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**Aditi Siddharth, Rufus Cartwright,
Simon Jackson & Natalia Price**

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Laparoscopic complete sacrocolpopexy mesh removal for right-sided gluteal pain and recurrent mesh erosion

Aditi Siddharth¹ · Rufus Cartwright¹ · Simon Jackson¹ · Natalia Price¹

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Abstract

Aim of video The aim was to demonstrate laparoscopic complete excision of sacrocolpopexy mesh from a 65-year-old woman who had presented with delayed onset of persistent right-sided gluteal pain.

Method The patient was referred to our unit, having undergone a laparoscopic sacrocolpopexy for vault prolapse 7 years earlier, with a type 1 polypropylene mesh. Four years after the primary surgery, she first noticed symptoms of spontaneous vaginal pain together with deep dyspareunia, and right-sided gluteal pain. Clinical examination revealed mesh erosion at the vaginal vault. This was managed at her local hospital, with excision of the small exposed portion of the mesh and over sewing, from a vaginal approach. She continued to be symptomatic following this procedure. When her symptoms still failed to improve 3 years later, a tertiary referral was made to our unit. At laparoscopy, minimal adhesions between the bowel and the mesh were noted and divided. After carefully dissecting the right ureter and reflecting the bladder, the entire sacrocolpopexy mesh was removed with its ProTack fasteners. The entire specimen was retrieved in one piece through the open vault and the vagina was sutured with 2.0 <monocryl laparoscopically. Surgical steps begin with laparoscopic survey of the anatomy. Adhesions need to be released carefully, after developing proper surgical planes. On follow-up in clinic 12 weeks later, there was complete resolution of her symptoms, with minimal vault descent.

Conclusion This video demonstrates the steps needed to undertake complete laparoscopic sacrocolpopexy mesh excision, which should be feasible for skilled laparoscopists. This approach has advantages over the open approach, with good access and visualisation of the entire course of the mesh, and more rapid recovery for the patient.

Keywords Laparoscopic sacrocolpopexy · Mesh erosion · Chronic pelvic pain · Mesh excision · Mesh complications

Aim of the video/introduction

To demonstrate laparoscopic complete excision of sacrocolpopexy mesh from a 65-year-old woman who had presented with delayed onset of persistent right-sided gluteal pain. Both open and laparoscopic sacrocolpopexy are associated with durable anatomical correction and high satisfaction rates for vault prolapse. However, mesh exposure is the most common complication, with an incidence of 3–6% at 1–2 years, which continues

to increase with time [1]. Vaginal pain is less common and lower back pain, due to osteomyelitis, is much rarer [2]. Optimal management strategies for mesh erosion and pelvic pain are unclear. Partial excision of eroded mesh via a vaginal approach is the usual recommended initial approach [3]. Recurrent mesh exposures may be better managed with complete excision, although this approach carries a risk of higher blood loss and morbidity [3]. With increasing concern about pelvic mesh implants, more patients now opt for complete excision.

Electronic supplementary material The online version of this article (<https://doi.org/10.1007/s00192-019-04088-4>) contains supplementary material. This video is also available to watch on <http://link.springer.com/>. Please search for this article by the article title or DOI number, and on the article page click on 'Supplementary Material'.

✉ Natalia Price
Natalia.Price@ouh.nhs.uk

¹ John Radcliffe Hospital, Headley Way, Headington, Oxford OX3 9DU, UK

Method

A 65-year-old woman was referred to our unit with persistent right-sided gluteal pain, having undergone a laparoscopic sacrocolpopexy for vault prolapse 7 years earlier, with a type 1 polypropylene mesh. There had been no early complications following the primary surgery, with initially good objective and subjective outcomes from the procedure.

Four years after the primary surgery, she first noticed symptoms of spontaneous vaginal pain together with deep dyspareunia, and right-sided gluteal pain. She had no bowel or bladder symptoms.

Clinical examination revealed mesh erosion at the vaginal vault. This was managed at her local hospital, with an examination under anaesthetic, with excision of the small exposed portion of the mesh and over-sewing, from a vaginal approach. She continued to be symptomatic following this procedure, with a major impact on her sexual function and overall quality of life. She received advice from a specialist pain team, and used a combination of neuropathic pain medications and opioids. When her symptoms still failed to improve 3 years later, a tertiary referral was made to our unit.

Magnetic resonance imaging of the pelvis was performed using no contrast material. Axial, coronal and sagittal views were analysed in T1, T1 fat-saturated and T2 sequences using a larger field of view. There was a soft-tissue abnormality at the vaginal vault of intermediate signal intensity on the T2-weighted image. Low-signal intensity strands of tissue with small bowel distortion suggested the formation of adhesions. No bowel obstruction was identified. A small pelvic collection was seen adjacent to the vaginal vault. There was no evidence of osteomyelitis. The thickening of the vaginal vault, and soft-tissue changes along the course of the mesh with a tract within it, suggested an infection along the course of the mesh. Outpatient cystourethroscopy demonstrated no lower urinary tract mesh erosion. Her case was discussed at our regional multidisciplinary team meeting, and the patient was offered examination under anaesthesia with laparoscopic assessment of the mesh, with a view to complete excision.

At laparoscopy, minimal adhesions between the bowel and the mesh were noted and divided. The mesh was noted to be attached to the sacrum at S3/4, a low position compared with our usual practice. After carefully dissecting the right ureter and reflecting the bladder, the entire sacrocolpopexy mesh was removed with its ProTack fasteners. The mesh was noted to be clumped together at the vaginal vault. The entire specimen was retrieved in one piece through the open vault and the vagina was sutured with 2.0 Monocryl laparoscopically.

Surgical steps began with laparoscopic survey of the anatomy. The anatomy can be distorted by tissue fibrosis and scar tissue formation, putting vital organs at risk of injury. Such organs include bladder, rectum and vagina caudally; the common iliac vein and middle sacral vessels cephalad; and the ureters at the level of the vaginal cuff angles [4]. Adhesions need to be released carefully, after developing proper surgical planes. To ensure adequate visualisation we exposed the mesh entirely before proceeding with excision of the mesh with the ProTack fasteners up to its attachment at the vaginal cuff. We do not routinely use bowel preparation or ureteric stents.

Results

The operative time for this procedure was 56 min, with minimal blood loss. We did not leave a drain, as there was adequate haemostasis at the end of the procedure. The patient received one dose of ceftriaxone, a broad-spectrum cephalosporin, pre-operatively. There were no intra-operative or immediate postoperative complications. She was discharged on postoperative day 2 with a 7-day course of oral co-amoxiclav.

On follow-up in clinic 12 weeks later, there was complete resolution of her symptoms, with minimal vault descent.

Histology of the specimen showed focal abscess formation, confirming infection along the course of the mesh. The Gram stain and culture report were, however, negative.

Conclusion

Patients may present with complications many years after their primary sacrocolpopexy surgery. One of the potential causes of pelvic pain and dyspareunia is infection at the site of mesh attachment to vaginal vault. Mesh-related infection is uncommon, with an incidence of 0.3% after laparoscopic sacrocolpopexy [5]. Infection may contribute to vaginal mesh exposure. Simple excision of the mesh vaginally and re-suturing the vagina carries a high recurrence of erosion, perhaps because of persistent microbial contamination of the mesh [6]. An earlier case series ($n = 31$) of patients who underwent mesh excision, by either a vaginal or open abdominal approach, suggests that a vaginal approach might carry a high risk of recurrent erosion [7]. A laparoscopic approach provides better exposure than an open approach, making it easy to visualise the entire course of the mesh, and the patient's recovery time is shorter.

During laparoscopic sacrocolpopexy the mesh is attached to the longitudinal ligament of the sacrum overlying the sacral promontory with ProTacks or other fasteners [8]. Our routine practice is to attach the mesh at L5/S1 level. Attachment at S3/S4 level, as with this patient, is less common, as there is a significant risk of haemorrhage [9] and in this case may have contributed to the pain.

Although this patient had minimal residual prolapse, recurrence of prolapse must be considered in counselling for mesh excision. We do not typically offer a repeat mesh insertion procedure at the same sitting, but other authors have recommended autologous fascial sacrocolpopexy during the same procedure [10]. Particularly where mesh infection is suspected, we feel it is important to delay any second procedure.

This video demonstrates the steps needed to undertake complete laparoscopic sacrocolpopexy mesh excision, which should be feasible for skilled laparoscopists. This approach has advantages over the open approach, with good access and visualisation of the entire course of the mesh, and more rapid recovery for the patient.

Compliance with ethical standards

Conflicts of interest None.

Consent Written informed consent was obtained from the patient for publication of this video article and any accompanying images.

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