

经阴骶棘韧带悬吊术的临床进展

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摘要

经阴骶棘韧带悬吊术作为治疗盆腔器官脱垂的手术方法, 对其进一步的研究和临床试验将有助于优化手术技术, 提高患者的术后满意度和生活质量。本研究的主要目的是综述近年来有关经阴骶棘韧带悬吊术的临床研究, 探讨其手术效果、并发症及相关影响因素。

关键词

盆底器官脱垂, 中盆腔脱垂, 骶棘韧带悬吊术

Clinical Advances in Transvaginal Sacrospinous Ligament Suspension

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Abstract

Transvaginal sacrospinous ligament suspension, as a surgical treatment for pelvic organ prolapse, requires further research and clinical trials to optimize the technique and improve postoperative outcomes and quality of life for patients. The primary objective of this study is to review recent clinical evidence on transvaginal sacrospinous ligament suspension, analyzing its surgical efficacy, complications, and related influencing factors.

Keywords

Pelvic Organ Prolapse, Apical Prolapse, Sacrospinous Ligament Suspension

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1. 引言

盆腔器官脱垂指由于盆腔韧带或肌肉无力导致盆腔结构(膀胱、阴道、子宫、直肠等)下降到阴道内的慢性疾病[1]。国内学者通过一项多中心横断面研究发现,在中国,成年女性症状性盆底器官脱垂(Pelvic Organ Prolapse, POP)发病率高达 9.6%,且其发病率随着年龄增加而增加[2],而如何纠正盆腔脏器脱垂,恢复中盆腔解剖结构至关重要[3]-[5]。向雪冰等学者[6]比较多种中盆腔术式后指出,目前治疗中盆腔脱垂的手术方式虽多,但缺乏统一的术式选择标准,各种手术各有利弊,综合解剖结果和功能结果及手术并发症等各方面,没有发现任何一种方法明显优于另一种方法。而在众多的手术方式中,骶棘韧带悬吊术凭借着手术时间短、出血少,近期越来越受临床医生的青睐。骶棘韧带悬吊术(Sacrospinous Ligament Suspension, SSLF)最早由德国妇科医生 Richter 在 20 世纪 50 年代提出,经过半个世纪的发展,逐渐成为一种广泛应用于治疗盆腔器官脱垂,尤其是中盆腔脱垂的手术方法。骶棘韧带悬吊术(SSLF)可以经阴、经腹或经腹腔镜完成,其中经阴途径最为常用。近年来,随着手术技术和材料的不断进步,经阴 SSLF 在临床上的应用取得了显著的进展。

2. 手术效果及手术改进

经阴 SSLF 手术思路是对右侧骶棘韧带进行单侧阴道穹窿骶棘子宫固定术,将阴道顶端固定在坐骨棘水平,从而恢复子宫阴道解剖位置的手术方式。一项针对 SSLF 长达七年的小样本回顾性研究[7]提示,随访 1 年及 7 年时的脱垂客观治愈率分别为 96%和 94.28%,这显示了 SSLF 在脱垂治愈方面的巨大潜力。多年以来,学者们亦致力于将骶棘韧带悬吊术与治疗中盆腔脱垂的各项手术方式进行对比,以进一步评估其临床疗效。Martins 等[8]、Hajhashemi 等[9]通过单中心、长随访的随机临床试验发现,SSLF 和子宫骶骨韧带悬吊术(Uterosacral Ligament Suspension, USLS)在 POP 的治疗中均表现出高治愈率,且无显著差异;Isuzu Meyer 等[10]更是通过更高质量的多中心随机临床实验证明了上述观点。而 Schulten 等学者[11]的一项多中心随机试验观察显示,骶棘韧带悬吊术在 5 年随访中,中盆腔脱垂的手术失败率显著低于子宫全切术联合子宫骶骨韧带悬吊术。Nemi 等学者[12]进行的多中心、回顾性队列研究,纳入了 2006 年 1 月至 2018 年 12 月接受骶骨阴道/子宫固定术(Sacrocolpopexy or Sacrohysteropexy, SCP)、子宫骶骨韧带悬吊术、骶棘韧带固定术或阴道闭锁术(Colpocleisis, CC)共 9681 女性,调查发现在四项治疗中央型脱垂的手术中,CC、SCP 是术后再发率最低的(再发率分别为 0.14%、0.48%),USLS、SSLF 再手术率相似(再发率分别为 0.9%、1.39%)。Maher 等学者[13]纳入了 30 项随机对照试验(3414 名女性),比较各种治愈中央脱垂的手术方法,发现腹腔镜下骶骨固定术并发症少、复发率低,但是其缺点为手术时间长、出血多。综上,在术后脱垂复发率方面,SSLF 与其他手术方式相比具有非劣效性,而在术中出血方面及手术麻醉时长方面,SSLF 有其独特优势,因此,对于无法耐受长时间手术的老年患者,可以选择经阴 SSLF。

尽管 SSLF 以其独特的优势在脱垂手术上占有一席之地,但该术式经过长期随访仍暴露了不少弊端。有学者[14]回顾既往文献发现 SSLF 术后中央脱垂复发虽不常见(2.4%~19%),但前壁脱垂复发的概率高(6%~28.5%)。而骶棘韧带悬吊术后阴道前壁脱垂的复发已在许多系列研究中被发现,其中 Lua-Mailland 等[15]通过 Meta 分析综合多篇文献同样证明 SSLF 对中央型脱垂疗效好(复发率约为 4.5%),而术后前壁主观复发率高达 27%。Morgan 等学者[16]审查了 187 项研究,提出 SSLF 术后阴道前壁复发率较高可能

与先前发生的神经肌肉支持伤或术后阴道轴的变化或两者的组合有关。因此 SSLF 改良手术近年来层出不穷, 如何降低 SSLF 术后前壁复发率成为盆底医生关注的重点。Geoffrion 等学者[17]改良了骶棘韧带悬吊术, 期望改良后的双侧骶棘穹窿固定术通过使用聚丙烯网片以最小的张力将阴道穹窿悬吊于双侧骶棘韧带上, 通过重建中线解剖结构, 纠正阴道轴偏向, 改善术后前壁脱垂。然而, 这项随访时间一年的前瞻性队列研究发现, 虽然此改良术术后并发症少, 住院时间短, 麻醉剂使用少, 但术后前壁脱垂率依然未能解决。笔者认为该术式通过改变阴道偏向一定程度上能够减少术后复发可能, 但前壁复发可能主要是与宫颈或阴道穹窿经垂直向下的重力与腹压影响而前倾所致, 因此改良关键在于前壁的加固。Goldberg 等学者[18]另辟蹊径比较了传统后路和前路骶棘悬吊术后的阴道解剖结构手术疗效, 与后路骶棘韧带悬吊术相比, 前路骶棘悬吊术后复发性阴道前壁脱垂减少。De Gracia 等[19]分析了四个手术组: 带网片的前路 SSLF ($n = 566$)、天然组织修复的前路 SSLF ($n = 331$)、带网片的后路 SSLF ($n = 57$)和天然组织修复的后路 SSLF ($n = 405$), 其中 44 例(3.2%)女性报告盆腔器官脱垂复发而需要再次手术, 后路 SSLF 的复发率高于前路 SSLF ($p = 0.0034$), 得出与后路和使用天然组织相比, 前路和使用网片的复发再次手术风险较低的结论。因此, Vu、Hu 等学者[20][21]吸收前人经验经前路在双侧骶棘韧带上放置无张力网片, 通过回顾性查看数据, 观察到前室复发率 $< 2\%$, 与既往 SSLF 研究相比, 前壁复发率得到改善。Delacroix 等学者[22]也将前路双侧骶棘韧带悬吊术(abSSLF)与前路天然组织修复相比较, 发现虽然在该研究中前室复发率高达 37%, 但这主要是因为与其他研究相比, 其复发的判断标准较低($Ba \geq -1$), 所以这仍可以证明其与治疗中盆腔脱垂并预防前壁脱垂相关。然而, 对于其新型术式的长期耐久性(> 5 年)仍缺乏高质量的大型随机临床数据。未来研究可通过高质量随机临床数据进一步证实改良术式疗效。

3. 并发症及如何预防

SSLF 在围手术期及治愈率方面表现优异, 但其并发症仍需关注。其中术后出现大腿及臀部疼痛的并发症最常见, 文献显示[23]-[26], 大多数女性(55%~84%)在术后立即出现臀部或大腿疼痛, Huang 等学者[27]随访 56 例 SSLF 术后患者 2 年及以上, 发现 10.7%的患者出现术后臀部疼痛, 可见特定区域的疼痛是 SSLF 术后比较特有的并发症; 而 20%~30%患者出现尿潴留, 其中少数为膀胱出口梗阻, 需通过剪去部分吊带解决; SSLF 术后危及生命的出血发生率为 0.2%至 2%; 缝线材料或是网片材料的暴露、神经卡压亦是在 SSLF 术的问题。

之所以出现以上并发症的原因是骶棘韧带(SSL)位于一个复杂的解剖区域[28], 富含神经血管结构, 所以必须避开这些结构, 才能减少急性出血或慢性盆腔疼痛等并发症。Katrikh 等学者[29]在尸体标本上模拟骶棘韧带固定, 发现第 4 骶尾神经穿行于骶棘韧带内侧 1/3 部分, 而阴部神经、尾骨神经和肛提肌的神经常穿行于韧带的外侧 1/3, 臀下动脉在坐骨棘上方穿行约 15.8 毫米处, 进入坐神经大孔, 而阴部内动脉则在坐骨棘上方穿行。研究表明, 韧带中段的血管损伤发生率最低, 骶棘韧带中段 16.0 至 32.0 毫米的区域被认为是安全性较高的穿刺区域, 在此处放置缝合线不太可能卡住神经或损伤动脉。Giraudet 等学者[30]明确指出要远离坐骨棘(近 2 厘米)以避免神经和血管损伤。

综上, SSLF 的手术并发症有邻近血管损伤引起的出血和血肿, 髋关节、腿部、会阴疼痛, 神经损伤引起的排尿异常, 以及膀胱和直肠的损伤和材料暴露等, 必须选择合适的缝合点、缝合材料, 以降低术后并发症的发生率。

4. 术后效果影响因素

Caroline 等学者[28]和 Ayush Giri 等学者[31]发现体重指数和脱垂症状的持续时间与手术失败有关, 其中 Richter 观察到肥胖女性和超重女性的失败率分别是正常体重女性和体重不足女性的 2.9 倍和 1.8 倍。

此外, Schulten 等学者[31]随访 SSLF 术后五年内的患者发现, 影响骶棘韧带悬吊术效果的因素包括患者的体质指数(BMI)、吸烟史和术前 POP 分期(尤其是 Ba 值)。而就国内近期的大型回顾性研究报道[32], BMI $\geq 25 \text{ kg/m}^2$ 、绝经、盆腔手术史、长期便秘、术前高 POP-Q 分度是影响 POP 患者术后复发的独立危险因素。所以临床医生也需重视对高危患者的术后随访, 针对以上危险因素进行干预, 必要时配合盆底康复治疗, 减少脱垂的复发及二次手术可能。

5. 结语

综上所述, 骶棘韧带悬吊术是治疗中盆腔缺陷尤其是子宫或阴道穹隆脱垂的一种有效且经典的外科术式。其核心优势在于利用坚韧、固定的骶棘韧带作为悬吊支点, 能够为脱垂的阴道顶端提供持久且符合生理轴向的支撑, 从而实现较高的解剖复位率与患者满意度。然而, 该术式也存在一定的局限性及特有并发症。未来, 该领域的研究方向应聚焦于进一步优化手术技术以减少并发症, 并通过长期、大样本的随访数据来巩固其疗效证据。同时, 结合患者个体化的脱垂程度、年龄、功能需求等因素, 进行更为精细的术式选择和综合治疗方案的制定, 将是提升盆底重建手术整体效果的关键。

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