底肌过度活动
- 最大收缩波幅小于无症状组：快型肌募集功能差
- 变异系数大于无症状组：盆底肌（快、慢型肌）运动不协调
- 变异性与年龄呈正相关：随着年龄的增加，失弛缓患者肌肉运动的协调性越来越差

## 方案设计来源于诊断　盆底表面肌电

### 功能性肛门直肠痛

| 表面肌电信号参数 | | 无症状组 (n=125 例) | FAP 组 (n=146 例) | t 值 | P 值 |
|---|---|---|---|---|---|
| 前基线 | 平均波幅 | 4.10±2.14 | 4.67±3.24 | 1.687 | 0.093 |
| | 变异系数 | 0.20±0.08 | 0.18±0.08 | 2.139 | 0.053 |
| 快速收缩 | 起始时间 | 1.98±0.37 | 1.96±0.37 | 0.329 | 0.742 |
| | 最大波幅 | 66.79±31.03 | 5.65±34.46 | 2.559 | *0.011* |
| 持续收缩 | 平均波幅 | 29.21±15.59 | 24.19±14.85 | 2.711 | *0.007* |
| | 变异系数 | 0.35±0.12 | 0.40±0.13 | 3.037 | *0.003* |
| | 中值频率 | 85.40±10.20 | 88.54±11.70 | 2.336 | *0.020* |
| 耐久收缩 | 平均波幅 | 23.24±12.00 | 21.42±13.02 | 1.186 | 0.237 |
| | 变异系数 | 0.31±0.12 | 0.37±0.15 | 3.471 | *0.001* |
| | 中值频率 | 86.17±11.85 | 88.33±14.09 | 1.358 | 0.176 |
| 后基线 | 平均波幅 | 4.20±2.36 | 4.37±3.10 | 0.515 | 0.607 |
| | 变异系数 | 0.23±0.15 | 0.21±0.12 | 1.266 | 0.207 |

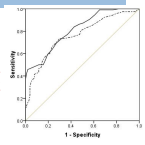
- **收缩波幅降低，变异系数升高。**

## 方案设计来源于诊断　盆底表面肌电

### 功能性肛门直肠痛

**采用受试者工作曲线(ROC)寻求特异性指标**

| | | | | |
|---|---|---|---|---|
| 目的： | ROC曲线评价盆底表面肌电对功能性肛门直肠痛的临床诊断价值 | | | |
| 结果： | 曲线下面积 | | 灵敏度 | 特异度 |
| | 持续收缩-变异性 | 70% | 72.8% | **0.813** |
| | 耐久收缩-变异性 | 73.3% | 70% | 0.761 |
| 结论： | **收缩阶段的变异系数** 对功能性肛门直肠痛有较好的临床诊断价值 | | | |




薛雅红, 丁曙晴. 受试者工作曲线评价盆底表面肌电对功能性肛门直肠痛的诊断价值. 世界华人消化杂志.

## 方案设计来源于诊断　盆底表面肌电

### 功能性肛门直肠痛

- 前基线各指标间差异无统计学意义
- 快速收缩 波幅小于无症状组：**快速收缩时快型肌不能充分募集**
- 持续收缩平均收缩波幅小于无症状组，中值频率大于无症状组：**慢型肌募集差**
- 持续及耐久收缩变异系数大于无症状组：**保持收缩时FARP患者快、慢型肌协调性差**
- 收缩阶段的**变异系数**对功能性肛门直肠痛有较好的临床诊断价值

## 方案设计来源于诊断　盆底表面肌电

### 盆底松弛综合征

| 检测阶段 | 检测指标 | 正常组 (n=110) | 盆底松弛 (n=145) | t 值 | P 值 |
|---|---|---|---|---|---|
| 前基线 | 波幅(μv) | 4.10±2.14 | 3.27±1.97 | 3.310 | *0.001* |
| | 变异系数 | 0.20± 0.08 | 0.17±0.09 | 3.295 | *0.001* |
| 快速收缩 | 收缩反应时间(s) | 1.98±0.37 | 1.98±0.34 | 0.124 | 0.901 |
| | 最大收缩波幅(μv) | 66.79±31.03 | 36.31±17.86 | 9.686 | *0.000* |
| 持续收缩 | 收缩波幅(μv) | 29.21±15.59 | 17.73±9.26 | 7.208 | *0.000* |
| | 变异系数 | 0.35±0.12 | 0.38±0.11 | 1.989 | *0.048* |
| | 中值频率(Hz) | 85.40±10.20 | 89.66±16.79 | 2.556 | *0.011* |
| 耐久收缩 | 收缩波幅(μv) | 23.24±12.00 | 15.40±8.03 | 6.204 | *0.000* |
| | 变异系数 | 0.31±0.12 | 0.35±0.13 | 2.189 | *0.029* |
| | 中值频率(Hz) | 86.17±11.85 | 90.47±17.82 | 2.363 | *0.019* |
| 后基线 | 波幅(μv) | 4.20±2.36 | 3.22±2.07 | 3.584 | *0.000* |
| | 变异系数 | 0.23±0.15 | 0.22±0.17 | 0.817 | 0.414 |

**慢型肌和快型肌均收缩活动减弱；肌肉稳定性差；不耐疲劳。**

## 方案设计来源于诊断　盆底表面肌电

### 盆底表面肌电特点小结

- **正常人**
  - **变异性：无性别差异，随年龄增长变异性大**
- **三种盆底疾病的共性**
  - **盆底肌收缩变异性差，提示慢性疲劳。**
    - **盆底肌电活动过度或不足；**
    - **慢型肌稳定性差**
    - **快型肌募集功能差；**
    - **快慢型肌运动不协调等**

## 方案设计来源于诊断　盆底表面肌电

### 基于盆底表面肌电

**诊　断** → 特异性的诊断指标

**治　疗** → 分析数据
**指导选择生物反馈方案**

**疗效评估** → 与疗效密切相关的指标
进一步完善治疗

## 盆底生物反馈
### 训练目标

- **定位训练肌肉**

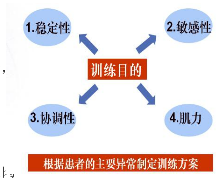
  让患者感知盆底肌；可使用另外通道显示腹部臀部肌肉或内收肌不参与运动；

- **特异性训练**

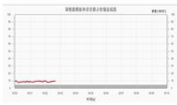
  强调只收缩盆底肌，重在质量而非数量，即不追求波幅的升高；

- **区分肌纤维类型**
- **标准化训练**

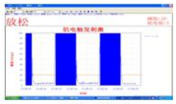
  达到静息基线正常；快速和间断收缩肌肉募集的速度、收缩波幅及收缩后恢复到基线的速度等。




## 盆底生物反馈
### 治疗模式


放松训练

稳定性训练（Kegel模板）



触发电刺激

耐力训练

## 盆底生物反馈
### 治疗模式
### 训练稳定性

- **模板训练**
  - 根据评估时患者的基础值设定训练难度
  - 根据评估制定患者的训练进程
- **配合家庭kegel训练**
  - 根据医院内治疗师指导找准感觉
  - 放松10秒持续收缩10秒，每日2次，每次60次

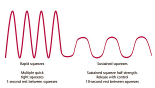
ORIGINAL CONTRIBUTION

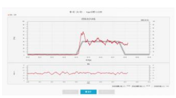
**Biofeedback for Fecal Incontinence: A Randomized Study Comparing Exercise Regimens**

Lynne Bartlett, M.P.H.[1] • Kathryn Sloots, R.N., B.Sc.(Hons.)[2]
Madeleine Nowak, B.Sc., Ph.D.[1] • Yik-Hong Ho, B.S.(Hons.), M.D., F.R.A.C.S.[3]

*CONCLUSIONS:* Patients attending this biofeedback program attained significant improvement in the severity of their fecal incontinence and in their quality of life. Although introduction of rapid muscle squeezes had little impact on fecal incontinence severity or patient quality of life, patient exercise compliance at prescribed or greater levels did.

Dis Colon Rectum 2011; 54: 846－856



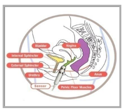



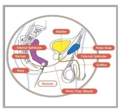
## 盆底生物反馈
### 治疗模式
### 训练协调性

- 正确训练盆底肌
- 注意臀大肌、腹肌、内收肌和闭孔内肌等辅助肌不能过度参与训练
- 稳定性训练
- 与以往方案训练Valsava动作不太一致

## 盆底生物反馈
### 治疗模式
### 训练感觉功能--单纯电刺激

- 盆底痛：10-12Hz
- 急迫性失禁：20 Hz
- 张力性失禁：50-100 Hz
- 尿潴留或便秘：200 Hz




Diseases of the Colon & Rectum

Randomized, Controlled Trial of Anal Electrical Stimulation for Fecal Incontinence

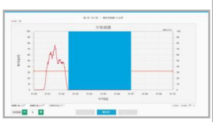
Christine Norton, Ph.D., R.N.,[1,2] Angela Gibbs, R.N.,[3]
Michael A. Kamm, M.D., F.R.C.P.[3]

[1] Burdett Institute of Gastrointestinal Nursing, St. Mark's Hospital, Harrow, United Kingdom
[2] Florence Nightingale School of Nursing, King's College London, London, United Kingdom
[3] Physiology Unit, St. Mark's Hospital, Harrow, United Kingdom

($P$ = 0.001). CONCLUSIONS: Eight weeks of anal electric stimulation was rated by patients as having improved their bowel control to a modest extent. There was no statistically significant difference detected between the groups, suggesting that 1 Hz was as effective as 35 Hz. This raises the possibility that the main effect is not sphincter contraction but sensitization of the patient to the anal area, or simply the effect of intervening *per se*. Home electric stimulation is a relatively cheap and generally well-tolerated therapy in the conservative treatment of fecal incontinence. [Key words: Fecal incontinence; Electrical stimulation; Conservative management]

## 盆底生物反馈
### 治疗模式
### 训练感觉功能—触发电刺激

- 刺激强度：患者感觉舒服为度
- 根据前三次收缩将会测定一个阈值，之后患者每次收缩达到阈值就会触发一次肌电刺激，收缩/放松交替进行，治疗持续15min。

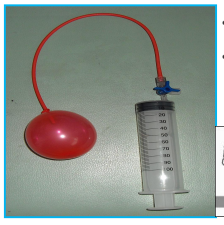


| Type | Work/rest | Ramp up | Ramp down | Pulse rate | Pulse width |
|---|---|---|---|---|---|
| Incontinence stress 1 | 4S/6S ×90 | 1 | 1 | 40HZ | 200μS |
| Incontinence stress 2 | 6S/10S×60 | 2 | 1 | 40HZ | 200μS |
| Incontinence stress3 | 4S/6S ×90 | 1 | 1 | 10HZ | 200μS |
| Incontinence stress4 | 4S/6S ×90 | 1 | 1 | 10HZ | 200μS |
| Incontinence urge 1 | 4S/6S ×90 | 1 | 1 | 10HZ | 200μS |
| Incontinence urge 2 | 8S/16S×44 | 2 | 1 | 10HZ | 200μS |
| Incontinence urge 3 | 5S/8S ×80 | 2 | 1 | 20HZ | 200μS |
| Incontinence urge 4 | 8S/16S×44 | 2 | 1 | 10HZ | 200μS |
| Incontinence mixed1 | 4S/6S ×90 | 1 | 1 | 20HZ | 200μS |
| Incontinence mixed2 | 5S/8S ×90 | 2 | 1 | 20HZ | 200μS |

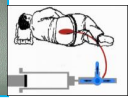
## 盆底生物反馈

治疗模式

训练感觉功能—小球囊训练



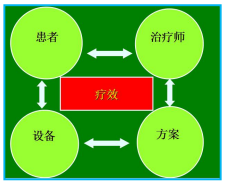
- 根据测试决定注水或注气量
- 根据训练目的决定逐渐增量或减量



充胀感觉反馈训练器

## 方案设计

- 随着病理生理异常的发现
  - 中国人正常值及各种盆底功能异常数据库
- 随着治疗师水平的提高
  - 盆底生物反馈治疗师培训及认证并多学科合作
- 随着对使用设备的了解及熟练
- 随着对病人的了解和理解



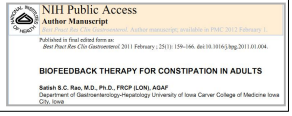

## 方案设计

| | |
|---|---|
| 梅奥医院 | 短期强化治疗<br>45min/次, 3次/天, 2周为1个疗程<br>治疗师全程指导<br>家用训练器根据方案训练并定期随访 |
| 明尼苏达大学 | 1次/周，4次一疗程<br>配合家庭训练 |
| 康奈尔大学 | 家用训练器<br>根据训练方案自行训练<br>每2周进行盆底表面肌电评估测试 |

## 方案设计

便秘-爱荷华方案

- 第一阶段 ：纳入病人
  - 面谈/排便日记
  - 主观评估（视觉评分量表）
  - 腹式呼吸练习
- 第二阶段：积极阶段- 3 月（6 次训练）
  - 每2周就诊1次 - 60-90 min/次
  - 测压，结肠传输时间，排便日记，视觉评分量表
  - 家庭训练装置
- 第三阶段 ：巩固强化
  - 6 周、3 月、6 月


NIH Public Access
Author Manuscript

BIOFEEDBACK THERAPY FOR CONSTIPATION IN ADULTS

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## 方案设计

我们的方案

- 治疗模式：触发电刺激、Kegel模板训练
- 训练时间：1次/天，30min/次，5次/周
- 疗程：10次一疗程，常规治疗2个疗程
- 配合：针灸、中药、家庭训练
- 随访：定期盆底表面肌电评估

## 方案设计

具体制定基于sEMG评估-以功能性肛门直肠痛(FAP)为例

FAP
收缩变异性升高

| | |
|---|---|
| 单纯变异性升高 | • Kegel训练（收缩10s，放松10s） |
| 静息基线升高 | • 放松训练(10-15min)<br>• Kegel训练(收缩10s，放松10s) |
| 静息基线降低 | • 单纯电刺激<br>• Kegel训练(收缩10s，放松10s) |
| 收缩波幅降低 | • 触发电刺激<br>• Kegel训练(收缩10s，放松10s) |

## 循证医学结果

*Applied Psychophysiology and Biofeedback, Vol. 29, No. 3, September 2004 (© 2004)*

**Biofeedback Treatment for Functional Anorectal Disorders: A Comprehensive Efficacy Review**

Olafur S. Palsson,[1,2] Steve Heymen,[1] and William E. Whitehead[1]

*This review aimed to critically evaluate the literature on the efficacy of biofeedback for functional anorectal disorders, rate these biofeedback applications according to established guidelines, and make recommendations for this field based on the literature. The Medline and PsychInfo databases were searched to obtain all papers published from 1975 to 2003 that included the terms "biofeedback" and either "constipation," "pelvic floor dyssynergia," "fecal incontinence," or "anorectal pain." Adult and pediatric papers in any language were screened. Prospective studies with five or more participants and a description of the treatment protocol and outcome were selected for review. Seventy-four studies qualified for review: 33 trials on fecal incontinence (FI), 38 on pelvic floor dyssynergia (PFD) or functional constipation, and 3 on anorectal pain. Only 20% of studies were controlled outcome trials. Treatment protocols, etiological subgroups studied and outcome measures varied greatly. The overall average probability of successful treatment outcome for patients treated with biofeedback was 67.2% for functional FI and 62.4% for constipation. There were insufficient data to warrant such calculation for anorectal pain. According to standard efficacy rating criteria, biofeedback treatment is efficacious for functional constipation or PFD in children and probably efficacious in adults; probably efficacious for functional FI; and possibly efficacious for anorectal pain. Utilizing data from all applicable studies, we found that success rate per subject is significantly higher for biofeedback treatment than for standard medical care for PFD/functional constipation, and FI (p < .001 for both). Biofeedback treatment may therefore be viewed as a valuable adjunct to medical management of functional PFD/constipation and incontinence. A number of recommendations for future investigations are made based on the review.*

- 功能性大便失禁的有效率为**67.2%,**
- 慢性便秘的有效率为**62.4 %;**
- 生物反馈治疗对儿童和成人同样有效。
- 生物反馈治疗功能性便秘明显优于标准医疗方案，是有效的辅助治疗方法。

**Heymen S, Scarlett Y, Jones K, et al. Randomized controlled trial (RCT) shows biofeedback to be superior to alternative treatments for patients with pelvic floor dyssynergia-type constipation (PFD). Am J Gastroenterol, 2005,100:335 .**

## 循证医学结果

**Biofeedback for treatment of chronic idiopathic constipation in adults (Review)**

THE COCHRANE COLLABORATION®

**Authors' conclusions**

Currently there is insufficient evidence to allow any firm conclusions regarding the efficacy and safety of biofeedback for the management of people with chronic constipation. We found low or very low quality evidence from single studies to support the effectiveness of biofeedback for the management of people with chronic constipation and dyssynergic defecation. However, the majority of trials are of poor methodological quality and subject to bias. Further well-designed randomised controlled trials with adequate sample sizes, validated outcome measures (especially patient reported outcome measures) and long-term follow-up are required to allow definitive conclusions to be drawn.

- 2014年的系统综述：由于研究方法，入组患者异质，病例数等无法得出生物反馈对慢性便秘有效性和安全性的确切证据。
- 需要设计良好的随机对照研究及充足的样本数，有效的结果评估特别是PRO结果以及长期随访资料。

## 循证医学结果

**出口梗阻型便秘**

- Heymen 采用生物反馈技术治疗117例出口梗阻性便秘患者，成功率为70%，明显优于安慰剂组有效率（38%）；
  - **Heymen S, Scarlett Y, Jones K, et al. Randomized controlled trial (RCT) shows biofeedback to be superior to alternative treatments for patients with pelvic floor dyssynergia-type constipation (PFD). Am J Gastroenterol, 2005,100:335**
- Rao随机对照研究显示，生物反馈治疗组疗效（88%）明显优于假生物反馈治疗组（48%）；
  - **Rao SS, Kinkade KJ, Schulze KS, et al.Biofeedback therapy (bt) for dyssynergic constipation-randomized controlled trial.Gastroenterology, 2005,128:1851.**
- Charioni将生物反馈技术分别用于治疗出口梗阻性便秘和结肠慢传输性便秘患者，结果显示结肠慢传输性便秘患者的有效率仅为8%，明显低于出口梗阻性便秘患者的有效率（71%）。
  - **Chiarioni, G., etal., One-year follow-up study on the effects of electrogalvanic stimulation in chronic idiopathic constipation with pelvic floor dyssynergia. Dis Colon Rectum, 2004.47(3):346-353.**

## 循证医学结果

**大便失禁**

- **根据AAPB标准有效率判断：**
  - 作为大便失禁的辅助治疗：毫无疑问
  - 与常规治疗比较：**67.2% vs. 35.9%**
  - 疗效确切，但仍然需要进一步随机、对照、双盲、多中心、大样本等研究

**http://www.aapb.org**

## 循证医学结果

**功能性肛门直肠痛**

- **标准的保守治疗对肛门直肠痛无效**

  Whitehead et al., 2000; Whitehead, Wald, & Norton, 2001
- **2004年Olafur系统综述报告：只有3篇前瞻性但非随机研究**

**Biofeedback Treatment for Functional Anorectal Disorders: A Comprehensive Efficacy Review**

Olafur S. Palsson,[1,2] Steve Heymen,[1] and William E. Whitehead[1]

*This review aimed to critically evaluate the literature on the efficacy of biofeedback for functional anorectal disorders, rate these biofeedback applications according to established guidelines, and make recommendations for this field based on the literature. The Medline and PsychInfo databases were searched to obtain all papers published from 1975*

## 循证医学结果

**功能性肛门直肠痛**

**近期对功能性肛门直肠痛治疗的文献评价**

①检索范围： Cochrance Library、Pubmed、MEDLINE数据库。

②有关治疗的文献共68篇，而随机对照试验仅有3篇，其中关于生物反馈治疗的1篇。

| 年份 | 作者 | 研究方法 | 治疗方法 | 随机及盲法 | 评价指标 | 随访 |
|---|---|---|---|---|---|---|
| 2010 | Chiarioni et al | 平行随机对照研究 | 生物反馈组(n=52):30min一次，5次一疗程，治疗4疗程<br>电刺激组(n=52):9次30-45min的电刺激，每周治疗3次<br>按摩和温水坐浴(n=53)：3次/周门诊按摩，门诊共9次；在家温水坐浴后按摩，2次/天 | 随机数字信封<br>结局评估者设盲 | ①主要指标："比起治疗前，疼痛是否有缓解（是/否）"<br>② VAS评分<br>③压力测定，球囊逼出试验 | 3,6,12个月 |

*Chiarioni G, Nardo A, Vantini I, et al. Biofeedback is superior to electrogalvanic stimulation and massage for treatment for levator ani syndrome. Gastroenterology. 2010 April; 138(4): 1321–1329.*

## 我们的研究结果

- 时间：2009.5～2012.9

| 治疗疾病 | 例数 | 男 | 女 | 年龄 |
|---|---|---|---|---|
| 盆底失弛缓综合征 | 76 | 35 | 41 | 19-42岁 |
| 盆底松弛综合征 | 80 | 0 | 80 | 45-76岁 |
| 功能性肛门直肠痛 | 80 | 32 | 48 | 20-70岁 |

- **生物反馈治疗方案**
  - 盆底失弛缓：放松训练+Kegel训练
  - 盆底松弛：Kegel训练+电刺激
  - 功能性肛门直肠痛：Kegel训练+（放松训练、电刺激）

## 我们的研究结果

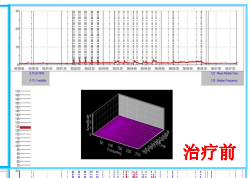
盆底失弛缓综合征

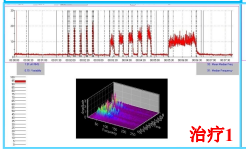
**76例盆底失弛缓治疗1疗程前后比较**

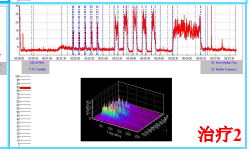
| 表面肌电信号参数 | | 治疗前 | 治疗后 | t 值 | P 值 |
|---|---|---|---|---|---|
| 前基线 | 平均波幅 | 5.47±3.66 | 3.00±1.77 | 4.192 | 0.000 |
| | 变异系数 | 0.19±0.07 | 0.15±0.05 | 2.222 | 0.033 |
| 快速收缩 | 起始时间 | 1.98±0.32 | 2.10±0.33 | 1.730 | 0.093 |
| | 最大波幅 | 53.85±35.33 | 43.13±34.65 | 1.433 | 0.161 |
| 持续收缩 | 平均波幅 | 25.09±16.14 | 23.43±19.11 | 0.505 | 0.617 |
| | 变异系数 | 0.40±0.12 | 0.31±0.12 | 4.280 | 0.000 |
| | 中值频率 | 93.12±15.15 | 97.05±19.32 | 0.987 | 0.331 |
| 耐久收缩 | 平均波幅 | 21.61±14.63 | 21.55±17.38 | 0.020 | 0.984 |
| | 变异系数 | 0.38±0.12 | 0.30±0.13 | 3.155 | 0.003 |
| | 中值频率 | 93.30±15.93 | 97.80±18.94 | 1.191 | 0.242 |
| 后基线 | 平均波幅 | 4.79±3.10 | 3.17±1.60 | 2.958 | 0.006 |
| | 变异系数 | 0.23±0.17 | 0.22±0.20 | 0.333 | 0.741 |

- 静息基线降低，变异性降低

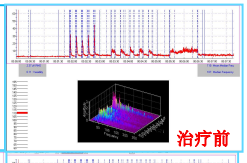
- 杨**，男，74岁，排便不畅3年余
- 3~4天排便1次，排便时间约30分钟，费力，大便干多为硬块，轻微坠胀感，小便等待时间延长
- 肛门指诊：力排肛直角变小
- 结肠传输试验：未见异常
- 排粪造影：直肠粘膜内套叠
- 诊断：盆底失弛缓

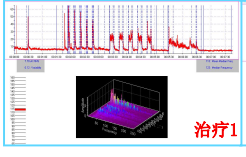


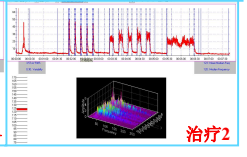




- 丁**，男，51岁，排便困难5年余，加重1年。有便意，伴不净感，药物辅助排便，排便时间30分钟以上，伴腹胀，肛门梗阻感明显。
- 诱发电位：左侧骶部S诱发电位潜伏期延长。
- 肛门压力测定：最大收缩压降低，排便弛缓反射上升相。
- 诊断：盆底失弛缓




## 我们的研究结果

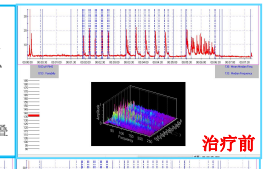
盆底松弛综合征

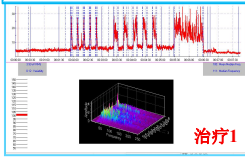
**80例盆底松弛患者治疗1疗程前后比较**

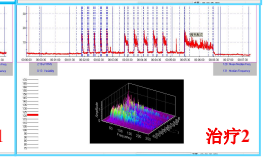
| 表面肌电信号参数 | | 治疗前 | 治疗后 | t 值 | P 值 |
|---|---|---|---|---|---|
| 前基线 | 平均波幅 | 3.31±2.37 | 3.24±2.20 | 0.790 | 0.435 |
| | 变异系数 | 0.16±0.05 | 0.18±0.11 | 1.101 | 0.278 |
| 快速收缩 | 起始时间 | 2.00±0.37 | 1.90±0.35 | 1.130 | 0.266 |
| | 最大波幅 | 34.08±19.63 | 42.09±19.33 | 2.092 | 0.043 |
| 持续收缩 | 平均波幅 | 17.09±8.79 | 22.11±11.27 | 2.460 | 0.019 |
| | 变异系数 | 0.37±0.11 | 0.33±0.09 | 2.079 | 0.044 |
| | 中值频率 | 90.43±25.29 | 88.70±12.77 | 0.404 | 0.688 |
| 耐久收缩 | 平均波幅 | 15.39±7.42 | 18.35±9.78 | 1.798 | 0.080 |
| | 变异系数 | 0.35±0.13 | 0.30±0.11 | 2.229 | 0.032 |
| | 中值频率 | 91.33±26.39 | 90.07±13.97 | 0.273 | 0.787 |
| 后基线 | 平均波幅 | 3.82±2.82 | 2.89±1.93 | 1.744 | 0.079 |
| | 变异系数 | 0.21±0.13 | 0.23±0.19 | 0.387 | 0.701 |

- 收缩波幅升高，变异性降低

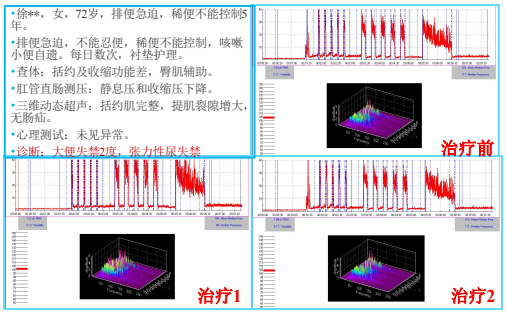
- 张**，女，57岁，排便困难15年。
- 无便意，需辅助排便，费力，轻微腹胀，排便不尽感、肛门梗阻感，每次排便20分钟，硬块散在或成条便，矢气多，咳嗽小便溢出。
- 结肠传输试验：正常。
- 肛管直肠测压：静息压和收缩压下降。
- 三维动态超声：直肠前突、直肠粘膜套叠
- 诊断：盆底松弛



- 徐**，女，72岁，排便急迫，稀便不能控制5年。
- 排便急迫，不能忍便，稀便不能控制，咳嗽小便自遗。每日数次，衬垫护理。
- 查体：括约及收缩功能差，臀肌辅助。
- 肛管直肠测压：静息压和收缩压下降。
- 三维动态超声：括约肌完整，提肌裂隙增大，无肠疝。
- 心理测试：未见异常。
- 诊断：大便失禁2度，张力性尿失禁




## 我们的研究结果

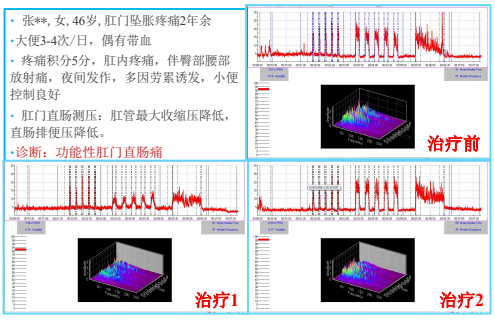
功能性肛门直肠痛

**80例功能性肛门直肠痛患者治疗1疗程前后比较**

| 表面肌电信号参数 | | 治疗前 | 治疗后 | t 值 | P 值 |
|---|---|---|---|---|---|
| 前基线 | 平均波幅 | 4.39±1.54 | 3.74±1.90 | 2.192 | 0.034 |
| | 变异系数 | 0.18±0.07 | 0.22±0.14 | 1.543 | 0.131 |
| 快速收缩 | 起始时间 | 1.93±0.37 | 1.85±0.37 | 1.026 | 0.311 |
| | 最大波幅 | 64.29±19.17 | 75.48±25.07 | 3.081 | 0.004 |
| 持续收缩 | 平均波幅 | 26.44±11.90 | 34.63±15.40 | 3.185 | 0.003 |
| | 变异系数 | 0.45±0.12 | 0.31±0.07 | 6.397 | 0.000 |
| | 中值频率 | 84.40±5.89 | 90.48±9.64 | 3.395 | 0.002 |
| 耐久收缩 | 平均波幅 | 19.33±11.15 | 20.57±10.05 | 0.480 | 0.633 |
| | 变异系数 | 0.43±0.17 | 0.32±0.09 | 3.498 | 0.001 |
| | 中值频率 | 84.53±10.76 | 89.54±10.61 | 1.887 | 0.067 |
| 后基线 | 平均波幅 | 3.71±2.00 | 3.42±1.96 | 0.830 | 0.411 |
| | 变异系数 | 0.22±0.10 | 0.27±0.15 | 1.829 | 0.075 |

- 静息基线降低，收缩波幅升高，变异性降低

- 张**, 女, 46岁, 肛门坠胀疼痛2年余
- 大便3-4次/日，偶有带血
- 疼痛积分5分，肛内疼痛，伴臀部腰部放射痛，夜间发作，多因劳累诱发，小便控制良好
- 肛门直肠测压：肛管最大收缩压降低，直肠排便压降低。
- 诊断：功能性肛门直肠痛




## 我们的研究结果

- 慢性便秘中出口梗阻型便秘 577例

| | |
|---|---|
| 盆底失弛缓型 | 325 |
| 盆底松弛型 | 153 |
| 混合型 | 82 |
| 合并肛门直肠痛 | 17 |
| 有效率 | 73.7% |

2008.6～2013.6，南京市中医院盆底中心1560例患者数据资料，包括慢性便秘，功能性肛门直肠痛，大便失禁，尿失禁等

| PFD | FC | FARP | FI | UI | others | Total |
|---|---|---|---|---|---|---|
| n | 1178 | 202 | 79 | 67 | 34 | 1560 |
| % | 75.5% | 12.9% | 5.1% | 4.3% | 2.2% | 100% |

## 治疗后随访和评估

- 患者日记
- 相应症状评分量表
- 表面肌电评估

## 多功能一体化信息服务平台

便捷数据采集

智能随访跟踪

实时远程培训

高效科研管理

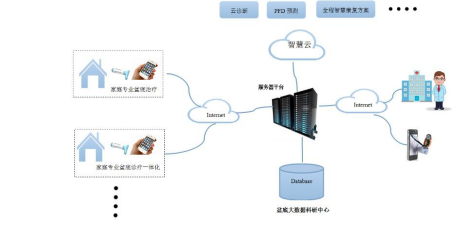
核心功能

多维度数据分析挖掘


[1]丁曙晴,丁义江,舒琳,金洵,蒋亚文,霍维宇,丁康,谭妍妍. 慢性便秘诊治平台的建立及管理[J]. 辽宁中医药大学学报,2008,02:36-37.

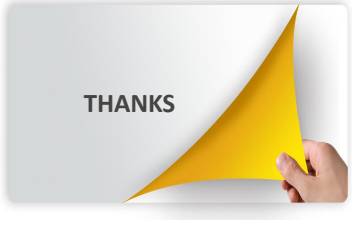
大数据　大作为

## 着眼未来、构建盆底数据中心




构建涵盖家庭、患者、医院、医生、专业化治疗方案、全程智慧康复**完整的盆底康复生态环境**

- **临床疗效和最佳适应证**
- **培训（教学和教育）**
- **研究和转化**




南京结直肠疾病研究所
盆底疾病中心
Nanjing Colorectal Institute
Pelvic Floor Center

# 脱垂性疾病与便秘的研究与治疗进展

崔煅辉

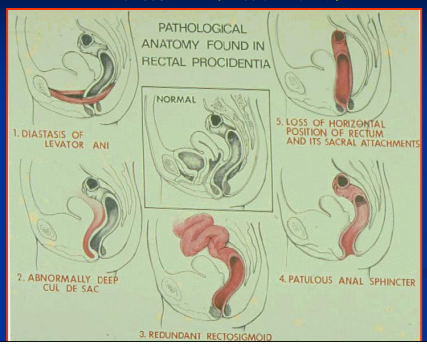
## 直肠脱垂的临床特点

男 6:1 女

发病年龄

- 女性50岁以上高发
- 男性发病高峰为40岁

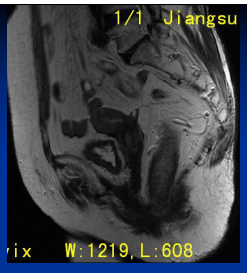
## 直肠脱垂5大病理因素

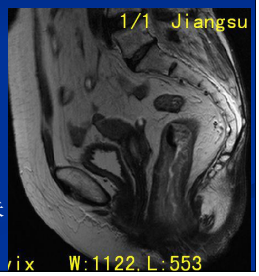



## 其他致病因素

- 神经病变
- 结缔组织病变
- 多产妇

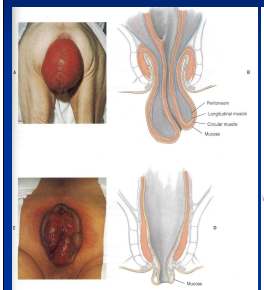
Tou S, Brown SR, NelsonRL. Surgery for complete (full-thickness) rectal prolapse in adults. Cochrane Database of Systematic Reviews 2015, Issue 11. Art. No.: CD001758. DOI: 10.1002/14651858.CD001758.pub3.

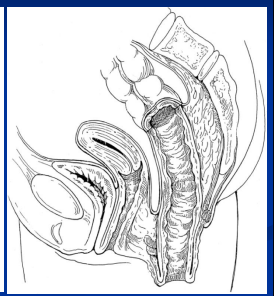



1. 提肛肌松弛
2. Douglas窝过低
3. 骶直肠分离，水平位消失

## 直肠脱垂 vs. 粘膜脱垂

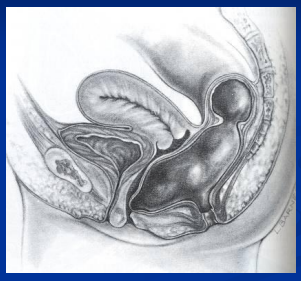




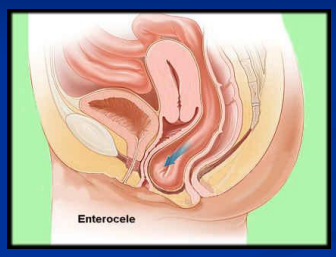
## 直肠脱垂相关病变

- 盆底下降
- 肠疝
- 直肠前突
- 膀胱脱垂
- 子宫阴道脱垂
- 便秘（25%）
- 肛门失禁（75%）

## 直肠前突



## 肠疝



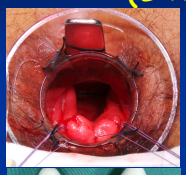

## 直肠脱垂的手术选择

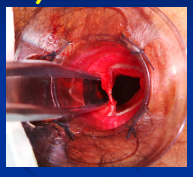
- 肛门环缩术：已成为历史
- 经腹直肠固定术：
- 肠切除直肠固定术
- 经腹直肠游离
- 经会阴手术：Altemeier
  Delorme
  经肛吻合器技术

## 经肛吻合器技术

- 经肛吻合器技术
  - *STARR*
  - *TSTSTARR+*
- 适应症：
  - *脱垂不超过5cm*

## 经肛门吻合器直肠切除术 (STARR)





## STARR治疗直肠脱垂

- 不足：
  - 相对较差的视野和受限的钉仓容积
  - 技术难度较高
  - 钉合线间存在黏膜唇边，增加出血风险
  - 两把吻合器，费用较高

## 直肠脱垂术式的新选择 —TSTSTARR+术

2012年，意大利Naldini教授，联合8家医疗中心开展TSTSTARR+术，治疗脱垂性痔病。

## 器　械

- 苏州天臣公司新近推出的6mm大容量、大口径吻合器。

## 资料与方法

- 病例入选标准：
  - 脱垂不超过5cm；
  - 年龄在18～65岁之间；
  - 肛门无明显畸形者；
  - 签署知情同意书。

## 资料与方法

- 手术禁忌症：
  - 合并前盆/中盆外脱垂；
  - 伴随肠道器质性疾病者：肠癌、炎症性肠病
  - 智力障碍或有精神病史者等。

## 资料与方法

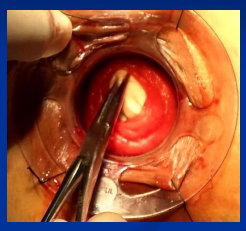
- **第一终点指标**
  - 成功率（或治愈率）
  - Wexner失禁评分
- **第二终点指标**
  - 操作时间
  - 术中出血量
  - 切除标本厚度

## 手术操作要点

- 术前晚常规机械灌肠
- 腰麻 截石位

## 手术操作要点

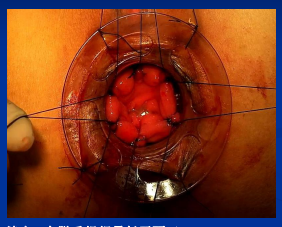
麻醉后脱垂情况



实验

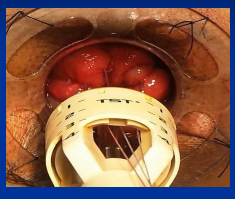
脱垂组织牵拉

## 手术操作要点



- 降落伞缝合：在脱垂组织最低平面（2、4、6、8、10、12点）作降落伞，并将12、12、2点，2、4点，4、6、8点，8、10点牵引线分别组合

## 手术操作要点

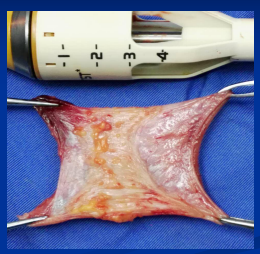


将缝线分别从四个视窗内牵出

预防副损伤，女性患者在激发紧吻合器前，一定配合阴道指检(或辅以阴道拉钩)，以免阴道后壁损伤而引发直肠阴道瘘

## 手术操作要点

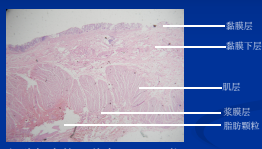
缝扎活动性出血点



切除标本

视频

## 切除标本




切除标本的HE染色 (10×10倍)

- 所有切除标本均见肠外脂肪颗粒.

## 结果

- 2014年2月至2015年08月，14例完成系统随访（男性8例，女性6例）。
- 平均年龄51.4(18～79)岁.
- 平均发病年龄22.7 (1～70 ) 年.
- 平均脱垂长度3.7(1.5～5)cm.
- 平均随访时间10.6 (2～20)月.

## 结果

- 术中平均出血量8.5 (3～15) ml.
- 平均手术时间28( 25～45) min.
- 平均住院时间8.0 天.
- 切除标本
  - 平均体积10.6(9.6～16.5) cm3
  - 平均宽度6.2 (4.5～7.2)cm.

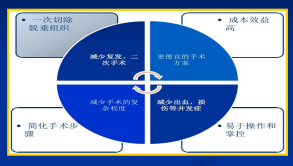
## 结果

- 随访期间无脱垂复发
- 所有患者术前均有不同程度的肛门失禁
  - 10 例患者术后失禁症状缓解
    Wexner失禁评分( 3.0 vs.14.1, P<0.01)
  - 4例患者失禁症状无明显改变

## 结果

| 并发症 | 例数 |
|---|---|
| 直肠周围脓肿 | 0 |
| 继发性出血（术后3-7d） | 0 |
| 直肠狭窄 | 0 |
| 肛门疼痛/坠胀 | 3 |
| 直肠阴道瘘 | 0 |
| 吻合口裂开 | 0 |

## 结　论




- **通过严格筛选病人，应用 TSTstarr+ 治疗轻度直肠脱垂是安全、简单、有效的。**

# 便秘的影像学诊断进展

杨光钊

## 背景

- 便秘是一种常见疾病，受多种因素影响，如膳食结构、精神、社会因素等。
- 女性远多于男性。
- 多为功能性排便障碍。
- 诊治需多学科共同合作完成；难治性便秘联合门诊（消化科，肛肠科，影像科，精神科，营养等）。

## 影像诊断

- 放射科能做什么？

  通过多种影像学检查，提供结肠传输、盆底排便障碍的客观依据。

- 结肠传输试验

  结肠传输时间的测量是评价结肠功能紊乱的基本及主要工具。可据标志物的分布及排出率，来判断是否存在结肠慢传输异常。

## 影像诊断

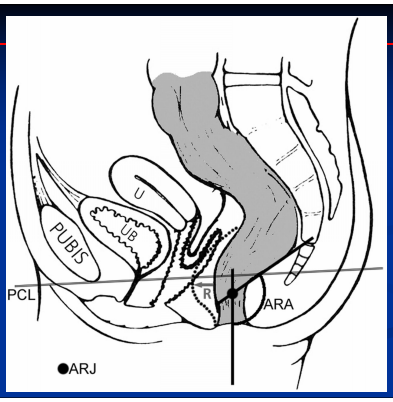
- X线排便造影
- 优点：自然排便体位；可动态观察
- 缺点：有辐射；盆底直肠周围软组织未能显示

## 影像诊断

- 动态磁共振排便造影
- 随着成像技术的发展，上世纪９０年代开始磁共振成像大幅增多，这种检查形式得到医生和患者接受。
- 具有极好的软组织对比和多平面成像功能 能提供充分的盆底功能和结构信息。
- 动态成像，无辐射。

## 检查方法

- 需要肠道准备，检查前2天流质饮食；
- 扫描范围覆盖整个盆腔；扫描包括常规横断位的T2WI、T1WI，矢状位以及冠状位T2WI脂肪抑制像；
- 肛门内注入含GDPA2m的玉米糊约300ml，患者仰卧位，使用快速扰相梯度回波序列（FSPGR)对患者静息、提肛、力排时的盆底结构进行矢状位成像。

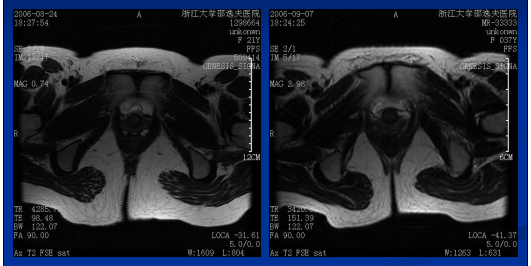



## 盆底解剖结构

- 正常盆底“悬挂结构”是由骨结构，肌肉，韧带相互作用形成。
- 盆底分为三腔室，对应于典型的临床症状或病理改变：前腔室（下尿路症状，膀胱脱垂，尿失禁）;中腔室（阴道穹窿或子宫脱垂）;后腔室（便秘，大便失禁，直肠脱垂）

盆底三腔室：
前腔室（阴道前壁、膀胱、尿道），中腔室（阴道顶部、子宫），后腔室（阴道后壁、直肠）

耻尾线（PCL）
从耻骨联合的最低点到末节尾骨关节的连线



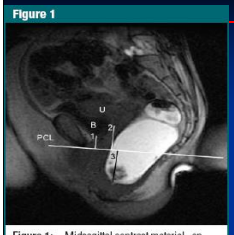




**Figure 1:** Midsagittal contrast material–enhanced T1-weighted spoiled gradient-recalled-echo MR image (22.4/10.6) in a 60-year-old woman with fecal incontinence, obtained at rest in the sitting position. The distance between the bladder *(B)* base (*1*, anterior pelvic compartment), vaginal vault (*2*, middle pelvic compartment), and anorectal junction (*3*, posterior pelvic compartment) was measured with regard to the PCL at a separate workstation. *U* = uterus.

*MR Defecography in Patients with Fecal Incontinence: Imaging Findings and Their Effect on Surgical Management*

*Radiology:* Volume 240:August 2006

*mashed potato starch*
*gadopentate dimeglumine*钆根维显溶液

## 盆底解剖结构

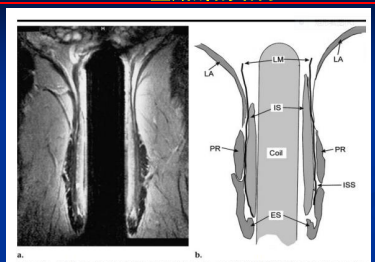
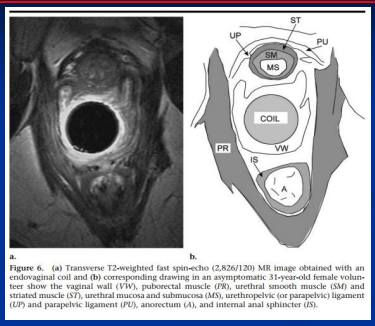



**Figure 5.** (**a**) Coronal midanal T2-weighted fast spin-echo (2,500/100) MR image obtained with an endoanal coil and (**b**) corresponding drawing in a 21-year-old asymptomatic male volunteer demonstrate the internal sphincter (*IS*), intersphincteric space (*ISS*), longitudinal muscle (*LM*), external sphincter (*ES*), puborectal muscle (*PR*), and levator ani muscle (*LA*).

*From: Jaap Stoker, MD, PhD.Pelvic Floor Imaging.Radiology 2001; 218:621–641*

## 盆底解剖结构




a. b.

**Figure 6.** **(a)** Transverse T2-weighted fast spin-echo (2,826/120) MR image obtained with an endovaginal coil and **(b)** corresponding drawing in an asymptomatic 31-year-old female volunteer show the vaginal wall (*VW*), puborectal muscle (*PR*), urethral smooth muscle (*SM*) and striated muscle (*ST*), urethral mucosa and submucosa (*MS*), urethropelvic (or parapelvic) ligament (*UP*) and parapelvic ligament (*PU*), anorectum (*A*), and internal anal sphincter (*IS*).

From: Jaap Stoker, MD, PhD.Pelvic Floor Imaging.Radiology 2001; 218:621-641

## 动态磁共振排便造影

- 正常影像表现

## 动态磁共振排便造影

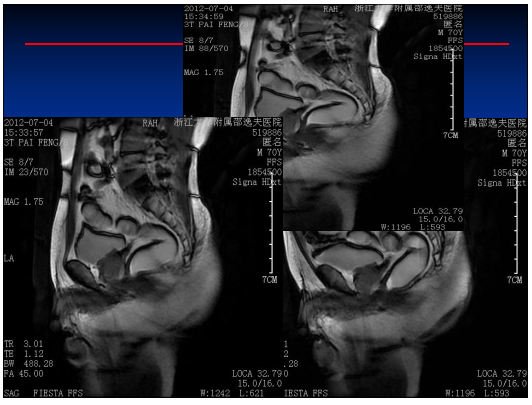
- 常见排便异常影像表现：
  - 盆底痉挛综合征
  - 耻骨直肠肌综合征
  - 直肠突出
  - 会阴下降
  - 直肠（粘膜）脱垂
  - 盆腔脏器脱垂（膀胱脱垂）

## 盆底痉挛综合征

- 用力排便时，盆底肌肉收缩而不松弛的功能性疾病。
- 男性及年轻便秘患者多见。
- 肛门直肠测压：常提示排便时肛门括约肌矛盾性收缩。

## 盆底痉挛综合征

- M/70；排便费力、不尽感5-6年，长期依赖药物排便。

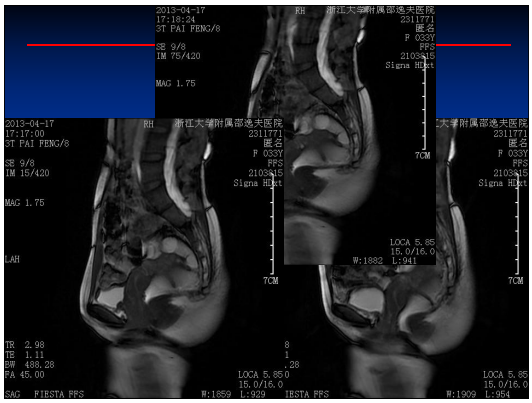


## 耻骨直肠肌综合征

- 耻骨直肠肌痉挛性肥大，提示出口梗阻。
- 肛门直肠测压：静息压及收缩压均增高，括约肌功能长度增加。
- 动态磁共振排便造影检查表现与盆底痉挛综合征类似，但可见到肥大的耻骨直肠肌。

## 耻骨直肠肌综合征

- F/33；排便费力伴左下腹胀7年余，便无干结。

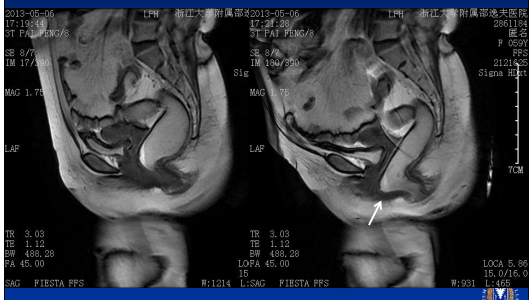


## 会阴下降、直肠突出

- 会阴下降、直肠突出多伴发，部分患者可出现直肠粘膜松弛或脱垂，盆腔脏器脱垂。
- 多见于女性患者，特别是生育后或老年患者。
- 肛门直肠测压：常表现直肠推进不足，肛门括约肌松弛，排便时肛门括约肌松弛不全。
- 直肠前突多见，后突少见。

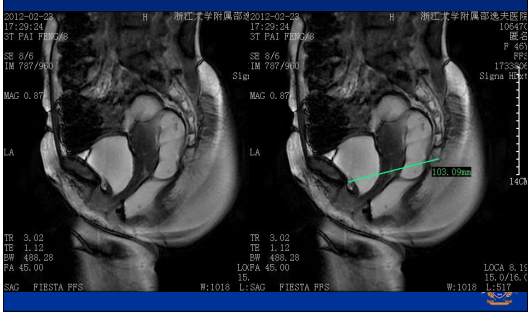
## 直肠前突

- F/59；大便干结、排便困难20余年。



## 会阴下降、直肠前突、膀胱脱垂

- F/46；排便费力10余年，无大便干结。

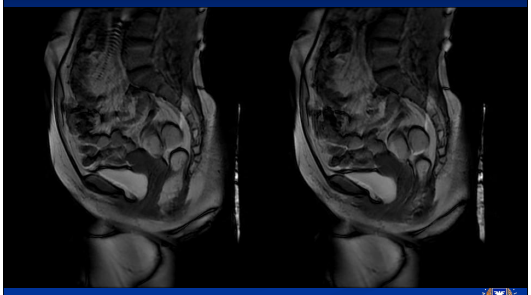


## 直肠（粘膜）脱垂

- 较少见，多伴发于会阴下降等，单发罕见。
- 肛门直肠测压：排便时肛门括约肌松弛不全，考虑与肛门粘膜脱垂有关。
- 肛门直肠指检可有阳性发现。

## 直肠粘膜脱垂、膀胱下垂

- F/47；大便干结、排便费力15余年。

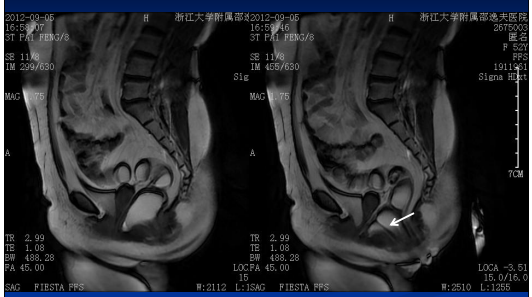


## 盆腔脏器脱垂

- F/52；大小便等用力后肛门外有物脱出30余年；大便次数较多，10余次每日，无便血；伴下腹部疼痛；需要用手回纳；用力后直肠全层脱出。
- 综合检查术前诊断：直肠脱垂。
- 行经肛直肠切除乙状结肠肛门吻合术（Altermeier术）。直肠脱垂手术后1个月复查，大便每日2次，便后肛门外无物脱出。

## 盆腔脏器脱垂

## 盆腔脏器脱垂



## 盆腔脏器脱垂

## 盆腔脏器脱垂

## 诊断价值

- 磁共振检查具有极好的软组织对比和多平面成像功能，通过动态磁共振排粪造影所显示的盆底结构、功能异常，对便秘的分型及程度提供客观依据，能用于指导相关科室进一步的治疗。
- 用于治疗后（包括手术治疗）复查，客观评价治疗效果。
- 可发现扫描范围内盆腔内其他组织、结构的异常或病变，观察其与便秘发生的相关性。

*Thank you!*

# 泻剂结肠的病理变化与研究进展

浙江省立同德医院
魏红权
2016年5月

- 概述
- 病因、发病机制
- 临床、病理表现
- 诊断难点
- 随访

【概况】

- 欧美多见，西方国家UC的发病率稳定在10/100000，CD的发病率呈上升趋势，目前为5—7/100000。我国少见，近年有发病有上升趋势
- 年轻人多见，发病年龄多在15—30岁。性别无差异
- 终生复发倾向
- 近年IBD的研究报告日渐增多，在病因与发病机制、诊断与治疗等方面均取得了一定进展

【定义】

炎症性肠病（Inflammatory Bowel Disease,IBD）

- 是一组病因不十分清楚的慢性非特异性肠道炎性疾病
- 包括溃疡性结肠炎（Ulcerative Colitis,UC）和克隆病（Crohn‘s Disease，CD）。二者在病因、发病机制及临床表现有许多相似之处。

【病因与发病机制】

- 一直是医学界的研究热点
- 迄今未完全明确，多认为是多因素相互作用所致，属肠道免疫炎症性疾病
- 发病机制假设：感染、饮食等因素作用于易感人群，使肠免疫反应过度亢进导致肠粘膜损伤

## 【病因与发病机制】

一直是医学界的研究热点，迄今未完全明确，多认为是多因素相互作用所致

- (一)、微生物因素
- (二)、环境和遗传因素
- (三)、 免疫因素
- (四)、其他因素

## ㈠感染因素 infectious factors

- 大肠杆菌
- 病毒可能性最大
- 难辨梭状芽孢杆菌毒素

## ㈡ 遗传因素 hereditary factors

- 种族差异
- 家族多发
- 单卵双胎发病一致性
- HLA-DR2：患者频率＞普通人
- HLA-B27基因

## ㈢免疫异常 immune disorders

依 据

- 伴肠外自体免疫性疾病表现
- 自身抗体、免疫复合物
- 淋巴细胞间接细胞毒作用
- 结肠病变中淋巴、浆、巨核和肥大细胞↑
- 肾上腺皮质激素治疗可缓解

## ㈣精神因素 psychogenic factors

属心身性疾病

1.依据：精神紧张、劳累可诱发
常有精神抑郁和焦虑表现

2.机制：大脑皮层功能障碍→植物神经

3.意义：本病的诱因或继发表现

## etiopathogenesis

- 发病机制：
  - 遗传易感性＋环境因素＋肠道菌群
  - ↓ 激活
  - 肠道免疫和非免疫系统
  - 免疫调节失衡 ↓ 抗原持续存在
  - 过度免疫反应，丧失自限性
  - ↓
  - 肠道炎症反应

## 【临床表现】

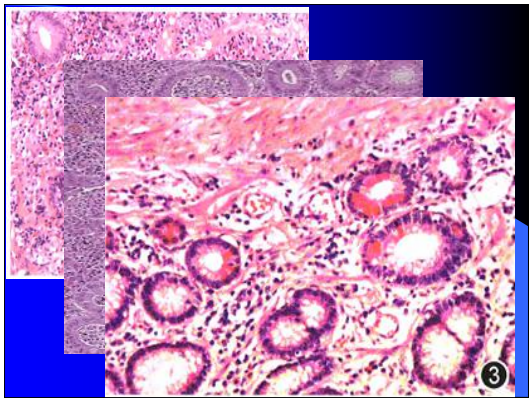
- 起病多缓慢。病程呈慢性经过，发作期与缓解期交替
- 可因饮食失调、劳累、精神刺激、感染等诱发发作或加重
- 临床表现与病变范围、病型及病期等有关
- 临床表现：（1）消化系统表现：主要包括腹痛、腹泻、脓血便、腹部包块、瘘管形成、肛周病变等；
  （2）多种肠外表现：可有关节、皮肤、眼、口及肝胆等肠外表现
  （3）全身表现发热及营养障碍等
- 体征：腹部压痛、包块、肛周病变、营养不良及并发症的体征
- 并发症：主要包括中毒性结肠扩张、肠穿孔、肠梗阻、急性大出血、瘘管形成及肛周病变及癌变

# 病 理

**pathology**

## 主要与溃疡性结肠炎有关的镜下改变

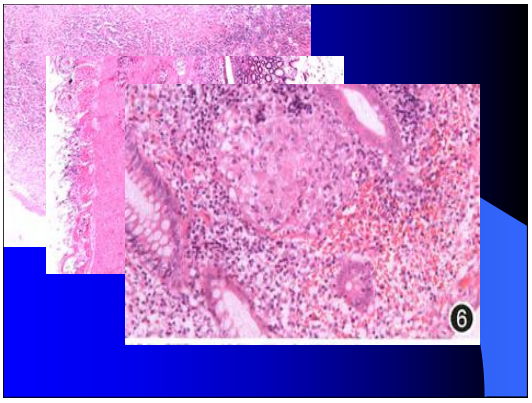
- 隐窝结构异常
  - 隐窝分支(crypt branching):
  - 隐窝扭曲(crypt distortion)
  - 隐窝萎缩(crypt atrophy)和隐窝密度减少(crypt density)
  - 绒毛状黏膜（surface irregularity)
- 上皮异常的形态改变
  - 潘氏细胞化生、
  - 黏液分泌减少
- 炎性浸润
  - 局灶性(focal)、
  - 片状(patchy)




- 隐窝结构异常、上皮异常和炎性浸润三部分。这些改变均不是特异性的也可以见于克罗恩病和其他结肠炎。

## 主要与克罗恩病有关的镜下改变

- 隐窝结构异常
- 溃疡和炎性浸润
- 上皮的异常
- 肠道神经系统的异常



## 【鉴别诊断】

需与IBD鉴别的疾病

| 感染性 | 非感染性 |
|---|---|
| **细菌性**:沙门氏菌，志贺氏菌，空肠弯曲菌，耶尔森氏菌，致病性大肠杆菌，抗菌药物相关性肠炎，结核，急性阑尾炎<br>**病毒**:单纯疱疹性直肠炎，巨细胞病毒感染<br>**原虫性**: 阿米巴病，血吸虫病 | **血管性**: 缺血性结肠炎，放射性直肠炎，血管畸形，痔疮<br>**特发性**: 白塞病，胶原性结肠炎<br>**药物性**: 非甾体类抗炎药<br>**肿瘤性**: 结肠癌，淋巴瘤，消化道类癌，白血病，结肠息肉病<br>**其他**: 憩室炎，嗜酸细胞性胃肠炎，自身免疫病，麦胶性肠病 |

## UC及CD临床及病理特点

| 项目 | UC | CD |
|---|---|---|
| 病变分布 | 结肠 | 消化道任何部位，回肠及近端结肠最多 |
| 临床特点 | | |
| 症状 | 脓血便多见 | 腹泻，脓血便少见 |
| 梗阻 | 少见 | 常见 |
| 瘘管形成 | 罕见 | 常见 |
| 肛周病变 | 不太多见 | 常见 |
| 内镜及放射检查 | | |
| 病变特点 | 病变连续 | 节段性 |
| 直肠受累 | 绝大多数受累 | 少见 |
| 末段回肠受累 | 少见 | 多见 |
| 溃疡 | 溃疡浅，溃疡间粘膜弥漫充血水肿、颗粒状，脆性增加 | 纵行或匍行溃疡，溃疡深，周围粘膜正常或鹅卵石样改变 |
| 假息肉 | 常见 | 不常见 |
| 肠腔狭窄 | 少见，中心性 | 多见，偏心性 |
| 病理改变 | 病变主要在粘膜层，有浅溃疡、隐窝脓肿、杯状细胞减少等 | 节段性全壁炎，有裂隙状溃疡、非干酪性肉芽肿等 |

## 肠结核和回结肠型克罗恩病的临床和病理鉴别诊断

| 项目 | 肠结核 | 回结肠型克罗恩病 |
|---|---|---|
| 胸片 | 阳性 | 阴性 |
| T-spot | 阳性 | 阴性 |
| 影像学检查 | 肠系膜淋巴结肿大伴有坏死 | 肠系膜淋巴结可肿大无坏死 |
| 内镜见回盲部病变 | 短 | 长 |
| 大便培养阳性率 | 30% | 阴性 |
| 溃疡肉眼观 | 呈椭圆形或者环形，与肠管的长轴垂直 | 呈线状，深在，纵行，与肠管的长轴平行 |
| 瘘管形成 | 一般无 | 多见 |
| 肠管狭窄段 | 小于3cm | 大于3cm |
| 肉芽肿 | 干酪样肉芽肿大、多、融合， | 黏膜内非干酪样肉芽肿小、少、分散 |
| 透壁性淋巴滤泡增生 | 无 | 常见 |
| 抗酸染色 | 阳性 | 阴性 |
| 结核杆菌DNA-PCR检测 | 阳性 | 阴性 |
| 肛管病变 | 少见 | 常见 |

## 【IBD的诊断】

IBD无特异性诊断指标，目前尚无理想的实验指标能替代临床常用的综合因素评估方法需排除各种可引起类似肠道炎症的病因后才能做出诊断

- 完整的诊断应包括临床类型、严重程度、病变范围、病情分期及并发症

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- 可靠的诊断应建立在**结合病史,临床评估,实验室检查**,以及**典型的内镜、组织学和影像学发现**的基础上,需要临床胃肠病学家、影像学家、病理学家等的团队合作

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1. 血液：贫血、WBC↑、ES
   C反应性蛋白↑
2. 粪便：粘液脓血，镜检红、
   病原体全阴性（排除感染性结炎）。

Table 2. Diagnostic Accuracy of Serologic Markers of Ulcerative Colitis (pANCA) and Crohn's Disease (ASCA

| Study | Study population (n) | Antibody marker | Diagnosis (UC or CD) | Sensitivity (%) | Specificity ( |
|---|---|---|---|---|---|
| 17 | Adult CD (100), UC (101), non-IBD (27), control (163) | ANCA<br>ASCA | UC<br>CD | 65<br>61 | 85<br>88 |
| 18[a] | Pediatric CD (130), UC (35), non-IBD (78) | ANCA<br>ASCA | UC<br>CD | 57<br>55 | 92<br>95 |
| 19[a] | Pediatric CD (20), UC (25), non-IBD (74) | ANCA<br>ASCA | UC<br>CD | 60<br>60 | 65<br>88 |

Shanahan F. Gastroenterology 2001;120:622-

3. 自身抗体检测

| | 特异性抗体 | 特异性 |
|---|---|---|
| UD | p－ANCA<br>（抗中性粒细胞胞浆抗体） | 14%～98% |
| CD | ASCA<br>（抗酿酒酵母抗体） | 56%～92% |

4、结肠镜检查
5. 钡灌肠：
   急性期（早期）—皱襞粗大紊乱
   活动期（溃疡）—锯齿状边缘
   缓解期（后期）—结肠袋消失、肠壁僵硬假息肉至圆形充盈缺损。

- **到目前为止**,尚**未有**用于**内镜活检标本**的鉴别克罗恩病和溃疡性结肠炎的组织学特点的**金标准**。
- **胃肠**病理学家对于二者的区别尚未达到高度的一致**国外专业胃肠**病理学家对于初次诊断克罗恩病的一致性为**64%**,而溃疡性结肠炎为**74%**。

- **多部位黏膜活检**取材十分重要。推荐做至少**5**个部位(包括直肠和末段回肠在内),每个部位取不少于**2**个活检。内镜下**未见异常**的黏膜也应取活检。

- 样本的**定向使用滤纸**效果较好,即黏膜断面的一侧在固定前黏在滤纸上。**不同部位**的活检组织应当用不同的容器并且注明**患者的信息和取材部位**以避免混淆。

- 与活检样本一起送病理科的病理申请单一定要有患者的临床信息,包括患者的**年龄、性别、患病程期、内镜发现、治疗的种类和程期、并发症、旅行史和临床诊断**等。

- 由于炎症性肠病的病变可能为局灶性在组织包埋时,建议每个蜡块最多包埋**2**块组织。推荐对每个蜡块均做标本**最大面**的多个**连续切片**(6~10片)并且采取措施确保切片方向**垂直**于黏膜。

## 癌变的监测

- **UC：病程8-10年以**
  **程30-40年以上的左**
  **肠镜监测，至少2年**
  **者，更应密切随访**
  **治疗**
- **CD：与溃疡性结肠炎患者相似，最重要的危险因素为发病年龄轻、病程长和累及范围广(全结肠炎),需长期随访。**

(二) 结肠癌变 carcinogenesis

·综述·

溃疡性结肠炎相关性结直肠癌的研究进展

张春 朱思伟

溃疡性结肠炎相关性结直肠癌的危险因素及癌变机制

Risk factors and mechanisms of carcinogenesis of ulcerative colitis – associated colorectal cancer

CD患者发生小肠腺癌的风险是非CD患者的**20-30**倍。
小肠腺癌典型地出现在CD诊断**8**年后患者的回肠病变中，
常与之前或者同时期的回肠**全典型**CD相关

感谢您的聆听

# 慢传输型便秘的中西医结合治疗进展

浙江省立同德医院
结直肠肛门疾病诊治中心

陈诚豪



## 便秘的流行病学资料

- 我国成人慢性便秘患病率为4%～6%
- **随年龄增长而升高**，
- 60岁以上人群慢性便秘患病率可高达22%。
- **女性患病率高于男性**，
- 男女患病率之比为1: 1.22 ～ 1:4. 56。

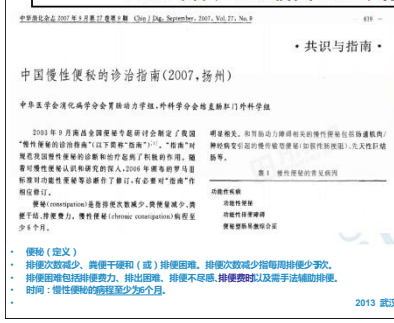


## 便秘de危害：马季、胡耀邦等名人为例

- **引起危及生命的疾病发作**
  - 诱发高血压、冠心病。
  - 诱发**脑出血**、心肌梗死。
  - 引起**猝死**。
  - 长期便秘可导致**结肠癌**、直肠癌、乳腺癌等。
- **引发慢性疾病**
  - 肛裂、肛瘘。
  - 痔疮、脱肛、肠梗阻
  - 子宫脱垂、盆腔脏器炎症。
- **导致生活质置下降，便秘可通过许多继发病影响病人生活质量**
  - 全身皮肤：痤疮、粉刺、皮肤瘙痒。
  - 面部：色素沉着、皮疹
  - 饮食无味、口臭、体臭
  - 腹胀、梨形身材、胖肚子。
  - 神经衰弱、失眠、烦躁易怒等精神症状。
  - 性欲下降、性生活障碍



## 中国慢性便秘的诊治指南
**2003 南昌-2007扬州-2013武汉**


中华消化杂志 2007 年 9 月第 27 卷第 9 期 Chin J Dig, September, 2007, Vol.27, No.9 639

·共识与指南·

中国慢性便秘的诊治指南(2007,扬州)

中华医学会消化病学分会胃肠动力学组,外科学分会结直肠肛门外科学组

2003 年 9 月南昌全国便秘专题研讨会制定了我国"慢性便秘的诊治指南"(以下简称"指南")[1],"指南"对规范我国慢性便秘的诊断和治疗起到了积极的作用。随着对慢性便秘认识和研究的深入,2006 年德和世罗马Ⅲ标准对功能性便秘等诊断作了修订,有必要对"指南"作相应修订。

便秘(constipation)是指排便次数减少,粪便量减少,粪便干结,排便费力,慢性便秘(chronic constipation)病程至少 6 个月。

明显相关。和胃肠动力障碍相关的慢性便秘包括肠道肌肉/神经病变引起的慢性输送便秘(如假性肠梗阻)、先天性巨结肠等。

表 1 慢性便秘的常见病因

功能性疾病
功能性便秘
功能性排便障碍
便秘型肠易激综合征

- 便秘（定义）
- 排便次数减少、粪便干硬和（或）排便困难。排便次数减少指每周排便少于3次。
- 排便困难包括排便费力、排出困难、排便不尽感、排便费时以及需手法辅助排便。
- 时间：慢性便秘的病程至少为6个月。

2013 武汉

---中华医学会



中国便秘指南

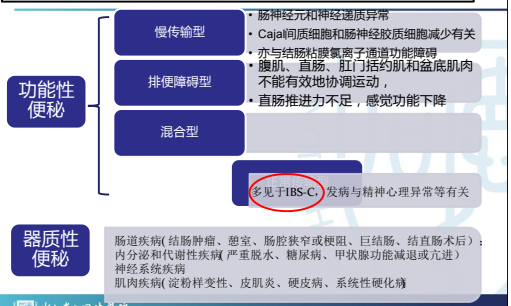
## 功能性便秘分型变化

| 2007 | 2013 |
|---|---|
| • 慢传输型便秘 | • 慢传输型便秘 |
| • 出口梗阻型便秘 | • 排便障碍型便秘： |
| • 混合型便秘 | 1.不协调性排便 |
| | 2.直肠推进力不足 |
| | • 混合型 |
| | • 正常传输型便秘 |

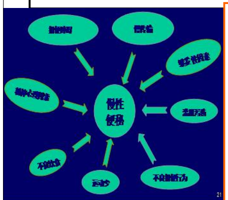
GASTROENTEROLOGY 2013;144:211–217



## 发病机制



# 便秘病因



| | |
|---|---|
| **Simple constipation** | |
| Dietary: | Inadequate fibre |
| Lifestyle: | Repressed defecatory urge |
| **Secondary constipation** | |
| Congenital: | Hirschsprung's disease, idiopathic megarectum/megacolon |
| Mechanical: | Carcinoma |
| Drugs: | E.g., analgesics, antidepressants |
| Metabolic: | E.g., diabetic neuropathy, chronic renal failure |
| Endocrine: | E.g., hypothyroidism, hypercalcaemia |
| Neurological: | Multiple sclerosis, spinal trauma, autonomic neuropathy, |
| **Parkinson's disease** | |
| Psychological: | E.g., depression, anorexia |
| **Idiopathic slow transit constipation** | |
| **Evacuation disorder** | |
| Functional: | Anismus, ineffective straining, solitary rectal ulcer syndrome |
| Structural: | Rectocele, descending perineum |
| **Constipation predominant irritable bowel syndrome** | |

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# 便秘应该尽早正确治疗！

- 长期便秘患者容易产生情感心理障碍，进一步加重患者的便秘症状，形成“情感障碍–便秘–情感障碍”的恶性循环。
- 功能性便秘病程≤1年，焦虑症状的发生率为29%；病程＞1年，发生率为44.7%
- 而且随着就医保守治疗的时间越来越严重。发展成顽固性便秘：**便秘应该尽早正确治疗！**

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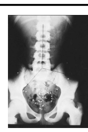
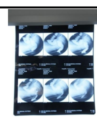
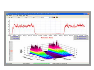
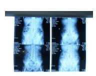
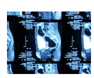
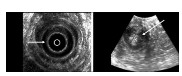
# 便秘的辅助检查项目

- 结肠传输试验
- X线排粪造影
- 钡灌肠
- 肛管直肠动力检测
- 球囊逼出试验
- 盆底肌电图
- 肛管腔内超声
- 电子肠镜
- 盆底四重造影
- MRI排粪造影



# 手术治疗

- 真正需要外科手术治疗的慢性便秘患者尚属少数
- 症状严重影响工作和生活，且经过一段时间正规的非手术治疗无效时，可考虑手术治疗，一定要掌握好手术适应证

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| 手术名称 | 疗效 | 特点 | 备注 |
|---|---|---|---|
| **全结肠切除+回肠直肠吻合术** | 63-100% | 手术切除范围较大，手术治疗后的远期疗效不理想，而且存在较多的术后并发症，常见的并发症有顽固性腹泻和肠梗阻。 | 术前应进行上消化道生理功能测试，如果上消化道发现异常，在接受该手术前，应该告知患者长期疗效不确定。 |
| **次全切除+回肠乙状结肠吻合** | 50%的复发率 | 术后的临床效果和生活质量改善情况并不乐观 | 临床使用较少 |
| **次全切除+盲肠直肠吻合** | 有效率68.8-98% | 保留回盲瓣和盲肠部分，不但能够通过控制食糜进入结肠的速度而控制新粪便的形成，而且能够维持水分和维生素的正常吸收功能，降低了腹泻的发生率。 | 对于年纪较轻的患者，小肠传输功能未减慢，可以考虑 |
| **腹腔镜结肠切除术** | 术后3个月症状改善率74%以上，术后12个月80%以上 | 创伤小、术后恢复速度快和患者住院时间短，更容易被患者接受，长期治疗效果还有待于进一步观察。 | 主要技术难题是肝曲和脾曲的游离，便秘患者往往结肠冗长扭曲和脾曲位置抬高，增加了腹腔镜手术的难度。 |
| **结直肠全切除后行回肠储袋肛管吻合** | 二次手术率高达10% | 切除范围大、创伤大、手术操作复杂，而且有文献报道患者在手术后可能会出现排尿障碍、储袋炎症和吻合口漏等并发症。 | 其临床应用受到较大限制 |
| **回肠远段环形贮袋** | 有效率88.9% | 李岗报道术后排便控制能力满意，无顽固性腹泻、吻合口漏、肠梗阻等并发症 | 临床资料较少 |

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| 手术名称 | 疗效 | 特点 | 备注 |
|---|---|---|---|
| 结肠部分切除术 | 国外报道有效率68，国内报道有效率33%-46% | 创伤小、恢复快、远期腹泻发生率低的，但因为难以判断功能异常肠段，术后便秘复发率高 | 关键并非技术本身．而在于术前能否对引起便秘的异常肠段位置做出准确判断。把结肠传输试验的末次拍片延后至7 d以上以及连续2次结肠传输试验，均体现了医生对术前精准判断病变肠段部位的重视程度。 |
| 结肠旷置手术 | 93.94% | 操作简单、对患者伤较小（因此患者术后恢复速度较快）、术后并发症低，旷置的结肠为盲袢，导致腹痛等临床表现，增加了闭合回路带来的不可控制的风险，大大降低了患者术后生活质量 | 适用于年老体弱、不能耐受大手术者。 |
| 回肠造口手术 | | 功能毁损大、患者术后生活质量差，难以被患者接受，仅在其他手术出现吻合口漏等并发症，或效果不佳、证实有全小肠传输迟缓时采用。 | 应用于老年体弱的便秘者时，能够明显提高患者的生活质量。可以作为结肠切除术前的一种预先测试，如果患者有高的回肠造口输出量或者经常伴随便秘的疼痛和腹胀不能解决，那么结肠切除术不被推荐。 |
| 回肠或阑尾造口顺行灌洗术 | 61% | 在儿童被成功的应用，但在成人的成功率普遍较低。 | 对于那些结肠运动功能丧失并且需要机械灌洗排便的患者，进行顺行结肠灌洗术是有用的 |

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## 腹腔镜手术与开腹手术治疗慢传输型便秘临床效果的 Meta 分析

郭震　陈辉　刘韦成　钱群

［摘要］ 目的　系统评价腹腔镜手术以及开腹手术治疗慢传输型便秘的临床效果。方法　全面检索 PubMed、cochrane library、EMBASE database、OVID LWW database、ACP Journal Club、康健临床决策循证数据库( Foreign Evidence-Based Medicine，FEBM )、中国医学文献数据库( CBM )、万方数据库、维普数据库以及中国知网数据库。检索时限均为建库至 2012 年 7 月。收集腹腔镜手术与开腹手术治疗慢传输型便秘的比较研究的英文文献以及中文文献，通过至少两名研究者的独立筛选获得最终的纳入研究文献，利用 RevMan5. 1 软件对两种方法的治疗效果进行 Meta 分析。结果　最终纳入 8 篇，其中 5 篇随机对照研究，2 篇回顾性研究，1 篇临床对照研究。与开腹手术相比，腹腔镜手术术后粘连性肠梗阻发生率( RR = 0. 20，95% CI：0. 06 ~ 0. 67，$P$ = 0. 009 )以及术后切口并发症发生率( RR = 0. 21，95% CI：0. 07 ~ 0. 63，$P$ = 0. 005 )降低，术中出血量( WMD = －95. 96，95% CI：－134. 02 ~ －57. 90，$P$ < 0. 00001 )减少，住院时间( d )( WMD = －4. 02，95% CI：－6. 33 ~ －1. 72，$P$ = 0. 0006 )以及术后肠道功能恢复时间( d )( WMD = －1. 19，95% CI：－2. 09 ~ 0. 29，$P$ = 0. 010 )缩短。但手术时间( WMD = 24. 42，95% CI：3. 21 ~ －45. 63，$P$ = 0. 02 )增加。两种方法的术后进食流质时间以及排便次数的差异无统计学意义。结论　腹腔镜手术治疗慢传输型便秘能够达到开腹手术的安全性和疗效，同时能够显著降低开腹手术的手术并发症。

［关键词］ 慢传输型便秘；　腹腔镜手术；　开腹手术；　系统评价；　Meta 分析

## 单孔腹腔镜回肠直肠吻合术：

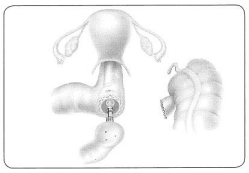

FIGURE 2. The terminal ileum was transected by a stapler after laparoscopic mobilization of the ileocecal portion and ileoproctostomy was performed using a circular stapler inserted transanally after extracorporeal placement of an anvil on the stump of the ileum.

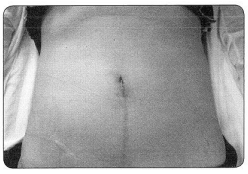

FIGURE 3. The single surgical wound placed longitudinally across the umbilicus.



## 回肠远段环形贮袋的临床应用

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【摘　要】 目的　总结回肠远段环形贮袋的临床应用经验。方法　回顾性分析 9 例慢传输型便秘、7 例家族性腺瘤性息肉病和 3 例溃疡性结肠炎手术治疗的临床资料。19 例患者均行全结肠切除、回肠远段环形贮袋—直肠吻合术。观察术后疗效及并发症发生情况。结果　19 例均手术成功，术后肛门排气时间平均 3. 5 d，3 ~ 6 d 排便。术后随访 6 个月 ~ 2 年，无顽固性腹泻，吻合口漏，肠梗阻等并发症，疗效满意。结论　全结肠切除、回肠远段环形贮袋—直肠吻合术是治疗慢传输型便秘，家族性腺瘤性息肉病和溃疡性结肠炎的有效措施，术后排便控制能力满意，是一种较为理想的术式。

## 全结肠旷置加回直逆蠕动侧侧吻合术治疗高龄慢传输型便秘

丁召　陈钰　江从庆　吴云华　郑科炎　秦前波　钱群

- 丁召等对13例高龄结肠慢传输型便秘患者行全结肠旷置加回直逆蠕动侧侧吻合术，发现术后6个月Wexner便秘评分显著降低，胃肠道生活质量指数显著提高，术后12个月患者每日排便3-4次，无便秘复发或腹泻。



## 回肠或阑尾造口顺行灌洗术

- Emilie Duchalais等评价了经皮内镜下盲肠穿孔(PEC)插管行顺行结肠灌肠(ACE)治疗重度便秘1年后的疗效，因为慢性疼痛拔除插管的有5例（26%），有1例患者因为不相关原因死亡，有61%的患者一直使用ACE，14%的患者暂停使用泻药和逆行灌肠，便秘和生活评分改善的有15例，中位KESS评分从PEC前的25改善为1年后的17，中位GIQL评分从69提高到95。



## 药物

- 泻剂
- 促动力药：普芦卡必利
- 促分泌药：包括鲁比前列酮、利那洛肽
- 灌肠药和栓剂
- 益生菌



| | 治疗便秘常用的药物 | 证据等级和推荐水平 |
|---|---|---|
| 容积性泻剂 | 欧车前 | II级，B级 |
| | 聚卡波非钙 | III级，C级 |
| | 麦麸 | III级，C级 |
| | 甲基纤维素 | III级，C级 |
| 渗透性泻剂 | 聚乙二醇 | I级，A级 |
| | 乳果糖 | II级，B级 |
| 软化剂 | 磺基丁二酸钠二辛酯 | III级，C级 |
| 刺激性泻剂 | 比沙可啶/匹可硫酸钠 | II级，B级* |
| | 番泻叶 | III级，C级 |
| 其他 | 普芦卡必利 | I级，A级* |
| | 鲁比前列酮 | I级，A级* |
| | [illegible] | II级，B级* |

World Gastroenterology Organisation. 2010.13

## 西药最新药物

| 名称 | 特定患者 | 作用机制 | 推荐剂量 | 常见副反应 |
|---|---|---|---|---|
| 普鲁卡必利 | 女性便秘患者 | 5-HT4受体激动剂，只针对结肠，对胃排空和小肠传输无任何影响 | 2mg，qd | 治疗初期出现头疼、腹痛、腹泻、恶心等不适. |
| 利那洛肽 | 成人慢性特发性便秘和便秘型肠易激综合症(IBS-C) | 鸟苷酸环化酶C(GC—C)激动剂 | 145ug | 腹泻 |
| 鲁比前列酮 | 成人慢性非癌症疼痛的阿片类药物导致的便秘。 | 激活2型氯离子通道(CIC-2)，增加肠液的分泌和肠道的运动，从而增加排便。 | 24ug，bid | 恶心，腹泻 |
| 爱维莫潘 | 术后肠梗阻患者 | 选择性的阿片受体抑制剂 | 术前1粒,此后1#bid，持续7天，总用药不超过15次。 | 低血钙、贫血和胃肠道症状 |

- **鲁比前列酮**

选择性活化肠道上皮细胞顶膜的2型氯离子通道（CIC-2），促进肠上皮细胞氯离子分泌而提高肠液分泌并增强肠道活动性

不改变血浆中钠和钾的浓度

- **普鲁卡比利**

是一种高选择性的5-HT4受体激动剂，使结肠传输时间缩短、 排便频率增加、 直肠对扩张和电刺激的敏感性增加

**利那洛肽（Linaclotide）**

由14个氨基酸组成的多肽

为肠上皮细胞表面的鸟苷酸环化酶C受体激动剂，促进氯化物的分泌

目前已被美国食品与药物管理局（FDA）批准用于治疗成人慢性特发性便秘和便秘型IBS

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## 结论：

- **便秘不再是过去的便少、便干、便难的单纯概念**，单纯的只要对症治疗的便秘。需要个体化的、内外科联合的治疗。
- **痔疮也不是以前想象的单纯的只是分析治疗痔疮。痔与便秘伴发常见，互为因果，需要同等对待、一起治疗。**
- **详细了解病史、全面系统检查、及科学而实用的诊断分型是制定有效方案提高疗效不可缺少的三大步骤。**
- **精神因素是诊治便秘不可忽视的重要环节。**
- **“外科便秘”需要及时手术治疗，但是需要在正确诊断、分型，并且主刀临床外科经验丰富、病人意愿强烈积极配合的基础上。**
- **非常赞同成肛杨向东教授团队的便秘分度分期论治。**
- **对于非外科手术需要的便秘，中医治疗应该是一个较好的选择。**
- **除了手术和药物，生物反馈治疗在便秘治疗中具有重要作用。**
- **盆底外科、多学科协作是今后闸明出口梗阻型便秘、明显提高疗效的方向。**

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# 出口梗阻型便秘诊断新进展

浙江省立同德医院结直肠肛门疾病诊治中心

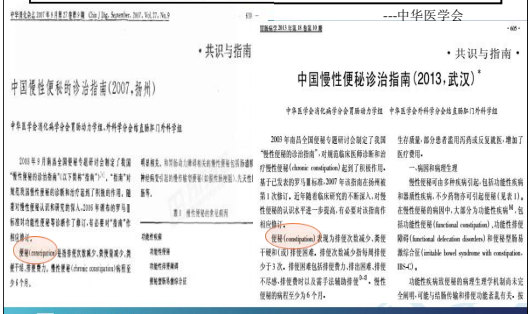
蔡 珂

2016.05.杭州



## 中国慢性便秘的诊治指南

---中华医学会



·共识与指南·

中国慢性便秘的诊治指南(2007,扬州)

·共识与指南·

中国慢性便秘诊治指南(2013,武汉)*



中国便秘指南

## 功能性便秘分型变化

| 2007 | 2013 |
|---|---|
| • 慢传输型便秘 | • 慢传输型便秘 |
| • 出口梗阻型便秘 | • 排便障碍型便秘： |
| • 混合型便秘 | 1.不协调性排便 |
| | 2.直肠推进力不足 |
| | • 混合型 |
| | • 正常传输型便秘 |

CLIN GASTROENTEROLOGY 2013;144:211-217



## 功能性便秘的诊断

① 排除器质性疾病和药物因素导致的便秘
② 符合罗马III标准中功能性便秘的诊断标准
③ IBS-C 亦属于功能性疾病引起的便秘，其诊断需符合IBS 的诊断标准和分型标准。

罗马Ⅲ标准中功能性便秘的诊断标准

| 疾病名称 | 诊断标准 |
|---|---|
| 功能性便秘 | 1. 必须包括下列 2 项或 2 项以上：①至少 25% 的排便感到费力；②至少 25% 的粪便为干球需或硬需；③至少 25% 的排便有不尽感；④至少 25% 的排便有肛门直肠梗阻感和(或)堵塞感；⑤至少 25% 的排便需手法辅助(如用手指协助排便、盆底支持)；⑥每周排便少于 3 次 |
| | 2. 不用泻药时很少出现稀便 |
| | 3. 不符合 IBS 的诊断标准 |

* 诊断前症状出现至少 6 个月，且近 3 个月症状符合以上诊断标准

| 疾病名称 | 诊断标准 |
|---|---|
| 功能性排便障碍 | 1. 必须符合功能性便秘的诊断标准 |
| | 2. 在反复尝试排便过程中，至少包括以下 3 项中的 2 项：①球囊逼出试验或影像学检查证实排出功能减弱；②压力测定、影像学或肌电图检查证实盆底肌肉(如肛门括约肌或耻骨直肠肌)不协调收缩或括约肌基础静息压松弛率 <20%；③压力测定或影像学检查证实排便时直肠推进力不足 |

* 诊断前症状出现至少 6 个月，且近 3 个月符合以上诊断标准

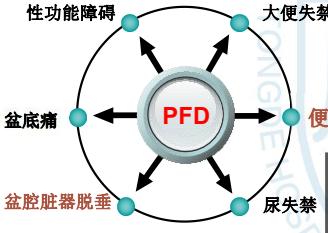
·共识与指南·

中国慢性便秘诊治指南(2013,武汉)*



## 盆底功能障碍

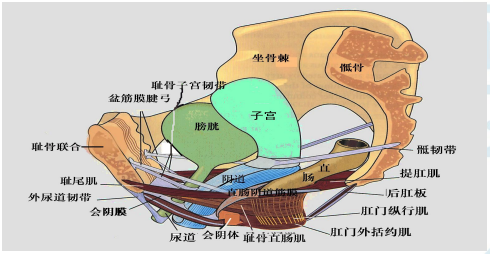
Pelvic Floor Dysfunction




外伤
手术后
神经系统疾病

# 盆底解剖结构

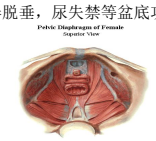
盆底肌肉 筋膜 韧带及其神经构成了复杂的盆底支持系统其相互作用和支持，承托并保持子宫，膀胱和直肠的正常生理位置。

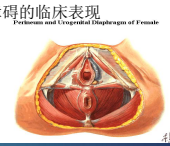





# 盆底肌肉的功能意义

- 由深层肌和浅层肌构成的整体盆底肌
- 耻骨阴道肌有协助缩小阴道作用，耻骨直肠肌是最强大部分，阴道侧切时受损大
- 盆底肌是一个整体发挥作用，功能正常时，盆底器官保持在肛板肌肉上，能抵抗腹压
- 当结构损伤或减弱，收缩及紧张度不足以抵抗腹压增加而导致盆腔脏器脱垂，尿失禁等盆底功能障碍的临床表现



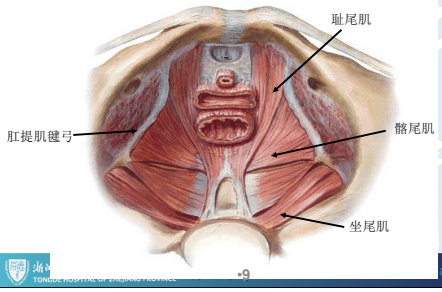






Pelvic Diaphragm of Female

Pelvic Diaphragm of Female

Superior View





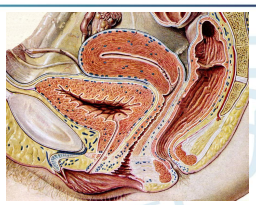

# 盆底支持组织生理功能

- 维持盆腔器官正常的解剖位置
- 参与尿控
- 参与便控
- 维持阴道紧缩度



# 盆底功能障碍

- **肌肉**
- **神经**
- 骨骼
- 血管
- 韧带



**盆底是个整体，任何部分出现异常均会产生症状和疾病。**



# 盆腔脏器脱垂发病机制

| | 组织器官 | 支持结构 |
|---|---|---|
| 前盆腔 | 膀胱、尿道、阴道前壁 | 尿道外韧带、尿道下阴道（吊床）、耻骨尿道韧带 |
| 中盆腔 | 阴道顶部、子宫 | 盆筋弓筋膜、耻骨宫颈筋膜、宫颈环与耻骨宫颈筋膜的附着 |
| 后盆腔 | 阴道后壁、直肠 | 宫骶韧带、直肠阴道筋膜、会阴体 |

阴道前壁膨出：产伤、产褥期过早体力劳动等 → 压力性尿失禁、尿潴留、尿路感染
阴道后壁膨出：第二产程延长、便秘等 ⟷ 便秘、腰酸、下坠
阴道穹窿膨出：子宫切除术后因年龄、绝经和损伤等因素导致的盆底筋膜结构支持减弱 → 排尿困难
子宫脱垂：分娩损伤、长期加腹压、盆底组织发育不良或退行性变等 → SUI、宫颈溃疡等

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*Research Article*

**Clinical Outcomes and Urodynamic Effects of Tailored Transvaginal Mesh Surgery for Pelvic Organ Prolapse**

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[2]*Department of Obstetrics and Gynecology, Far Eastern Memorial Hospital, 21 Section 2, Nanya South Road, Banqiao District, New Taipei 20060, Taiwan*

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*Objective*. To evaluate the clinical outcomes and urodynamic effects of tailored anterior transvaginal mesh surgery (ATVM) and tailored posterior transvaginal mesh surgery (PTVM). *Methods*. We developed ATVM for the simultaneous correction of cystocele and stress urinary incontinence and PTVM for the simultaneous correction of enterocoele, uterine prolapse, vaginal stump prolapse, and rectocele. *Results*. A total of 104 women enrolled. The median postsurgical follow-up was 25.5 months. The anatomic cure rate was 98.1% (102/104). Fifty-eight patients underwent urodynamic studies before and after surgeries. The pad weight decreased from 29.3 ± 43.1 to 6.4 ± 20.9 g at 3 months. Among the 20 patients with ATVM, 13 patients had objective stress urinary incontinence (SUI) at baseline while 8 patients came to have no demonstrated SUI (NDSUI), and 2 improved after surgery. Among the 38 patients who underwent ATVM and PTVM, 24 had objective SUI at baseline while 18 came to have NDSUI, and 2 improved after surgery. Mesh extrusion ($n = 4$), vaginal hematoma ($n = 3$), and voiding difficulty ($n = 2$) were noted postoperatively. Quality of life was substantially improved. *Conclusions*. Our findings document the advantages of these two novel pelvic reconstructive surgeries for pelvic organ prolapse, which had a positive impact on quality of life. ATVM surgery additionally provided an anti-incontinence effect. This clinical trial is registered at ClinicalTrials.gov (NCT02178735).

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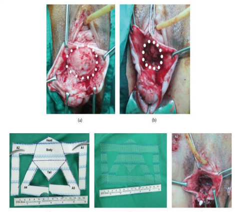

FIGURE 1: Components of the anterior transvaginal tailored mesh surgical procedure. (a) Separation of the bladder from the anterior vagina. White dotted circles indicate the area of the bladder base. (b) Use of the purse-string suture technique to reduce the cystocele size. The white dotted circles indicate the area of the reduced bladder base. (c) A drawing of the diamond body with its four arms and the polypropylene mesh (Gynemesh, 15 × 10 cm), which was trimmed according to the required shape. (d) Custom-tailored mesh with central diamond body and four arms. (e) Complete positioning of the body and arms of the mesh beneath the bladder, with the head of the diamond body underneath the bladder neck and proximal urethra without tension.

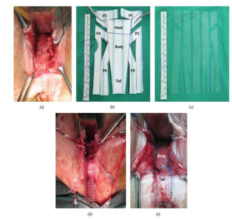

FIGURE 2: Components of the posterior transvaginal tailored mesh surgical procedure. (a) Separation of the rectum until the posterior fornix of the cervix is separated from the posterior vagina. (b) Drawing of the grasshopper body with its six arms and the polypropylene mesh (Gynemesh, 15 × 10 cm). (c) Custom-tailored mesh with the central grasshopper body and six arms. (d) Fixation of the head of the grasshopper-shaped portion to the posterior upper cervix and the insertion of the P1 and P2 arms into the bilateral uterosacral space without fixation. The P3 and P4 arms have already been inserted through the buttocks. (e) Complete positioning of the body and arms of the mesh covering the entire upper surface of the rectum without tension, with the exception of the P1 and P2 arms, which are to be inserted into the bilateral uterosacral spaces without fixation. The redundant tail part of the mesh will be trimmed to an appropriate length.

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*Clinical Study*

**A Novel Operative Procedure for Pelvic Organ Prolapse Utilizing a MRI-Visible Mesh Implant: Safety and Outcome of Modified Laparoscopic Bilateral Sacropexy**

**Ralf Joukhadar,[1] Gabriele Meyberg-Solomayer,[1] Amr Hamza,[1] Julia Radosa,[1] Werner Bader,[2] Dimitri Barski,[3] Fakher Ismaeel,[4] Guenther Schneider,[5] Erich Solomayer,[1] and Sascha Baum[1]**

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*Introduction*. Sacropexy is a generally applied treatment of prolapse, yet there are known possible complications of it. An essential need exists for better alloplastic materials. *Methods*. Between April 2013 and June 2014, we performed a modified laparoscopic bilateral sacropexy (MLBS) in 10 patients using a MRI-visible PVDF mesh implant. Selected patients had prolapse POP-Q stages II-III and concomitant OAB. We studied surgery-related morbidity, anatomical and functional outcome, and mesh-visibility in MRI. Mean follow-up was 7.4 months. *Results*. Concomitant colporrhaphy was conducted in 1/10 patients. Anatomical success was defined as POP-Q stage 0-I. Apical success rate was 100% and remained stable. A recurrent cystocele was seen in 1/10 patients during follow-up without need for intervention. Out of 6 (6/10) patients with preoperative SUI, 5/6 were healed and 1/6 persisted. De-novo SUI was seen in 1/10 patients. Complications requiring a relaparoscopy were seen in 2/10 patients. 8/10 patients with OAB were relieved postoperatively. The first in-human magnetic resonance visualization of a prolapse mesh implant was performed and showed good quality of visualization. *Conclusion*. MLBS is a feasible and safe procedure with favorable anatomical and functional outcome and good concomitant healing rates of SUI and OAB. Prospective data and larger samples are required.

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## 受损韧带的诊断依据

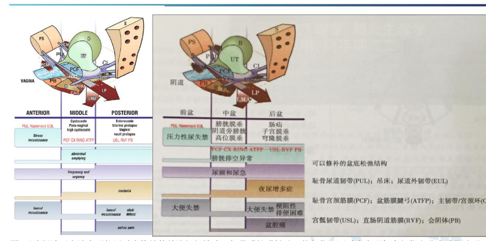


图3示诊断法示意地表明能用手术修补的结缔组织缺陷（韧带或筋膜松弛）的部位，同时也表明每个部位和盆底功能障碍症状之间的关联。症状所在的矩形面积表示每个部位引起症状的概率。前部：外口膀胱颈；中部：膀胱颈到宫颈前环；后部：
宫颈到会引体的阴道后壁。B:膀胱；EAS：肛门外括约肌；LMA：肛门纵肌；LP：肛提肌板；PCM：耻骨尾骨肌；PS:耻骨联合；R:直肠；S:骶骨；UT：子宫

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## 出口梗阻性便秘-概念

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## 出口梗阻性便秘-分类

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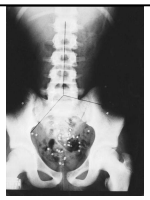
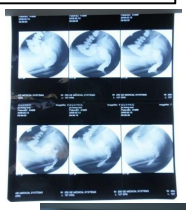
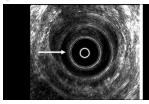
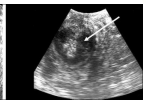
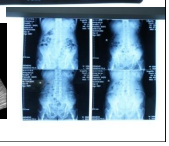
## 出口梗阻性便秘检查方法与价值意义



## 辅助检查

- 结肠传输试验
- X线排粪造影
- 钡灌肠
- 球囊逼出试验
- 盆底肌电图
- 肛管腔内超声
- 电子肠镜

## 辅助检查

dynamic MRI
（MRI排粪造影）

肛直角变化正常
MRI下显示

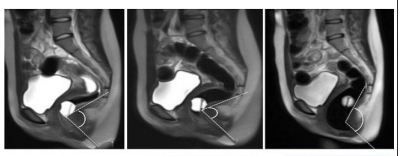


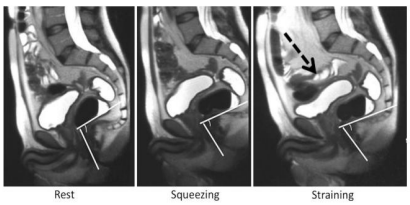
Fig. 6. Normal variations of the Ano.Rectal Angle (ARA): ARA at rest, during squeezing and straining at dynamic MRI, i correlation with pubo-rectal muscle's activity.

1.RHeinrich H, Sauter M, Fox M,et al.Assessment of Obstructive Defecation by HighResolution Anorectal Manometry Compared With MagneticResonance Defecography.Clin Gastroenterol Hepatol. 2015 Jul;13(7):1310-1317. ZHEJIANG PROVINCE

## 辅助检查

dynamic MRI
（MRI排粪造影）

肛直角变化异常
MRI下显示



Rest Squeezing Straining

1.RHeinrich H, Sauter M, Fox M,et al.Assessmentof Obstructive Defecation by HighResolution Anorectal Manometry Compared With MagneticResonanceDefecography.Clin Gastroenterol Hepatol2015 Jul;13(7):1310-1317.



Clinical Gastroenterology and Hepatology 2015;13:1310–1317

## Assessment of Obstructive Defecation by High-Resolution Anorectal Manometry Compared With Magnetic Resonance Defecography

高分辨直肠测压与动态MRI在便秘评估方面的比较

Henriette Heinrich,[*,‡,§] Matthias Sauter,[*,‖,¶] Mark Fox,[*,‖] Dominik Weishaupt,[¶] Marcel Halama,[*] Benjamin Misselwitz,[*] Simon Buetikofer,[*] Caecilia Reiner,[#] Michael Fried,[*,**] Werner Schwizer,[*,**,‡‡] and Heiko Fruehauf[*,‡]

BACKGROUND & AIMS:

Patients with obstructive defecation have abnormalities of anorectal function and/or structure. Conventional anorectal manometry (ARM) can identify abnormal function and behavior (dyssynergia); however, agreement between manometry and defecography is only fair. High-resolution (HR)-ARM may improve diagnostic agreement by differentiating pressure effects caused by dyssynergia and obstruction. We compared HR-ARM findings with magnetic resonance (MR) defecography in the clinical assessment of patients with symptoms of obstructive defecation defined by Rome III criteria.

METHODS:

HR-ARM (Manoscan AR 360; Given Imaging, Yoqneam, Israel) assessed anal sphincter function and pressure during simulated defecation. Abnormal manometric findings were classified according to the Rao system and compared with MR defecography as the reference standard.

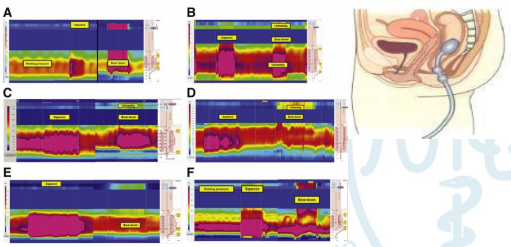
RESULTS:

A total of 188 consecutive patients (155 women; age, 19–93 y) with obstructive defecation underwent a full investigation. Compared with patients with dyssynergia on MR imaging (n = 66), patients with structural pathology (n = 87) had lower resting ($P < .003$) and squeeze pressures ($P < .011$), but a higher rectoanal pressure gradient ($P < .0001$) on HR-ARM. High intrarectal pressure with a steep, positive pressure gradient consistent with outlet obstruction on HR-ARM was present in 24 patients with intra-anal intussusception on MR imaging. This pattern was not observed in other patients. Interobserver agreement was substantial for HR-ARM diagnoses ($\kappa = 0.67$; 95% confidence interval, 0.559–0.779). Diagnostic accuracy for dyssynergia was 82% compared with MR imaging (sensitivity, 77% [51 of 66]; specificity, 85% [104 of 122]).

本研究共有188名有完整评估的便秘患者，与MRI上显示排便协同失调的56例患者相比，87例盆底结构异常的患者有着更低的静息压和收缩压，但在R-ARM上有着更高的直肠肛管压力梯度。

## 辅助检查

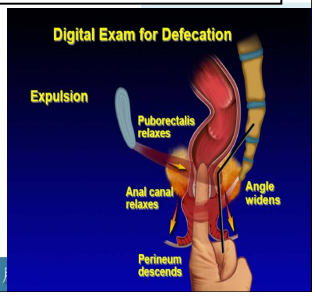
Anorectal manometryand HR-ARM（直肠测压）




1.RHeinrich H, Sauter M, Fox M,et al.Assessment of Obstructive Defecation by HighResolution Anorectal Manometry Compared With MagneticResonance Defecography.Clin Gastroenterol Hepatol. 2015 Jul;13(7):1310-1317.

## 直肠指诊---非常重要！！！

1 外观：有无松弛、脱垂
2 指诊
排除占位病变、
耻骨直肠肌综合征
3做提肛、排便动作





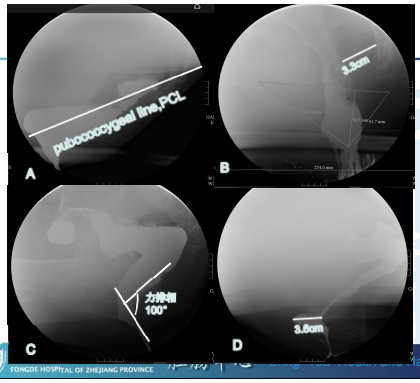

## 出口梗阻性便秘-诊断



## 诊断标准

- 会阴下降的诊断标准是肛上距力排时≥31mm，经产妇≥36mm为会阴下降，会阴下降多同时伴有直肠粘膜脱垂及直肠前突（图1，A）；
- 第三骶椎水平处骶骨和直肠之间的距离≥20mm，且直肠近端向前下移位，乙状结肠或小肠位于骶直间，可确诊骶直分离（图1，B）；
- 盆底痉挛综合征患者，在力排状态下肛直角不增大，保持在90°左右甚至更小，通过测量静息相、提肛相、力排相肛直角大小，观察肛直角后缘半弧形的耻骨直肠肌痉挛压迹深度的变化来确诊盆底痉挛综合征（图1，C）；
- 直肠前突主要测量深度力排时直肠向前突出最定点到虚拟的正常直肠壁位置的直线长度（图1，D）。








## 出口梗阻性便秘-治疗



## 治疗

- 根据可能的病理生理机制选择恰当的治疗方案是提高治疗效果的前提
- 重视询问病史和物理学检查，结合影像学及其他检查手段，分析相关原因和部位特点，作出个性化的诊断，制定个体化、综合化的治疗，手术前后应配合积极的非手术治疗巩固治疗效果。

中国便秘指南

## 治疗方法更细化、更多样、更全面

**2007**

- 一般处理
- 膳食纤维和膳食纤维制剂
- 通便药
- 促动力剂
- 中药
- 生物反馈治疗
- 手术治疗

**2013**

- 调整生活方式
- 药物治疗：泻剂、促动力药、促分泌药、灌肠药和栓剂
- 精神心理治疗
- 生物反馈治疗
- 其他：益生菌、中药、针灸、按摩推拿、骶神经刺激治疗
- 手术治疗
- 补充特殊人群的用药



## 精神心理治疗

- 心理指导、认知治疗
- 合并有明显心理障碍的患者可予以抗抑郁焦虑药物治疗
- 严重精神心理异常的患者应转至精神心理科行相关对症治疗

- 59%难治性便秘患者合并精神心理障碍
- 精神心理障碍影响综合治疗效果

许澍，等. 基础医学与临床 2008, 28: 387



## Biofeedback using a mirror

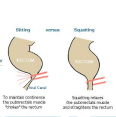
Patient is semi-reclined or hooklying
- Tighten: they see anal wink
- Relax: pelvic floor should relax, wink will let go
- Lengthen: should see pelvic floor bulge / decend

Home Exercise Program:
- Tighten, relax, lengthen repeated 10x in a row for learning, development of coordination
- 2-3x per day
- Using mirror laying down, when toileting
- Can also squat over mirror (easier than hooklying)

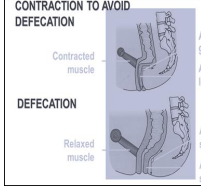
If patient has difficulty holding a mirror – educate caregiver on what to look for

## Objective Measures

Rectal assessment
- Resting tone
- Kegel strength and coordination
- Puborectalis
  - What happens with lengthening
  - Monitor abdomen at same time
- Patient feedback as to what is happening, quality of contraction




## Anorectal Angle Relaxation




## Biofeedback vs Laxatives

Chiarioni 2006 – compared 109 patients with pelvic floor dyssynergia
- 5 weekly biofeedback sessions vs polyethylene glycol and 5 weekly counseling sessions to prevent constipation

80% improved with biofeedback and 22% with laxatives
- Biofeedback results sustained at 12 and 24 months – less straining, less incomplete emptying
- Both groups showed increase frequency of voiding

Message: BFB helps with muscle retraining and voiding mechanics -> lasting results

## 肉毒素注射治疗

- 肉毒毒素：向耻骨直肠肌注射肉毒毒素已成功治疗了盆底功能障碍患者。一项非盲试验报道，在超声引导下向耻骨直肠肌两侧注射80-100U的A型肉毒毒素有效治疗了排便功能障碍患者[1]。可能需要重复注射来维持获益。

1.Maria G, Cadeddu F, Brandara F, et al. Experience with type A botulinum toxin for treatment of outlet-type constipation. Am J Gastroenterol 2006; 101:2570.



## Experience with Type A Botulinum Toxin for Treatment of Outlet-Type Constipation.

Source: American Journal of Gastroenterology. 101(11):2570-2575, November 2006.

METHODS: Twenty-four consecutive patients with chronic outlet obstruction constipation resulting from puborectalis syndrome were included in the study. The patients were treated with 60 units of type A botulinum toxin, injected into two site on either side of the puborectalis muscle unde ultrasonographic guidance.

RESULTS: At 2 months, evaluation inspection revealed a symptomatic improvement in 19 patients. Anorectal manometry demonstrated decreased tone during straining from 98 +/- 24[to]56 +/- 20 mmHg at a 1-month evaluation ($p < 0.01$) and 56 +/- 29 mmHg at a 2-month follow-up ($p < 0.001$). Pressure during straining was lower than resting anal pressure at the same time in all patients. Defecography after the treatment showed improvement in anorectal angle during straining, which increased from 98 +/- 9[degrees] to 121 +/- 15[degrees] ($p < 0.01$).

CONCLUSIONS: Botulinum toxin injections should be considered as a simple therapeutic approach in patients with obstructed defecation. The treatment is safe and effective, especially with the use of the ultrasonographic guidance that accounts for a more precise injection and consequently better long-term results. Otherwise, given the limited effect of the toxin, repeated injections may be necessary to maintain the clinical improvement.

**注射肉毒毒素可以被认为一项治疗便秘的方法。此方法安全有效，尤其是在超声引导下更有效注射肉毒毒素以及更好的远期疗效。但由于其的局限性，可能需要重复注射来维持获益。**



## 手术治疗

- 症状严重影响工作和生活，且经过一段时间正规的非手术治疗无效时，可考虑手术治疗，一定要掌握好手术适应证
- 术前因经过详细的相关检查（如影像等），全面了解肠道和肛门直肠功能以及形态学异常的严重程度，制定个体化、综合化治疗方案，实时评估病情变化。

*World Journal of Gastroenterology*

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Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
DOI: 10.3748/wjg.v21.i1.1
World J Gastroenterol 2015 January 7; 21(1): 1-5
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EDITORIAL

**Surgery for obstructed defecation syndrome-is there an ideal technique**

便秘的外科治疗-是不是理想技术？

**Core tip:** Surgical treatment of obstructive defecation syndrome remains a challenging topic. Several approaches have been described, with controversial functional outcomes. Each technique has its risks and benefits, thus careful patient selection is crucial to achieve optimal functional results. It is mandatory to assess not only defecation disorders but also evaluate overall pelvic floor symptoms, such as fecal incontinence and urinary disorders for choosing an appropriate and tailored strategy. Radiological investigation is essential but may not explain complaints of every patient.

Most important, conservative management should be offered to every patient before planning surgical treatment.

便秘的外科治疗要选择正确的治疗方式：有经肛的、经阴道、经会阴、经腹腔等，所有的方法都有其优点和缺点。最重要的是所有计划外科治疗的患者均需保守治疗为先。

***Choosing the right treatment***

There exists a great variety of operative techniques to treat patients with ODS. According to the surgeon's preference the approach can be transanal, transvaginal, transperineal or transabdominal.

All techniques have its advantages and disadvantages; thus, we believe that satisfying functional outcomes can only be achieved by offering a tailored approach to each individual patient. Consequently, it is essential for pelvic floor surgeons to focus on more than one operative technique to optimize treatment for defecatory disorders.

The transabdominal laparoscopic VMR showed good functional results for treating ODS in patients with complex rectocele and might also be the preferred technique in patients with preexisting weak sphincter muscle. However, long term results are still lacking.

The transvaginal approach can be offered to patients with an isolated rectocele and the need for additional gynecological operations. Notably, the functional outcome is conflicting and postoperative dyspareunia can occur.

Transanal correction of rectocele is commonly performed, with improved symptoms as demonstrated by several studies. Notably, postoperative fecal incontinence has been reported, especially after the STARR procedure.



# 手术治疗

- 术式报道很多，但没有任何一种手术方式可以称为金标准
- **PPH、TST、STARR**
- 腹腔镜直肠悬吊固定手术
- “金陵手术”
- 经阴道后盆人工韧带悬吊术
- ……



**Surgery for obstructed defecation syndrome-is there an ideal technique**

Stefan Riss, Anton Stift

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Author contributions: Riss S and Stift A contributed to conception, design, acquisition and interpretation of data; all authors revised the article and approved the final version.
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**Abstract**

Obstructive defecation syndrome (ODS) is a common disorder with a considerable impact on the quality of life of affected patients. Surgery for ODS remains a challenging topic. There exists a great variety of operative techniques to treat patients with ODS. According to the surgeon's preference the approach can be transanal, transvaginal, transperineal or transabdominal. All techniques have its advantages and disadvantages. Notably, high evidence based studies are significantly lacking in literature, thus making accurate assessments difficult. Careful patient's selection is crucial to achieve optimal functional results. It is mandatory to assess not only defecation disorders but also evaluate overall pelvic floor symptoms, such as fecal incontinence and urinary disorders for choosing an appropriate and tailored strategy. Radiological investigation is essential but may not explain complaints of every patient.

**Key words:** Obstructive defecation syndrome; Defecatory disorders; Rectopexy; Rectocele; Prolapse

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**Core tip:** Surgical treatment of obstructive defecation syndrome remains a challenging topic. Several approaches have been described, with controversial functional outcomes. Each technique has its risks and benefits, thus careful patient selection is crucial to achieve optimal functional results. It is mandatory to assess not only defecation disorders but also evaluate overall pelvic floor symptoms, such as fecal incontinence and urinary disorders for choosing an appropriate and tailored strategy. Radiological investigation is essential but may not explain complaints of every patient.

Riss S, Stift A. Surgery for obstructed defecation syndrome-is there an ideal technique. *World J Gastroenterol* 2015; 21(1): 1-5 Available from: URL: http://www.wjgnet.com/1007-9327/full/v21/i1/1.htm DOI: http://dx.doi.org/10.3748/wjg.v21.i1.1

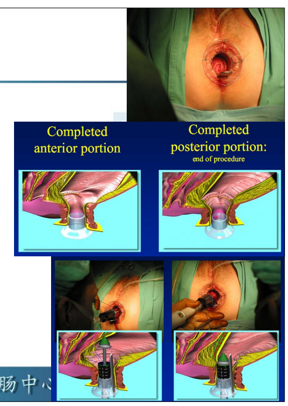
**INTRODUCTION**

Constipation is a common disorder in the general population with an estimated prevalence ranging from 1.9% to 27.2% in North America[1]. The wide range is mainly due to different definitions of constipation making accurate collection of epidemiological data difficult. Constipation is often multifactorial, but



## STARR

- STARR (stapled transanal rectal resection)
- For obstructed defecation
- Special stapling device



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ORIGINAL ARTICLE

Prospective Study

**Procedure for prolapse and hemorrhoids *vs* traditional surgery for outlet obstructive constipation**

Ming Lu, Bo Yang, Yang Liu, Qing Liu, Hao Wen

**METHODS:** One hundred eight inpatients who underwent surgery for outlet obstructive constipation caused by internal rectal prolapse and circumferential hemorrhoids at the First Affiliated Hospital of Xinjiang Medical University from June 2012 to June 2013 were prospectively included in the study. The patients with rectal prolapse hemorrhoids with outlet obstruction-induced constipation were randomly divided into two groups to undergo either a procedure for prolapse and hemorrhoids (PPH) ($n$ = 54) or conventional surgery ($n$ = 54; control group). Short-term (operative time, postoperative hospital stay, postoperative urinary retention, postoperative perianal edema, and postoperative pain) and long-term (postoperative anal stenosis, postoperative sensory anal incontinence, postoperative recurrence, and postoperative difficulty in defecation) clinical effects were compared between the two groups. The short- and long-term efficacies of the two procedures were determined.

**Table 2 Outcome measures for long-term efficacy and safety $n$ (%)**

| Outcome measure | PPH group ($n$ = 54) | Control group ($n$ = 54) | $\chi^2$ value | $P$ value |
|---|---|---|---|---|
| Anal stenosis | 1 (1.85) | 3 (5.56) | 0.26 | 0.610 |
| Anal tenesmus | 15 (27.78) | 13 (24.07) | 0.193 | 0.661 |
| Sensory anal incontinence | 2 (3.70) | 7 (12.96) | 3.951 | 0.041 |
| Recurrence | 6 (11.11) | 9 (16.67) | 0.697 | 0.404 |
| Difficulty in defecation | 7 (12.96) | 13 (24.07) | 2.209 | 0.137 |

PPH: Procedure for prolapse and hemorrhoids.

**Table 1 Outcome measures for short-term efficacy and safety**

| Outcome measure | PPH group ($n$ = 54) | Control group ($n$ = 54) | $\chi^2$ or $t$ value | $P$ value |
|---|---|---|---|---|
| Operative time, min | 24.36 ± 5.16 | 44.27 ± 6.57 | 17.514 | < 0.001 |
| Postoperative hospital stay, d | 2.1 ± 1.4 | 3.6 ± 2.3 | 4.094 | 0.001 |
| Urinary retention, $n$ (%) | 26 (48.15) | 20 (37.04) | 1.363 | 0.243 |
| Perianal edema, $n$ (%) | 12 (11.11) | 23 (42.60) | 5.115 | 0.024 |
| Postoperative VAS score | | | | |
| At 24 h | 2.9 ± 0.9 | 8.3 ± 1.1 | 27.923 | < 0.001 |
| At first defecation | 2.0 ± 0.5 | 6.5±0.8 | 35.055 | < 0.001 |
| At one week | 1.7 ± 0.5 | 5.0 ± 0.7 | 28.205 | < 0.001 |

VAS: Visual analogue scale; PPH: Procedure for prolapse and hemorrhoids.

This study shows that compared with the traditional surgery, PPH is associated with less postoperative pain and shorter operative and hospitalization times.

本研究显示PPH治疗出口梗阻性便秘与传统手术相比，减轻了术后疼痛，缩短了手术及住院恢复的时间。



# “金陵手术”

- 南京军区南京总医院全军普通外科研究所对顽固性混合型便秘的外科治疗进行了技术创新，即施行结肠次全切除解除慢传输病因，同时行升结肠直肠(后壁)侧侧吻合，纠正盆底解剖和功能紊乱，从而解除了出口梗阻病因。

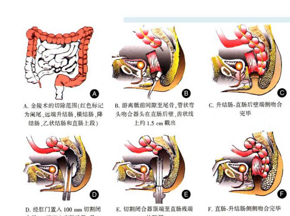

图 2 金陵术示意图

Tech Coloproctol (2016) 20:129–133
DOI 10.1007/s10151-015-1412-4

CrossMark

TECHNICAL NOTE

## Trans-anal endoscopic microsurgery for internal rectal prolapse

A. L. A. Bloemendaal[1] · M. De Schepper[1] · A. Mishra[1] · R. Hompes[1] · O. M. Jones[1] · I. Lindsey[1] · C. Cunningham[1]

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**Abstract** Internal rectal prolapse can lead to obstructed defecation, faecal incontinence and pain. In treatment of frail or technically difficult patients, a perineal approach is often used, such as a Delorme's or a STARR. However, in case of very high take-off prolapse, these procedures are challenging if not unsuitable. We present trans-anal endoscopic microsurgery as surgical option for management of this uncommon type of rectal prolapse in specific cases.

This paper will discuss using a trans-anal endoscopic microsurgery (TEM) procedure to deal with symptomatic very high take-off internal rectal prolapse, a technique we call the "TransAnal Endoscopic (internal) Rectal Prolapse" procedure, the TERP procedure.

**Technique**

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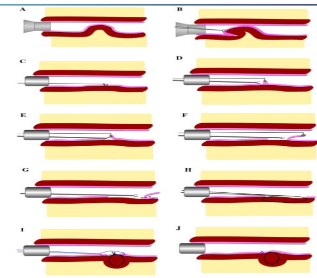
**Fig. 1** TEM procedure adapted for treatment of internal rectal prolapse (rectal intussusception) and as described in text, the TERP procedure. The mucosa is depicted in *pink* and the muscular tube in *brown*. The mesorectum is depicted in *yellow*. **a** CAD inserted to assess prolapse. **b** Suture placed on apex of prolapse. **c** TEM tube placed and pneumorectum achieved. **d** Using suture for traction, mucosa is dissected (if necessary full-thickness resection can be performed). **e + f** Further dissection of mucosa. **g** Transection of mucosa (*dotted line*). **h** Plication sutures to muscular layers. **i**: Plication of muscular layer (**i + j**)

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European Review for Medical and Pharmacological Sciences 2014; 18: 3921-3926

## Efficacy of endoscopic stapled transanal rectal resection for the treatment of rectocele

Z.-G. ZHANG, G. YANG, D. PAN, C.-H. LIANG

Department of Colorectal Surgery, Xuzhou City Center Hospital, Xuzhou, China

**Abstract. – OBJECTIVE:** The objective of the study was to determine the efficacy of endoscopic stapled transanal rectal resection for the treatment of rectocele.

**PATIENTS AND METHODS:** For this purpose, the data were collected from 61 patients with severe rectocele that underwent endoscopic stapled transanal rectal resection within the time period from April 2010 to April 2012. The pre- and post-operative Longo's obstructed defecation syndrome (ODS) were compared. The reduction of the rectocele was assessed by defecography on visit and from patients' satisfaction obtained through following up.

**RESULTS:** We found that the postoperative Longo's ODS was significantly lower than the preoperative value ($p < 0.01$); and defecography showed that the rectocele was significantly reduced or disappeared. Furthermore, 57 of the 61 (93.4%) patients expressed their satisfaction at follow up.

**CONCLUSIONS:** The endoscopic stapled transanal rectal resection can be recommended as the treatment of choice for rectocele since it is an easy-to-perform procedure that has satisfactory short and mid to long-term therapeutic efficacy.

practiced in China and the efficacy of the procedure largely remains unknown. Herein, we present the data regarding 61 endoscopic stapled transanal rectal resection surgeries performed at our department during the time period from April 2010 to April 2012, including 61 cases before April 2012.

### Patients and Methods

*Patients*

The study was approved by the institutional Ethics Committee. All the patients included in this study were female and they met with the following criteria: (1) Rome III diagnostic criteria of functional constipation; (2) defecography showed rectocele of ≥ 3 cm; (3) colonic transit test showed normal result; (4) conservative therapy used for 1-3 months was found to be ineffective; (5) no psychiatric disorders and/or other serious complications were found; (6) willingness to undergo the corrective surgery and signing of infomed consent forms. The mean age of the

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## Contour Transtar in True Rectal Prolapse

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**ABSTRACT:** **Background:** A new device, the CCS-30 Contour Transtar™, was recently launched for the treatment of obstructed defecation syndrome (ODS).
**Objectives:** To evaluate the efficacy of the Contour Transtar in resection of true rectal prolapse in relation to age and concomitant urogynecologic procedures.
**Methods:** During a 50 (median) month period 15 women with rectal prolapse of ≥ 5 cm and complaints of obstructed defecation underwent perineal resection of rectal prolapse with the Contour Transtar.
**Results:** In 3 of the 15 patients (20%) rectal prolapse recurred. Amelioration of ODS symptoms and improved continence were noted in 82% and 75%, respectively, following surgery.
**Conclusions:** The Contour Transtar procedure for full-thickness rectal prolapse is a safe and promising procedure and is likely suitable for elderly poor risk patients.

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**KEY WORDS:** rectal prolapse, perineal resection, obstructed defecation syndrome (ODS), Contour Transtar™

to be simple, safe and effective, is particularly recommended for elderly high risk patients, and may substitute for the traditional Altemeier procedure.

In this study we investigated the use of the CCS-30 Contour Transtar for perineal rectal resection of true rectal prolapse in relation to age and concomitant urogynecologic procedures.

### PATIENTS AND METHODS

After obtaining Institutional Review Board approval, we conducted a retrospective cohort analysis of all Transtar procedures for true rectal prolapse performed at Wolfson Medical Center, documented in medical records and hospital charts. During a 50 month period (median), 15 women underwent the Transtar procedure for true rectal prolapse. The symptoms of ODS and prolapse were graded according to the presence or absence of complaints. Grading of the rectal prolapse was evaluated clinically according to the classification of Fleshman et al. [6]. All women complained of ODS and pain and all had rectal prolapse of at least 5 cm length (grade 5).

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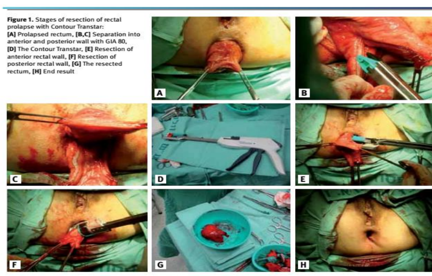
**Figure 1.** Stages of resection of rectal prolapse with Contour Transtar:
**[A]** Prolapsed rectum, **[B,C]** Separation into anterior and posterior wall with GIA 80, **[D]** The Contour Transtar, **[E]** Resection of anterior rectal wall, **[F]** Resection of posterior rectal wall, **[G]** The resected rectum, **[H]** End result

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- 美国胃肠联盟[1]早在2012年就呼吁，在纤维饮食、通便剂等保守治疗方法失败后，生物反馈治疗前应先行肛门直肠测压评估盆底肌功能，盆底肌功能障碍患者行生物反馈治疗，疗效优于通便剂。
- 患者出现排便费力、硬粪、手助排便等病史，均提示了梗阻性排便的诊断。但尚无证据学支持这类患者肛门直肠测压检查结果有何诊断标准。
- Ratuapli等将出口梗阻性患者的测压结果与正常人相比，具有三大特点，1.肛管高压（高静息压及高排便压）；2.低压（低直肠排便压）；3.力排相直肠舒张不充分造成的舒张压降低。[2]

1.American GastroenterologicalA.Gastroenteology. 2013;144(1):211–7.

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- 直肠前突为出口梗阻性便秘主要器质性改变之一，在多数出口梗阻性便秘关于肛门直肠测压的报道中，肛门收缩压均下降，肛门最大收缩压下降意味着这类患者肛门外括约肌及耻骨直肠肌的收缩功能降低。Perry RE[1]的研究工作发现距离肛门缘1cm为横纹肌复合体的中心位点，且肛管前方形成整个括约肌复合体压力最大值区域。而直肠前突这一病理性改变破坏了肛门前侧的正常解剖，因此肛管最大收缩压较正常组明显降低。
- 本研究发现盆底肌痉挛患者力排相舒张压降低，与Pucciani [2]等的研究结果相一致，Pucciani认为上述诊断结果有助于判断下一步括约肌功能康复治疗效果。

[1]Perry RE.The American Journal of Surgery.1990.159:112-116



## 生物反馈结合艾灸治疗排便障碍患者



- 对功能性便秘患者随机分为2组，治疗1组（生物反馈组）、治疗2组（艾灸结合生物反馈疗法组）。
- 生物反馈治疗应用生物反馈仪，采用图文、声音的多媒体方式指导患者锻炼盆底肌群，每天1次，20天为1疗程，一般进行2疗程治疗。
- 治疗2组加用艾灸治疗，采用腹部与背部相应的穴位交替施灸(中脘、神厥、关元、天枢、足三里与脾俞、胃俞、肾俞、大肠俞、涌泉等穴)，每天1次，20天为1疗程。
- 比较2组患者疗效、满意度，治疗前后排便间隔、粪便性状、排便时间、排便不尽感、肛门直肠阻塞感等的CSS评分变化以及治疗前后心理调查量表指标变化，进行统计学分析。



## 结果



| | n | 便秘症状评分（CSS） | | 汉密尔顿焦虑量表（HAMA） | |
|---|---|---|---|---|---|
| | | 治疗前 | 治疗后 | 治疗前 | 治疗后 |
| 治疗一组 | 38 | 10.63±1.14 | 5.76±1.68 | 23.33±3.98 | 17.25±4.54 |
| 治疗二组 | 39 | 11.05±1.39 | 6.35±1.59 | 21.87±5.01 | 11.12±3.28 |
| | | p=0.14＞0.05，无统计学差异 | | | p=0.03＜0.05 |

生物反馈患者共38例，男性12例，女性26例；艾灸结合生物反馈患者共39例，男性10例，女性29例。平均年龄51.21±7.94。平均治疗2个疗程，二组患者便秘症状及心理症状评估均改善明显，其中，便秘症状组间比较无显著差异。艾灸结合生物反馈组心理症状改善程度优于单纯生物反馈治疗组，p=0.03＜0.05





- Longo ODS 评分（151例）

| | 手术前 | 手术后 | P |
|---|---|---|---|
| 分值 | 12.31+-3.06 | 3.59+-1.98 | <0.001 |

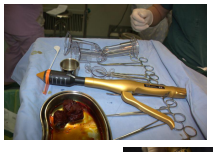
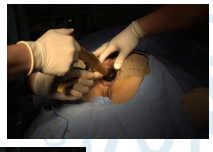
Longo ODS评分（0-40）正常人<2

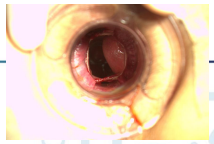
ODS>9

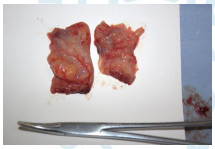
Boccasanta P,et al.Stapled Transanal Rectal Resection in Solitary Rectal Ulcer Associate with Prolapse of the Rectum: A Prospective Study. Dis Colon Rectum



## TST





患者，男性，65岁，“反复便血5年余，排便不尽感2年”

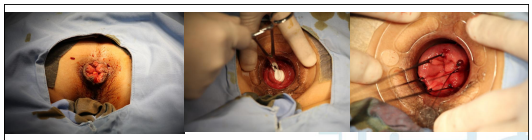
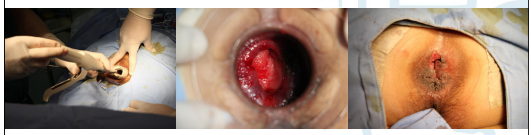
术式：PPH03——双开关

患者，男性，56岁，因“排便费力1年余，便血1周”入院

术式：TST33——环切



# TST+ STARR

患者，女性，45岁 。 因“排便困难两年余”入院 。 查体：腹软，无压痛，指检：距肛缘6cm未及新生物。结肠运输试验提示：结肠慢传输。查排粪造影提示：乙状结肠冗长，内脏下移，盆底疝？请结合临床。会阴下降。直肠中度前突。查肠镜无明显异常。手术名称：结肠次全切除术



# •TST36手术



# 一般情况：

| | | 例数 |
|---|---|---|
| 性别 | | |
| 男 | | 1 |
| 女 | | 14 |
| 诊断 | | |
| 混合痔 | | 11 |
| 直肠脱垂 | | 13 |
| 直肠前突 | | 13 |
| 便秘 | | 9 |
| 排粪造影 | | |
| 直肠前突 | 轻度 | 2 |
| | 中度 | 2 |
| | 重度 | 9 |
| 直肠粘膜脱垂 | 轻度 | 1 |
| | 中度 | 4 |
| | 重度 | 10 |
| 耻骨直肠肌痉挛 | | 1 |
| 麻醉方式 | | |
| 腰麻 | | 13 |
| 硬膜外麻 | | 2 |
| 手术体位 | | |
| 俯卧折刀位 | | 13 |
| 截石位 | | 2 |

| | |
|---|---|
| 手术用时 | 20-48（31.87±8.22）min |
| 术中出血 | 5-20（11.87±4.58）ml |
| 吻合口距齿线距离 | 2.11±0.30cm |
| 切除粘膜体积 | 11.83±0.65ml |
| 术后住院时间 | 11.83±0.65d |



# 术后并发症

| 疼痛 | | | 出血 | | 水肿 | 尿潴留 |
|---|---|---|---|---|---|---|
| 轻 | 中 | 重 | 渗血 | 波动性出血 | | |
| 4 | 7 | 3 | 4 | 2 | 1 | 2 |



# 随访

| | 便血 | 水肿 | 坠胀 | 每日排便次数 | 疼痛 |
|---|---|---|---|---|---|
| 术后一月 | 无 | 1例（6.67%） | 无 | 1-2次 1.27±0.46 | 8例（VAS评分2.13±0.83） |
| 术后三月 | 2例偶有便血 | 1例（6.67%） | 无 | 1-2次 1.13±0.35 | 2例（VAS评分均为1分） |
| 术后三月 | 无 | 1例（6.67%） | 无 | 1-2次 1.07±0.26 | 无 |