A novel approach to identification and excision of a persistent sinus tract following a rectus fascial sling: A case report

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ABSTRACT

Background: While Gore-Tex® sutures have excellent handling and cause minimal fibroblast activity and a less inflammatory response compared with other materials, they carry a risk of persistent sinus tract formation.

Case: A patient underwent an autologous rectus fascial sling using Gore-Tex® and we describe a novel technique for identification and excision of the sinus tract.

Conclusion: Preoperative imaging and staining of the sinus tract with methylene blue can aid in successful identification of the tract during surgery and may improve rates of successful treatment.

1. Introduction

Autologous rectus fascial slings are used to treat stress urinary incontinence in patients who are not a good candidate for or who decline treatment with a synthetic midurethral sling. While rectus fascial slings do not use synthetic mesh, they frequently require permanent sutures. In North America, Gore-Tex® sutures (W. L. Gore & Associates, Newark, DE), which are permanent microporous, monofilament sutures, are commonly used for autologous fascial slings. While Gore-Tex® sutures have excellent handling and cause minimal fibroblast activity and less inflammatory response compared with other materials, they carry a risk of persistent sinus tract formation. Sinus tract formation is often overlooked and can be difficult to diagnose but should be on the differential for a patient with poor healing or persistent drainage after surgery. Sinus tracts are more commonly reported following sacrocolpopexy procedures [1–4] and, to date, there are no reports in the literature of sinus tract formation following an autologous rectus fascial sling. We present a patient with a sinus tract following an autologous rectus fascial sling and describe a novel technique for identification and excision of the sinus tract.

2. Case Presentation

The patient was a 52-year-old woman with recurrent stress urinary incontinence and a mesh exposure who had failed two prior synthetic midurethral sling procedures and desired repeat surgical management. Given her prior failure with a synthetic midurethral sling the patient preferred an autologous rectus fascial sling. The fascial sling procedure was uncomplicated and utilized a 2 cm × 8 cm segment of autologous rectus fascia which was placed suburethrally and attached to the rectus fascia with CV-2 Gore-Tex® sutures.

Around four months postoperatively, she reported a firm tender induration on the lateral aspect of the abdominal incision and on exam the incision appeared slightly edematous with some mild erythema. While the cultures from the area were negative, she was started on empiric antibiotics. Given minimal improvement, the incision was subsequently opened, the tissue debrided, and the wound packed. Despite two months of wound packing, the incision failed to close and the decision was made to return to the operating room for wound exploration and excision of the sinus tract. The incision was opened and debrided; however, the sinus tract could not be clearly identified and the incision was subsequently closed in multiple layers.

While she initially did well postoperatively, approximately two weeks later the patient again reported discharge form the lateral aspect of her abdominal incision. The decision was therefore made to return to the operating room. Given our difficulty identifying the sinus tract during the prior procedure, the patient had preoperative imaging with both a fistulogram (Fig. 1) and a CT scan of the abdomen/pelvis (Fig. 2),

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which aided in surgical planning. Since we had a high index of suspicion that she had developed a sinus tract from her Gore-Tex® suture, and given our prior inability to identify a sinus tract despite extensive intraoperative exploration, a dilute mixture of methylene blue was injected into the incision using an angiocatheter. The methylene blue allowed us to identify the tract down to the level of the fascia, where it was found to be in continuity with the Gore-Tex sutures® (Fig. 3). The Gore-Tex® sutures were easily removed. Identification of the complete sinus tract allowed for successful excision of the tract. The Gore-Tex® sutures on the contralateral side were left in place. After a multi-layer closure, the wound subsequently healed without difficulty and the patient reported complete continence in the six months of available clinical follow-up. The patient gave consent to publication of this report.

3. Discussion

Sinus tract formation can occur after pelvic reconstructive surgery that involves placement of a permanent material and there should be a high index of suspicion for a sinus tract even if surgery does not involve placement of a synthetic mesh. Typically for complete healing, excision of the sinus tract is necessary [3,5]. Sinus tracts, however, can be tortuous and difficult to identify intraoperatively secondary to tissue edema. Preoperative imaging and staining of the sinus tract with methylene blue can aid in successful identification of the tract during surgery and may improve rates of successful treatment.

Contributors

William D. Winkelman was the primary author of the manuscript, and the assistant surgeon in the case.

Jacques P. Sasson helped edit the digital photos for submission and was the radiologist in the case.

Eman Elkadry contributed to revision of the manuscript and was the lead surgeon involved in the case.

Conflict of interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Patient consent

Obtained.

Provenance and peer review

This case report was peer reviewed.
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