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Rare complications after sacrospinous fixation surgery: Two cases of gluteal-cutaneous sinus formation

Ahmed Hamid JABBAR, Santhosh PUTHURAYA, Aethele KHUNDA

Clinic of Obstetrics and Gynaecology, North Tees and Hartlepool NHS Foundation Trust, Hardwick, United Kingdom

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ABSTRACT

Sacrospinous fixation (SSF) is a commonly used surgical procedure to treat advanced forms of prolapse. While generally considered low-risk, SSF can lead to complications, including rare sinus and or fistula formation. This report highlights two rare presentations of gluteal sinus formation and associated osteomyelitis years post-SSF, using ethibond (Ethicon Inc., Somerville, NJ, USA) sutures in both cases. The first patient is a 72-year-old woman who developed a right-sided gluteal-cutaneous sinus six years post-surgery, which resolved after suture removal and surgical treatment. The second, a 63-year-old woman, developed a chronic discharging sinus and osteomyelitis, which required a multidisciplinary approach. These cases highlight rare but serious SSF complications, particularly when using non-absorbable braided sutures like ethibond (Ethicon Inc., Somerville, NJ, USA). Similar cases reported in the literature suggest that these sutures may contribute to chronic inflammation, suture erosion, and sinus formation. Monofilament sutures may be a safer alternative, as they are less likely to act as a nidus for infection. Therefore, we recommend using monofilament sutures for SSF. Early recognition through imaging and prompt surgical management are crucial to achieving good outcomes. Research into suture material to achieve the best outcome is warranted.

Keywords: Pelvic organ prolapse; sacrospinous fixation; complications; fistula formation; osteomyelitis; ethibond suture; braided sutures

INTRODUCTION

Pelvic organs prolapse describes the descent of one or more vaginal compartments, leading to considerable physical and psychological symptoms.[1] This condition results from weakness in one or more vaginal compartments—specifically, the anterior, apical, or posterior sections of the vagina.[2] Sacrospinous fixation (SSF) is a recognised surgical intervention for the treatment of advanced pelvic organ prolapse, especially in instances of uterine or vaginal vault prolapse. The procedure aims to restore pelvic anatomy by securing the vaginal vault or cervix to the sacrospinous ligament, thereby effectively preventing further descent.[3]

SSF is a low-risk procedure with reasonable success rates.[4] However, like any operation, it is associated with a range of postoperative complications. The most common one is temporary buttock pain, which typically resolves conservatively, but occasionally become chronic. However, more serious complications, can include bleeding or haematoma formation

Address for Correspondence: Ahmed Hamid Jabbar, Clinic of Obstetrics and Gynaecology, North Tees and Hartlepool NHS Foundation Trust, Hardwick, United Kingdom
E-mail: ahmed.jabbar@nhs.net **ORCID ID:** orcid.org/0009-0003-9118-561X
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at the site of fixation, sciatic nerve damage causing radiating leg pain, and neurological impairments that may require exploration and removal of the sutures.[5]

Among the rarest and most severe complications are fistula and sinus formation, which may include gluteal-sacrospinous-vaginal fistulas and rectovaginal fistulas and gluteal sinus formation. Despite its extreme rarity, a limited number of cases have been reported in the literature.[6-14] This report highlights the importance of identifying these complications early and providing appropriate treatment. This report presents a rare gluteal-sacrospinous-vaginal formation and osteomyelitis that occurred years following sacrospinous ligament fixation.

CASE REPORTS

Case 1

The patient was a 72-year-old postmenopausal woman who presented with stage 3 uterine prolapse and stage 3 anterior wall prolapse, with pelvic organ prolapse-quantification (POP-Q) measurements as follows: Aa +2, Ba +2, Ap 0; Bp 0, C +3, D -2, GH 4; PB 3, TVL 10. She experienced significant vaginal bulge, soreness, and dryness but denied bladder, bowel, or sexual complaints. Different pessaries were tried but failed.

The patient underwent unilateral SSF with concurrent anterior colporrhaphy. Ethibond Excel sutures (Ethicon Inc., Somerville, NJ, USA) were placed using a Capio® SLIM device (Boston Scientific, Marlborough, MA, USA) between the right sacrospinous ligament and posterior surface of the cervix.

The posterior vaginal wall was closed with Vicryl® sutures (Ethicon Inc., Somerville, NJ, USA). The surgery achieved satisfactory cervical elevation without intraoperative complications. Her early recovery was uneventful, with significant symptom improvement. Follow-up visits at 3 months and 1 year revealed no complications.

Six years postoperatively, the patient presented with right buttock pain, intermittent swelling in the right buttock, and foul-smelling discharge. Examination revealed a discharging sinus (5 cm in depth) in the right buttock, while vaginal examination showed no signs of cellulitis.

Computed tomography (CT) imaging identified a right-sided pelvic tract extending from the posterior cervix to the right gluteal region (42×21 mm) with no bony destruction or significant muscle involvement. Bacterial cultures from swabs were negative.

Therefore, the patient underwent examination under anaesthesia, excision of the sinus tract, and removal of two ethibond Excel sutures (Ethicon Inc., Somerville, NJ, USA). The superficial part of the sinus tract was excised and the deep pat was curetted. The posterior vaginal wall was opened to access the ligament and to make sure there were no residual permanent suture. Postoperatively, she received 7 days of oral antibiotics and regular Aquacel dressing changes every 48 hours for 7 days.

Regular follow-ups observed progressive wound healing, leading to complete resolution of the sinus tract after 2 months. Long-term follow-up confirmed healing and the absence of recurrence of the sinus and the prolapse.

Case 2

The patient was a 63-year-old postmenopausal woman who patient presented with stage 4 uterine prolapse, stage 4 cystocele, and stage 1 rectocele, with POP-Q measurements as follows: Aa +3, Ba +5, C +5, GH 3, PB 3, TVL 8 cm, Ap -2, Bp -2, D -2. Her symptoms included urinary urgency, difficulty voiding, slow urinary stream, incomplete bladder evacuation, and a vaginal bulge associated with a sensation of prolapse.

The patient underwent unilateral SSF with concurrent anterior and posterior repair. Two permanent ethibond Excel sutures (Ethicon Inc., Somerville, NJ, USA) were placed using a Capio® SLIM device (Boston Scientific, Marlborough, MA, USA) between the right sacrospinous ligament and posterior surface of the cervix. The posterior vaginal wall was closed using PDS II sutures (Ethicon) and Vicryl® sutures (Ethicon Inc., Somerville, NJ, USA). She had an intraoperative anaphylactic reaction to anaesthesia during the surgery, but no surgical complications were recorded. The initial postoperative recovery was uneventful, and the patient was discharged after a two-day hospital stay. Her early recovery was uneventful, with significant symptom improvement. Follow-up visits at 3 months and 6 months revealed no complications.

Approximately four years following surgery, the patient began experiencing right hip pain and restricted mobility, necessitating the use of a walking stick. Later that year, she developed an abscess in the right buttock, which required surgical drainage. However, the incision site on the right buttock failed to heal, resulting in a chronic discharging sinus. Clinical examination revealed a discharging sinus in the lower right buttock along with vaginal stenosis. Swabs obtained from the sinus did not yield bacterial growth. Imaging (CT and magnetic resonance imaging scans) showed that there was fluid in the uterus and that there was a sinus tract that went from the right sacrospinous ligament to the ischio-anal fossa, down the back of the thigh, and into the popliteal fossa. Osteomyelitis of the ischial tuberosity was also identified. The patient subsequently underwent an examination under anaesthesia, vaginal exploration, and removal of the ethibond sutures. Concurrently, she had hysteroscopy and endometrial biopsy, which did not reveal any abnormality.

During follow-up visits, postoperatively, the patient reported that the vaginal discharge and the discharge from the sinus tract markedly reduced in volume. Despite these improvements, the sinus tract did not fully heal, and the patient continued to experience persistent pain, reduced hip abduction, and restricted mobility. The orthopaedic team reviewed the patient, ruled out direct involvement of the right hip, and prioritized treating the sinus tract. The patient was then referred to our centre for further management. Examination under anaesthesia a year later confirmed that the sinus tract had healed and exploration of the right sacrospinous ligament showed no evidence of retained sutures. The gynaecology team discharged her and referred her back to the orthopaedic team to manage her ongoing restricted mobility and limited hip abduction.

During follow-up with the orthopaedic team and physiotherapy, the patient demonstrated partial improvement in mobility. The orthopaedic team advised her to consider Botox injections, but she chose to continue with physiotherapy and exercise-based interventions instead. She reported no further concerns regarding the sinus tract or discharge at subsequent follow-up visits. She regained full independent mobility, and the physiotherapy team were pleased with the outcome as well as the patient.

DISCUSSION

SSF is a commonly performed surgical treatment for vaginal or uterine prolapse. The technique, initially described by Richter in 1968, is a modification of the Amreich procedure introduced in 1951.

The cases presented highlight rare and delayed complications associated with SSF using ethibond Excel sutures (Ethicon Inc., Somerville, NJ, USA). The first case involved the development of a pelvic sinus tract extending to the gluteal region. The second case demonstrated a more complex scenario, characterised by chronic sinus formation extending to the buttock, thigh, and femur and osteomyelitis. This necessitated a multidisciplinary approach to manage the patient's condition effectively.

We learned that early detection through imaging and timely surgical intervention is critical to successful outcomes. These cases emphasise the importance of long-term vigilance and patient education for delayed complications.

A comprehensive literature review (PubMed, Medline, Scopus) was performed to identify and compile case reports and studies on rare complications such as sinus and fistula formation following SSF. Gluteal abscesses seem to be the most common presentation in the reported cases in the literature. Some previous case reports used braided/multifilament sutures, while others used monofilament as shown in Table 1.

Table 1. Case reports in the literature regarding sinus and/or fistula formation following sacrospinous hysteropexy

Author	Suture type	Presentation	Time between operation and presentation	Outcome
Kadam and Chuan[6]	Non-absorbable – specific suture unknown	Right gluteal abscess	10 years	Surgical removal of the suture
Kim et al.[7]	Non-absorbable –specific type unknown- appeared to be similar to Mersilene (Ethicon, Somerville, NJ, USA)	Purulent discharge from right buttock-gluteal abscess	20 years	Removal of the sutures and deep drainage of the abscess using a multidisciplinary approach
Faber et al.[8]	Non-resorbable monofilament Prolene sutures	Right gluteal abscess and myositis	1 year	Conservative management with antibiotics
Ayesha et al.[9]	Non-absorbable monofilament Prolene suture	Right gluteal abscess	3 years	Surgical management – suture could not be visualised.
Hibner et al.[10]	Polyester – non-absorbable braided suture	Left rectal abscess	4 months	Surgical management and removal of sutures
Salimans et al.[11]	Non-absorbable braided polyester suture (Mersilene; Ethicon, Somerville, NJ, USA)	Gluteal abscess	19 months	Surgical removal of the sutures
Gafni-Kane et al.[12]	Polytetrafluoroethylene sutures – non-absorbable monofilament	Right ischio-anal abscess	7 years	Surgical removal of suture + fistulectomy
Huberts et al.[13]	Non-absorbable monofilament prolene sutures	Osteitis of the sacrum	7 years	Surgical removal of sutures
Gephart et al.[14]	Ethibond (Ethicon, Somerville, NJ) non-absorbable braided suture	Iatrogenic bladder diverticulum	11 years	Robotic-assisted laparoscopic excision of the diverticulum

Contributing factors may include infection and suture erosion into the vagina. The suture's non-absorbable and multifilament nature gives it the potential to act as a foreign body, as suggested in previous reports.[11,12] Hibner et al.[10] suggested that braided sutures possess capillary properties that enable the absorption of water and potential pathogens. These pathogens can readily adhere to the extensive surface area of multifilament sutures which may play a rule in abscess formation following SSF. Due to these properties, monofilament sutures are considered a more appropriate choice for areas where the risk of infection is significant. The downside of using monofilament sutures is that they are potentially more likely to cut through tissue leading to the recurrence of prolapse compared to multi-filamentous sutures.

We also want to reiterate the importance of adhering to fundamental principles when using non-absorbable sutures. These include selecting monofilament sutures over multifilament options, positioning the knots and suture line away from the incision line, avoiding breach of the cervical canal during suture placement on the cervix, and ensuring that the cervical canal is not kinked in a way that could compromise drainage of the uterine cavity.

CONCLUSION

We advocate for the use of monofilament sutures rather than multifilament/braided sutures in SSF. However, more research and data are needed to reach that conclusion.

ETHICS

Informed Consent: Written consent was obtained from the patients to publish in medical journals while keeping patients' data anonymous.

FOOTNOTES

Contributions

Surgical and Medical Practices: S.P., A.K., Concept: A.K., Design: A.H.J., S.P., Data Collection or Processing: A.H.J., A.K., Analysis or Interpretation: A.H.J., S.P., A.K., Literature Search: A.H.J., Writing: A.H.J., S.P., A.K.

DISCLOSURES

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