W32: Management of Complications of Mesh Prolapse and Sling Surgery - Demonstration Through Surgical Video Cases

Workshop Chair: Howard Goldman, United States
09 October 2015 11:00 - 12:30

Start	End	Topic	Speakers
11:00	11:30	Management of synthetic sling complications	Sandip Vasavada
11:30	11:45	Questions	All
11:45	12:15	Management of prolapse mesh complications	Howard Goldman
12:15	12:30	Questions	All

Aims of course/workshop

Many surgeons learn best by observing expert surgeons.

Given the number of mesh sling and prolapse repair cases performed, experts are confronted with complications of such cases. Most patients with such complications who are appropriately treated have resolution of symptoms. The critical point is that those surgeons dealing with such cases have the expertise to successfully manage them. This course will review the management of such complications with a focus on using surgical video demonstrations to specifically review the surgical techniques necessary for successful outcomes.

Learning Objectives

1. Obtain expertise in managing mesh sling and prolapse repair complications

2. Understand the evaluation and management of women with mesh complications

Managing complications of Prolapse and Sling Mesh – Case Management Examples Utilizing Surgical Videos

Howard B Goldman MD
Sandip P Vasavada MD

Center for Female Pelvic Medicine and Reconstructive Surgery
Glickman Urologic and Kidney Institute
Lerner College of Medicine
Cleveland Clinic
Cleveland, Ohio
USA

This course details the management of different types of sling and prolapse mesh complications utilizing surgical videos and case discussion. The following complications will be reviewed via such a format.

Transvaginal prolapse mesh extrusion
Mesh bladder perforation
Mesh arm/stone in bladder
Mesh arm in bladder around ureter
Sling incision
Single port mesh removal
Urethral damage due to sling - Neourethra formation
Thigh pain due to transobturator mesh arm – thigh dissection

Transvaginal prolapse mesh extrusion:

From 3-15% of transvaginal prolapse meshes may extrude vaginally. When asymptomatic some may be left alone. Vaginal estrogen cream has been reported to allow reepitheliazation in some cases. If symptomatic, and very small, excision may be attempted in the office. In other cases excision should be done in the operating room. The area of extrusion is carefully identified and lidocaine with epinephrine is injected under the vaginal skin around the extrusion. Typically a small cuff of skin is excised after which vaginal skin flaps are developed using sharp and blunt dissection in all direction for at least 1 cm. Finally, the mesh is incised at one side and then the underlying tissue (bladder/rectum) is carefully dissected off of the undersurface of the mesh taking great care to stay right on the mesh and leave all other underlying tissue intact. Enough mesh is removed so that there will be no mesh under the skin closure.

Mesh perforation of the bladder:

If a mesh arm or sling has traversed the bladder removal is usually necessary. Some advocate excision with laser. If that is attempted care must be taken to cut deep to the musosa, into the muscle so that no mesh filaments are able to work their way back into the bladder. Oftentimes this approach has to be repeated.

Our preference is to surgically explore and remove the mesh completely within the bladder and bladder wall. For mesh arms in the lower half of the bladder this can usually be done transvaginally. A vaginal wall flap is made whose base is at the site of bladder entry. This is to prevent later overlapping suture lines. If the mesh is near the ureter an open ended ureteral catheter is placed. The sling/mesh is then located either medially or laterally (in the case of one perforating the obturator internus muscle) and carefully dissected into and then back out of the bladder. The bladder incision is closed in multiple layers and the vaginal wall flap closed over that. A catheter is left in place for 1-2 weeks.

If there is a stone on the mesh it often will come out intact with the mesh. If it is very large it can be lasered at the same setting prior to the mesh dissection.

Some perforations in the anterior bladder may be removed transvaginally. However, more often an open/robotic/laparoscopic approach is needed. A simple approach is via a Pfannenstiel incision where the perforating mesh is located where it enters and exits the bladder, the bladder is then opened, the entry sites are cored out, the mesh is removed, the entry sites are closed and the bladder is closed.

Occasionally the mesh arm may be very close to the ureter or may even wrap around the intramural ureter. A careful transvaginal approach can typically be used to dissect around the ureter.

In some instances a portion or entire piece of mesh placed for prolapse may end up in the bladder. A vaginal flap is developed and if the mesh can be identified the superficial vaginal wall is dissected off of it. The mesh is then transected in the midline and the bladder tissues deep to it are dissected free of the mesh. The mesh pieces are cut as laterally as possible after which the cystotomy is closed in multiple layers and the flap is closed. In some cases when the entire mesh is in the bladder the bladder must be bivalved to get to the mesh. A similar procedure is then followed. Bilateral stents are typically placed in these cases. A catheter is left to drainage for 2 weeks and a cystogram is obtained prior to removal.

Sling incision:

Sling incision represents a fairly straightforward way to manage sling complications. This may be necessary if a patient has de novo retention after a sling or new onset irritative or obstructive voiding symptoms. The decision to incise a sling has clearly changed to more of a temporal relationship to the timing of the sling as opposed to any other factors including urodynamics and post-void residual testing. In other words, if a patient did not have symptoms before the sling and only after the sling, the sling is the resultant cause for their "problems".

A sling incision is performed by opening up the mid urethral incision, exposing the sling adjacent to the urethra and passing a clamp behind it to isolate then incise the sling. One must take caution not to damage the urethra when isolating the sling thus some advise to pass the clamp laterally adjacent to the urethra. A rigid scope or scope sheath in the urethra may help more readily identify the sling on palpation. Care should be taken to incise the entire sling and avoid missing any potentially obstructing remnant midline fibers.

Single-Port Sling Excision:

The use of single port technology has allowed minimally invasive intervention to help with sling excisions. When a sling is calcified and or otherwise perforated into the bladder, definitive excision should be undertaken in most circumstances. Single port access either directly into the bladder or with a combined intra and extravesical approach can allow definitive excision of the sling and adjacent sling. It remains important to allow a margin of sling to be excised deep to the mucosa (in the muscle layer) to avoid another segment perforation. Bladder repair of the entry sites can be challenging with this modality and requires specialized skills. Other forms of minimally invasive surgery (laparoscopy and robotics) can be undertaken as well for extravesical management of the sling.

Urethral Perforation:

Slings placed either inadvertently through the urethra or one that is under excess tension may result in a urethral perforation. The surgical procedure may be better served by initially starting with an inverted U incision to allow flap coverage of the urethra at the end. Once the flap is taken down, paraurethral exposure is gained to allow palpation of the sling ends (may require entry into the retropubic space). Usually one side is cut and then sometimes the sling can be pulled out of the other side. If this is not an option one may need to directly open the urethra. By placing the scope at the level of the perforation one can palpate and see (the light) the area to incise. One must be sure to excise the perforated sling completely as to not leave any mesh remnants. Regardless of which approach is used to remove the sling, closure of the perforations and pressure testing should be performed to assure integrity to the urethra. A catheter should be left in for 2 weeks postoperatively.

Urethral destruction following sling:

Most sling excision and repairs are fairly straightforward; however, some can completely transect and damage the urethra. One must consider urethroplasty techniques to surgically re-establish continuity to the urethra. The adjunctive use of a Martius flap should be strongly considered as the urethra is a high pressure zone and this flap placement may minimize fistula formation.

Severe thigh pain after transobturator sling:

Temporary thigh pain after a transobturator sling is not uncommon. It typically resolves within a few days. On very rare occasions severe thigh pain can persist and if unresolved after conservative management a thigh dissection to identify and remove the thigh portion of the mesh may be necessary.

An incision is made about one cm lateral to the thigh crease. On rare occasions the sling may be identified in the subcutaneous tissues and then followed through the muscles to the obturator foramen. Typically, the sling is not evident until a more complete dissection has been performed. We typically detach the gracilis and adductor brevis from the pubis to allow for complete inspection in the area of the obturator externus. The adductor longus tendon is the superior margin and we do not incise that. On occasion though the sling may be found above or in the tendon. Once the sling is identified (often via blunt palpation) it is dissected and followed out to the subcutaneous tissues and back to the obturator membrane allowing for complete removal. The skin and deeper layers are closed and a closed suction drain is left in place.

References

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ICS 2015 Montreal

Notes