

## Persistent Sinus Tract Following Abdominal Sacrocolpopexy With Synthetic Mesh

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**Introduction:** Synthetic mesh has been commonly used in abdominal sacrocolpopexy procedures. Many complications from this procedure have been reported.

**Case:** A woman developed a persistent sinus tract after abdominal sacrocolpopexy with synthetic mesh. Standard approaches using excision of mesh, mobilization, advancement, and interrupted closure of vaginal mucosa and underlying fascia failed to cure the patient. Laparotomy revealed a persistent retroperitoneal sinus tract, which was completely excised. Cadaveric dermal allograft was used in the repair as interposition tissue and for resuspension of the vaginal vault.

**Conclusion:** Cadaveric dermal allograft may provide a viable alternative to synthetic mesh for abdominal sacrocolpopexy and interposition tissue in fistula repairs.

A 60-year-old woman underwent total abdominal hysterectomy, bilateral salpingo-oophorectomy, abdominal sacrocolpopexy with polyester mesh (Mersilene; Ethicon, Somerville, NJ), Burch retropubic urethropexy, and posterior colporrhaphy, in November 1998 for uterine procidentia and stress urinary incontinence. Initial surgery and recovery were without complication. Results of the pathology report showed normal tissues.

The patient presented 6 months later complaining of recent onset of vaginal spotting and discharge. Vaginal vault examination revealed a 0.5-cm portion of Mersilene mesh that had eroded through the vaginal mucosa.

In July 1999, the patient underwent vaginal excision of eroded mesh with closure of vaginal mucosa using interrupted delayed absorbable suture under minimal

tension. Pelvic floor support remained excellent postoperatively. The patient continued to complain of daily vaginal discharge with occasional spotting. Vaginal estrogen cream was continued beyond the 6-week postoperative visit. Examination of the right vaginal apex revealed a small dimple approximately 0.5 cm in diameter. No mesh was visible.

During the next 6 months, the patient underwent two additional vaginal approach attempts at opening the vaginal cuff, resection of visible mesh, and closure of vaginal tissue. All four suture sites, originally placed with O braided and coated polyester/polybuterate suture (Ethibond; Ethicon, Somerville, NJ) through Mersilene mesh, were excised. The vagina was closed with interrupted delayed absorbable suture after mobilization of mucosa and underlying fascia. The vagina appeared well healed postoperatively.

Within 3 months however, the patient complained once again of recurrent vaginal discharge with intermittent spotting. Examination of the right vaginal apex again

Received February 5, 2001; accepted May 14, 2001.

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revealed a 0.5-cm dimple that could be probed with a sterile cotton swab (Q-Tip; Chesebrough-Pond's USA, Englewood Cliffs, NJ). No mesh or suture was visible.

Exploratory laparotomy was performed that revealed a 4.5-cm-long sinus tract, approximately 1.5 cm in diameter, from the right vaginal apex to the retroperitoneal aspect of the presacral space. A probe was passed through the vaginal apex dimple along the fistula tract all the way to the sacrum. Extensive lysis of adhesions, including right ureterolysis, was performed to free up the tract. The sinus tract was then opened longitudinally revealing the remaining polyester mesh (Mersilene; Ethicon, Somerville, NJ), which was removed. The entire sinus tract was excised. The vagina was closed in 2 layers with interrupted delayed absorbable suture. A 2.0 × 2.0-cm patch using an acellular allograft (Dura-derm; CR Bard, Cranston, RI) was sutured over the fistula closure. An additional 2.0 × 10.0-cm allograft was then placed for resuspension of the vaginal vault to the anterior longitudinal ligament and periosteum over the first sacral vertebra.

The pathology report confirmed a fistula tract lined with squamous epithelium with areas of ulceration, and acute and chronic inflammation. The patient has had no further problems with vaginal discharge or spotting and excellent anatomic support is present.

## Discussion

Abdominal sacrocolpopexy using the abdominal approach has become established as the preferred procedure for the surgical treatment of uterine procidentia or posthysterectomy vault prolapse, with reported success rates greater than 90%.<sup>1</sup> Postoperative complications associated with this procedure include infection; ileus; severe hemorrhage; injury to bowel, bladder, or ureter; sacral osteomyelitis; and mesh and suture erosion.<sup>2</sup> Mesh and suture erosion are primarily seen after suspension using synthetic graft materials.<sup>3</sup>

The risk of mesh or suture erosion after abdominal sacrocolpopexy is generally considered to be in the range of 3% to 4%. Snyder and Krantz<sup>1</sup> reported an erosion rate of 2.7% (4/147). Timmons and Addison<sup>4</sup> reported a mesh erosion rate of 3.3% in their series of 375 colpopexy procedures performed from 1972 to 1995. Kohli et al<sup>5</sup> reported a rate of 8.8% (5/57) when synthetic mesh was used.

When mesh erosion occurs vaginal excision of visible mesh with excision of surrounding granulation tissue, mobilization of fascia and mucosa, and layered closure is successful in the majority of cases. If the problem persists or recurs, the possibility of a persistent sinus tract should be considered. This complication usually requires an abdominal procedure to remove the entire initial

synthetic graft. Most patients will continue to have adequate vault support after excision of all mesh. In the series reported by Snyder and Krantz<sup>1</sup> however, one in four patients had recurrent vaginal prolapse after removal of the graft. If evidence of infection, suppuration, or widespread inflammation of surrounding tissues is present, resuspension of the vaginal vault with placement of new graft material should be avoided.

In this case report, the sinus tract was matured, the dissection required to completely excise the graft and the entire sinus tract was extensive, and the surrounding tissue did not appear to be infected or inflammatory. Intraoperatively after the dissection, there appeared to be excess descent of the vault apex, and the decision was made to resuspend the adjacent pubocervical fascia and rectovaginal fascia. Whereas this patient did well, further experience is needed before this practice can be recommended.

When performing the abdominal sacrocolpopexy procedure, identification and approximation of both pubocervical and rectovaginal fascia is essential to achieve a high long-term success rate with a low incidence of erosion. If an apical fascial defect is present but goes unrecognized and unrepaired, the graft material, which is sutured to vaginal mucosa and peritoneum only, may erode and recurrence of enterocele is more likely.

This patient developed a less common complication of abdominal sacrocolpopexy, a persistent sinus tract, which did not resolve after vaginal excision of all visible mesh with mobilization and layered closure of apical tissue. Availability of cadaveric dermal derivative allografts may play an increasingly significant role in reconstructive pelvic surgery, minimizing the risks of erosion and other complications from synthetic mesh grafts. Dermal allograft has also been used in the repair of a recurrent and complicated rectovaginal fistula, demonstrating its use as an interposition tissue.<sup>6</sup> Further experience with cadaveric dermal allografts is needed to further elucidate its role in reconstructive pelvic surgery.

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