Peer Review File

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Review Comments

Reviewer A

Comment: Thanks for asking me to review this interesting paper on the surgical treatment of perineal descent in women usingtwo types of sling. The findings in females with perineal descent are adequately described and the technique to repair it is rather interesting and convincing.
Nevertheless, to be accepted for publication, in my opinion the description of the technique should be supported by a clinical series. How many patients did the authors operate using this procedure and which was the clinical outcome of the operation? Did they have postoperative complications, such as infection of the mesh or other adverse events? The length and the modality of the follow-up should be also reported. In absence of these data the paper cannot be accepted for publication.

Reply: Dear colleague, thank you for your review. These are important questions. This paper is a short review on techniques surgically available for cure of DPS (descending perineal syndrome)It is paper No11 in a series of 19 papers on the Integral Theory of Female urinary Incontinence. The motivation for including the repair of the deep transversus perinei ligaments was within the context that 1. DPS is considered incurable). 2. In 2014, the all mesh, even tapes were banned in the UK, USA, Australia and several European Countries.

In the minisling tape group mentioned in the review , there are two published papers 30 patients with obstructive defecation syndrome who had TFS minisling repair of elongated deep transversus perinei ligaments (DTP) [1,2]. Complications occurred in three cases (10%) and included a surfaced tape that was partly resected (repair maintained), a recurrence of the rectocele due to incorrect placement (failed repair) and a foreign body abscess requiring tape removal. At 12- month follow-up, 27 patients (90%) reported normal defaecation and the median obstructive defaecation syndrome score was significantly reduced to 4 (range 1–6; $P < 0.001$) [,2]. The second group comprised 234 women where the technique was discussed further in the context of total pelvic ligament repair [3]. The tape erosion rate was 3%, but there was no infection or abscess.

Artisan tapes for repair of DTP. In 2014, all mesh kits, even tapes, were banned in the UK, USA, Australia and several European Countries. However, it remained within the province of the individual surgeon to use an artisan tape identical to the TFS tape in structure and surgical technique, which could be used for the indivudal patient. We know this method is in use for repair of the pubourethral, cardinal, uterosacral and deep transversus perinei ligaments for individual patients in various countries, but we have no organized data.

Wide-bore no2 polyester sutures for DTP repair

Still In the 2014 mesh kits ban, the 1st author (RH) added wide-bore polyester suture plication of DTP ligaments to his standard perineal body (PB) repair technique. The medium-term data available , 6-18 months , concerns 4 women who underwent the modified perineal body repair with DPS plication. There were no complications, with successful anatomical and clinical results.

Why we agreed to write this paper and why we believe it should be published. We appreciate the reviewer's concern for more and long term data. However, as there is no known cure of DPS, and given the one addition to a standard native tissue PB repair, we consider it an obligation to make this method known.

We have added to the conclusion:

If the addition of the polyester suturing of DPS to standard PB repair is successful, it will not be so difficult for experienced vaginal surgeons to add this small step to their technique. Though promising, only long-term results can determine the effectiveness of this innovation.

1. Wagenlehner FME, Del Amo EGA, Santoro GA, et al. Live anatomy of the perineal body in patients with third- degree rectocele. Colorectal Dis 2013 Nov;15(11);1416-22. [PubMed]
2. Wagenlehner FM, Del Amo E, Santoro G, et al. Perineal body repair in patients with 3rd degree rectocele. A critical analysis of the tissue fixation system. Colorectal Dis 2013 Dec;15(12):e760-e5. [PubMed]
3. Petros PE, Inoue H. Transvaginal perineal body repair for low rectocoele. Tech Coloproctol 2013;17(4):449-54. [PubMed]

Reviewer B

Reply to Revier B: Dear colleague, thank you for your review. These are important questions. This paper is a short review on techniques surgically available for cure of DPS (descending perineal syndrome)It is paper No11 in a series of 19 papers on the Integral Theory of Female urinary Incontinence. The motivation for including the repair of the deep transversus perinei ligaments was within the context that 1. DPS is considered incurable). 2. In 2014, the all mesh, even tapes were banned in the UK, USA, Australia and several European Countries. We reply en linea below. (Data in red)

Comemnt 1: The pathogenesis of DPS is injury to the perineal body muscle insertions at delivery. 80% of primiparae women have a grade 2 perineal/vaginal tear. Rotstein E, Åhlund S, Lindgren H, Lindén Hirschberg A, Rådestad I, Tegerstedt G. Posterior compartment symptoms in primiparous women 1 year after non-assisted vaginal deliveries: a Swedish cohort study. Int Urogynecol J. 2021 Jul;32(7):1825-1832. doi: 10.1007/s00192-021-04700-6. Epub 2021 Mar 1. PMID: 33646348; PMCID: PMC8295137. DPS in vaginally nulliparae is rare. Levator ani avulsion combined with perineal body insufficiency promotes perineal descent and obstructed defecation.

Reply: With reference to the paper by Rotstein E, Åhlund S et al.
We respectfully point out that the reviewer is confusing 2nd degree tear with DPS.

As we understood the Rotstein paper, it was based on 2nd degree tears in primiparous women and some women had defecation difficulty. There was no mention of the bulge and descent on straining of DPS. With reference to Levator ani avulsion combined with perineal body insufficiency promotes perineal descent and obstructed defecation. We respectfully disagree with this comment. Dietz et al, perhaps the peak authorities on levator avulsion and prolapse, state the main association with levator avulsion is cystocele, not DPS.

Dietz HP, Shek KL, Low GK. All or nothing? A second look at partial levator avulsion. Ultrasound Obstet Gynecol. 2022 Nov;60(5):693-697. doi: 10.1002/uog.26034. PMID: 35872659

Comemnt 2: Discussing the concept of DPS without evaluating or even mentioning levator ani status is not in line with current knowledge..

Reply: DPS is a colorectal diagnosis. We respectfully refer the reviewer to the colorectal literature. We do not recall any mention of levator status in colorectal literature, and reqally, it is not relevant to a surgical technique.

Comemnt 3: There is sufficient evidence to suggest that correct native tissue repair of the perineal body and distal levator ani insertions can counteract long term symptoms. Bergman I, Westergren Söderberg M, Ek M. Perineorrhaphy Compared With Pelvic Floor Muscle Therapy in Women With Late Consequences of a Poorly Healed Second-Degree Perineal Tear: A Randomized Controlled Trial. Obstet Gynecol. 2020 Feb;135(2):341-351. doi: 10.1097/AOG.0000000000003653. PMID: 31923073.

Reply: Yes, we agree. However, DPS is NOT a perineal tear. DPS isa different clinical condition. In an important review In their review, Chaudhry and Tarnay stated: “It is controversial whether surgical management is even an option for patients with DPS” Chaudhry Z, Tarnay C. Descending perineum syndrome: a review of the presentation, diagnosis, and management. Int Urogynecol J 2016 Aug;27(8):1149-56. [PubMed]

Comemnt 4: Rotstein E, Ullemar V, Engberg H, Lindén Hirschberg A, Ajne G, Tegerstedt G. One-year follow-up after standardized perineal reconstruction in women with deficient perineum after vaginal delivery. Acta Obstet Gynecol Scand. 2023 Aug 18. doi: 10.1111/aogs.14666. Epub ahead of print. PMID: 37594200.

Reply: We respectfully indicate again, that DPS is not the above type of deficient perineum! It is a large bulging perineocele with descent.

Comemnt 5: There is no recommendation in the article about using native tissue repair in the primary surgery.

Reply: There is such a recommendation. The wide-bore polyester suture method is in fact a native perineal body repair with special attentiuon to suturing the DTP with wide-bore polyester sutures.

Comemnt 6: In Sweden, the used of artificial vaginal meshes has been highly

regulated and centralized due to the high extrusion rate of vaginal mesh materials.

Reply: We agree totally as regards vaginal meshes. We do not use them. That is why we propsed an artisan tape in surgeons who wish to continue with tapes. The wide-bore polyester method is actually a native tissue, but with one difference, the wide-bore polyester sutures have been calculated to produce suffucuent collagen to reinforce a weakened ligament, in this case, DTP.

Comemnt 7: It is particularly important to not promote a new method for general use before long term follow- up and randomized studies have proven a method involving potentially damaging materials superior to native tissue repair in combination with bowel regulating therapy.
For recurrences and failures it can be of value.

Reply: Thank you. Of course, we agree with this comment. We have clarified the conclusion further (red type)

Conclusion

In the absence of any concepts for pathogenesis and cure for DPS (1,2), it is reasonable for interested surgeons to more precisely restore the anatomy of the PB. The surgical dissection is not so different to thorough PB repair which dissects the rectum and vagina from the PB and approximates its displaced components. Identifying the DTPs, shortening and reinforcing them with a tape or with No 2 polyester sutures creates neocollagen to reinforce the suspensory ligaments of the PB. . If the addition of the polyester suturing of DPS to standard PB repair is successful, it will not be so difficult for experienced vaginal surgeons to add this small step to their technique. Though promising, only long-term results can determine the effectiveness of this innovation.