



Obturator Neuralgia: Complete Resolution after Laparoscopic Retropubic Sling Removal: A Report of 2 Cases

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Abstract

Background: Groin pain has been reported more frequently with transobturator mesh tape slings (TOT) compared to retropubic mesh tape slings (RP) secondary to the position of the mesh in the groin relative to the obturator nerve. However, if the mesh of a RP sling is placed on or near the region of the obturator neurovascular bundle in the retropubic space, the potential for similar groin pain does exist.

Cases: We report two cases of severe leg and groin pain following the placement of a RP mesh tape sling. Two premenopausal women suffered groin pain after RP sling insertion. The RP slings were successfully removed by a combined laparoscopic and vaginal approach and both patients' pain resolved.

Conclusion: Laparoscopic RP sling removal from the retropubic space is safe and should be consider in patient who has obturator neuralgia after RP sling insertion.

Keywords

Obturator neuralgia; Leg pain; Retropubic sling; Urinary incontinence; Mesh complication

Introduction

The retropubic tension-free vaginal tape mesh sling (RP sling) had a large impact on the treatment options for female SUI. The RP mesh tape sling has become a gold standard treatment of female SUI [1]; however, it is not without the possibility of complications, some of them severe. These complications can include bowel injury, major vascular injury, bladder perforation, hematoma, post-operative detrusor instability, obstructive symptoms, vaginal erosion, and pain [2]. Abdominal pain, dyspareunia, groin/leg pain and wound infection have also been documented but at a much lower rate [3] and therefore generally not considered to be an issue with this classification of slings. Groin and medial thigh pain is reported more frequently and typically associated with transobturator slings (TOT) given the anatomy of the needle passage and mesh placement through the groin. However, if the mesh of a RP sling is placed near or on the region of the obturator neurovascular bundle in the retropubic space, the potential for similar groin pain does exist. We report on

two cases of severe leg and groin pain following the placement of a RP mesh tape sling where the retropubic arm of the sling was found to be in direct contact with the obturator neurovascular bundle in the retropubic space on the side of the leg/thigh pain. The laparoscopic anatomic findings are described as well as our laparoscopic technique of removal of the mesh.

Case Reports

Case I

A 43 year-old female presented with painful intercourse and groin pain on the right side only one year following mesh RP sling placement. She had undergone a robotic-assisted laparoscopic hysterectomy with bilateral salpingo-oophorectomy and retropubic (Advantage Boston Scientific[®], MA, USA) sling. Immediately after the surgery she felt a pop in her right groin and pubic area while moving onto the hospital bed. She was then unable to stand, adduct, or walk with her normal gait due to the pain. Her symptoms slowly improved, but she still suffered severe right leg pain. She admitted to hesitancy and straining with urination as well as pain in lower right abdomen, left sided pulling, dyspareunia and post-coital cramping for 2-3 days. She underwent a course of physical therapy which exacerbated the symptoms. On examination, the mesh sling could be palpated under tension bilaterally in the paraurethral region and when palpated caused extreme pain vaginally that radiated retropubically and down the right leg. This reproduced her pain she had on a daily basis as well with intercourse. The remainder of the pelvic exam was benign. Vaginally, in the paraurethral regions she complained of extreme pain in the right and left paraurethral regions. Uroflow showed delayed emptying with fractionated voiding. However she had a normal post void residual of 0 ml. A pelvic CT scan was completed and was normal. Given the patient's history and reproduction of her symptoms on exam, we recommended a combined vaginal and laparoscopic removal of the RP mesh sling.

The patient was consented prior to the surgical intervention. With the patient under general anesthesia, a sub urethral incision was made; the vaginal portion of the sling identified, dissected away from the urethra and cut in the middle. Each arm was then dissected up towards the pubocervical fascia and clamped for later identification. Laparoscopically, the space of retzius was entered transperitoneally and dissected until the arms of the mesh were identified in the retropubic space. The left arm was found to be in the appropriate position, thus entering the space through the pubocervical fascia paraurethrally and running along the posterior aspect of the pubic ramus just to the left of midline and then exiting through the abdominal wall fascia. This arm was cut at the entry into the abdominal wall and then dissected free off of the pubic bone and down to meet the vaginal dissection and the entire left arm then removed through the vagina. The superior aspect of the right arm was then identified entering the abdominal wall fascia, very lateral, above the obturator canal. It was followed down over the pubic bone; however, it could not be identified paraurethrally as it was found to be embedded laterally in the obturator internus muscle (Figure 1). The mesh was then dissected away from the abdominal wall and very carefully dissected down towards the obturator canal. At this point the mesh was found to actually going through the obturator neurovascular bundle itself.

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Below this area the mesh could be identified entering the obturator internus muscle and was then dissected down towards the previous vaginal dissection. The mesh arm was cut at this point and dissected free back up towards the obturator neurovascular bundle. Due to the close proximity of the mesh to the obturator nerve, the tension on the mesh was released and a small piece of the mesh left behind on the nerve. A neurosurgical consult was obtained intra-operatively and they recommended to not trying to remove the mesh behind the nerve itself. Therefore, the mesh above and below the nerve was removed as well as the vaginal portion of the arm on this side with a small piece left behind in the obturator internus secondary to it being deeply embedded in the muscle. At 12 week follow-up the patient was still experiencing nocturia and slight urge incontinence, however she denied any urinary hesitancy, straining or stress incontinence. The pain she was experiencing in her abdomen, vagina and with intercourse had all resolved.

Case II

A 52-year-old female came to the office complaining of pain following retropubic (Advantage, Boston Scientific, MA, USA) sling that was placed for stress urinary incontinence five years prior. She reported no improvement in her SUI symptoms and complained of dyspareunia as well as pain in the right groin, left lower quadrant, right lower quadrants, and low back pain. She described the pain as cramping and it was exacerbated with any physical activity. She rated her pain as 10/10 on visual analog scale. She also suffered recurrent urinary tract infections, urinary obstructive symptoms, slow intermittent stream, and incomplete emptying of the bladder since the sling placement. She did not experience dyspareunia prior to surgery, but after the surgery dyspareunia occurred with every attempt at sexual intercourse. Vaginal examination and palpation of the mesh sling revealed reproduction of the pain she had on a daily basis. Given the patient's history and the exam, we recommended vaginal and laparoscopic removal of the RP sling. The risks and benefits were discussed and the patient decided to proceed with the surgery.

Under general anesthesia, the vaginal portion of the sling was located after suburethral incision and it was noted that there was more tension on the right than the left. Laparoscopically, the arms of the sling were located in the retropubic space as they entered the abdominal wall fascia. The space of retzius was entered transperitoneally and dissected until the arms of the mesh were identified in the retropubic space. The right arm was isolated, incised at the abdominal wall and was completely dissected off the pubic bone and down through the pubocervical fascia and removed in its entirety. The left arm of the sling was identified and cut at the level of the abdominal wall and dissected down towards obturator neurovascular bundle. At this point, it was found to be grown into the neurovascular bundle therefore the portion that was attached to the bundle was left intact and the mesh removed above the nerve. The remaining portion of the sling just below the nerve was dissected down towards the vaginal portion and removed in its entirety. At 7 week follow-up, she noted that she was still having nocturia but was no longer experiencing any pain or dyspareunia. She felt that the surgery was a success and her exam was found to be normal without any pain on vaginal exam.

Discussion

The retropubic (RP) tension-free mesh tape sling has become the gold standard for the treatment of SUI since its introduction in 1996. Although it can be performed on an outpatient basis it, and is minimally invasive, it can be associated with risks and rare

complications such as new onset abdominal pain, dyspareunia and leg or thigh pain depending on the position and location of the mesh in relation to the obturator nerve. The above the cases demonstrate an example of uncommon adverse outcome to RP mesh placement.

Groin and leg pain has been associated with TOT slings and is a known risk of the procedure [4]. Given the position of where the TOT mesh exits the groin, the risk of groin pain seems obvious and has been found to be an issue in a fair percentage of patients. Retropubic slings are known to carry the rare risk of abdominal complications such as pain if the mesh contracts or pulls too tightly on the abdominal wall, however, thigh/groin pain is not typically considered a risk given the placement of the mesh is abdominally and not in the groin. However, if the RP mesh is not placed properly and injures or irritates the obturator nerve during placement or healing, pain in the inner thigh/groin region can develop. In a study of the anatomic placement of the RP mesh sling, the distance between the trochar placement and pubic vessels, bladder, external iliac and obturator vessels/nerve is only a few centimeters. During placement of the RP sling care must be taken to maintain the trochar in "zone of safety" (Figure 2) [5] which is in the midline and hugging the back of the pubic ramus prior to exiting the abdominal wall. If the needle deviates laterally, the mesh could be placed in the obturator internus muscle or in close proximity to the obturator nerve and could potentially cause debilitating groin/thigh pain.

In the reported cases, both patients presented with vaginal pain, dyspareunia, abdominal pain as well as unilateral leg and thigh pain. Their pain was reproduced with palpation of the mesh sling and in both cases the mesh was felt to be under tension and contracted. Given these findings, we recommended removal of the mesh via a combined vaginal and abdominal approach, which we have previously reported the technique [6,7]. In both cases the mesh on the side of the leg pain was found to be embedded into the obturator internus muscle and had also grown into the neurovascular bundle secondary to the inflammatory reaction around the mesh itself. In both cases the decision was made to release the tension of the mesh on the nerve by removing all the mesh above and below the nerve but leaving a small piece of mesh on the nerve itself, as there was inherent high risk of causing further nerve damage. Ultimately, both patients' leg and thigh pain resolved after surgery, therefore it was most likely the tension of the mesh on the nerve and/or the muscle causing the symptoms. The patients' abdominal pain also resolved after removal of the mesh from the retropubic space, therefore this pain was most likely due to tension or contraction of the mesh pulling on the abdominal wall. There have been reports of patient's suffering from vaginal pain, dyspareunia and/or obstructive symptoms and partial removal of the sling through a vaginal approach alone led to resolution of those symptoms [8].

However, as in these cases, if the patient suffers from thigh/leg pain and/or abdominal pain consideration needs to be given to removal of the retropubic portion of the mesh in addition to the vaginal portion. The retropubic portion of a RP mesh sling can be completed laparoscopically by skilled surgeons as described in the current report. Following removal, the patient may still require pelvic floor physical therapy, treatment of urge symptoms and may eventually need further treatment for SUI as these symptoms may return with removal of the sling.

Consent

Written informed consent was obtained from the patients for publication of this case report and any accompanying images.

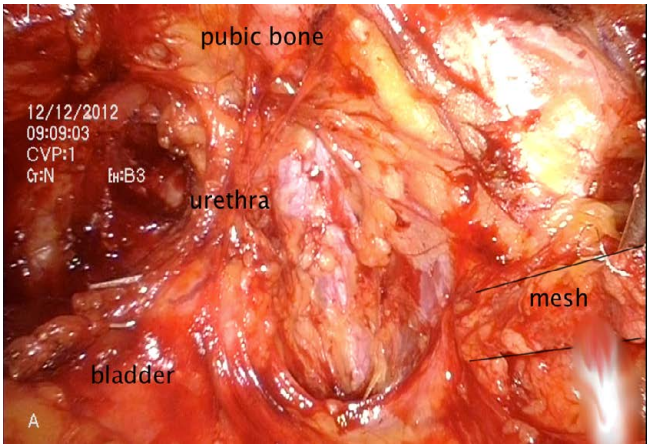


Figure 1: Laparoscopic view demonstrated the right arm of RP sling embedded into the obturator internus muscle.

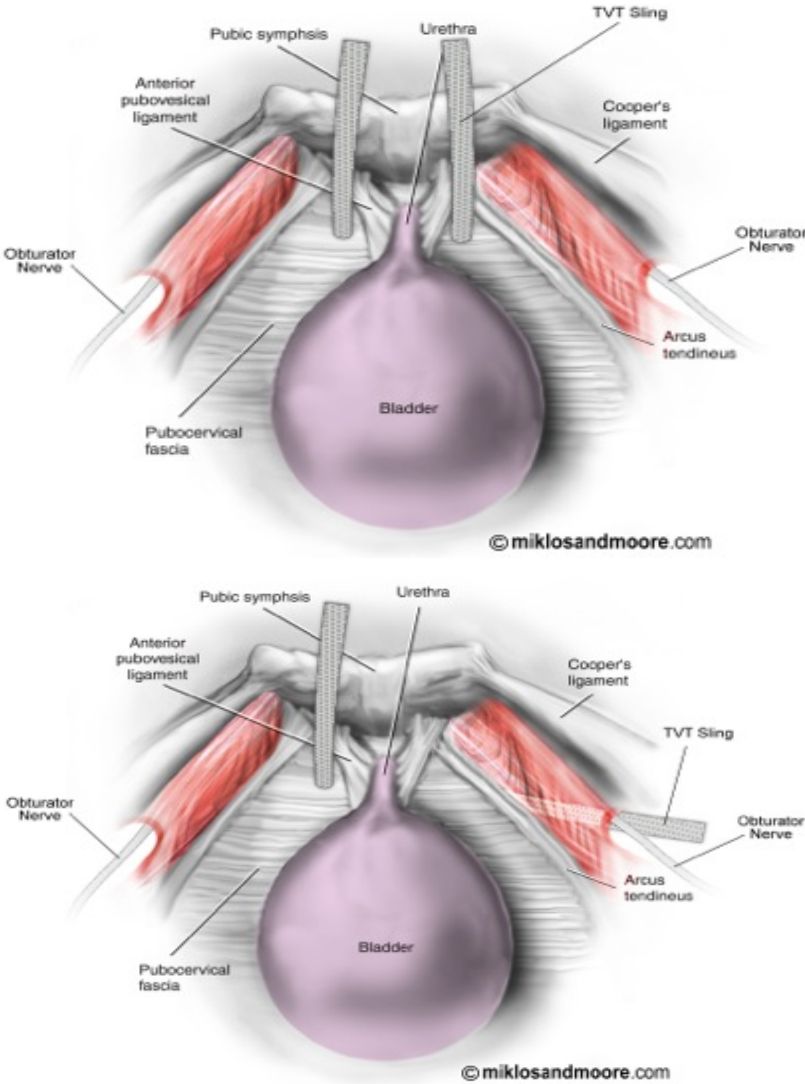


Figure 2: The relationship of retropubic (RP) sling to the vascular anatomy of the anterior abdominal wall and retropubic space (Figure 2a). RP sling in these case studies was demonstrated (Figure 2b).

Conflicts of Interest

None

Acknowledgement

Surgical video was presented at the 43th AAGL Global Congress and received the "Golden Laparoscope Award" best surgical video in Vancouver, BC.

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