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Laparoscopic exploration of obturator nerve

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Abstract Obturator nerve injury is a recognised potential complication of paravaginal repair (Scotti et al., *Am J Obstet Gynecol* 179:1436, 1998). Non-absorbable sutures are utilised for a paravaginal repair in order to provide permanent support, and they can induce a fibrotic reaction, thereby contributing to the integrity of the repair. We present a case in which we hypothesise that the fibrotic reaction induced resulted in the tethering of the obturator nerve. This was released laparoscopically with immediate resolution of symptoms.

Introduction

Paravaginal defects occur with detachment of the pubocervical fascia from its lateral attachment to the fascia of the obturator internus muscle at the level of the arcus tendineus fascia of the pelvis (white line). The defect can be unilateral or bilateral [1]. Surgical repair of paravaginal defects may be performed through the transabdominal, laparoscopic or vaginal approach [2]. In this case we present a transabdominal paravaginal repair, complicated by unilateral obturator nerve irritation and treated by laparoscopic exploration and release of fibrosis and suture material.

Case report

A 46-year-old woman G2P2 underwent an uncomplicated laparoscopically assisted vaginal hysterectomy

for irregular bleeding and dysmenorrhoea. Two years later a laparoscopic bilateral salpingo-oophorectomy was performed for severe premenstrual tension. Unfortunately, 4 years following her initial hysterectomy she presented with a feeling of incomplete bowel emptying and prolapse. On examination, she demonstrated total descent of the anterior vaginal wall, with bilateral detachment of her lateral vaginal support. A central defect to the posterior vaginal wall was also noted. Open paravaginal repair and vaginal posterior mesh repair were performed, with an uneventful immediate postoperative period. One week following surgery she developed right upper thigh pain on abduction and external rotation. This followed the distribution of the obturator nerve but with normal tone and power. Physiotherapy failed to alleviate the symptoms, and she was admitted for release of the right upper paravaginal suture. A retropubic approach was employed with some difficulty due to scarring. The most proximal suture was identified and divided but not removed. The obturator fossa was explored and was felt to be free from suture material. At outpatient review, however, her symptoms persisted, despite further physiotherapy. A neurosurgical opinion was sought, and it was agreed that there were still signs of persistent irritation without evidence of damage to the obturator nerve. She was admitted for laparoscopic exploration of the obturator nerve. The peritoneum of the right pelvic sidewall was opened just distal to the external iliac vessels and extended caudally, allowing the superior vesical artery to be identified as the distal landmark (Fig. 1). Fatty tissue was removed, allowing identification of the obturator nerve. This was followed into the obturator fossa. Fibrotic tissue was noted to be distorting the course of the nerve. The suture was contained in scar tissue tethering the nerve sheath (Fig. 2). The area of fibrosis was released, and the suture was removed (Fig 3). The patient's recovery was uneventful, and an improvement in the obturator nerve symptoms was noted immediately postoperatively. At follow up the patient's symptoms had fully resolved.

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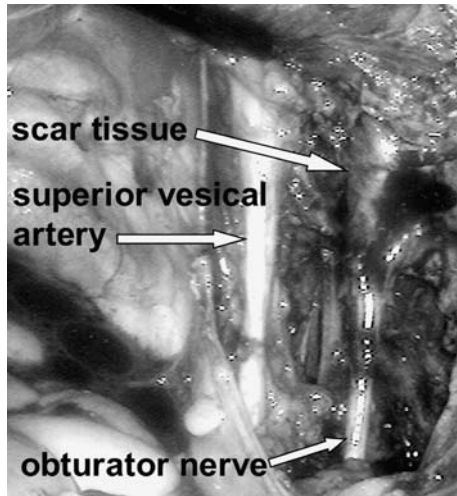


Fig. 1 Tethered obturator nerve

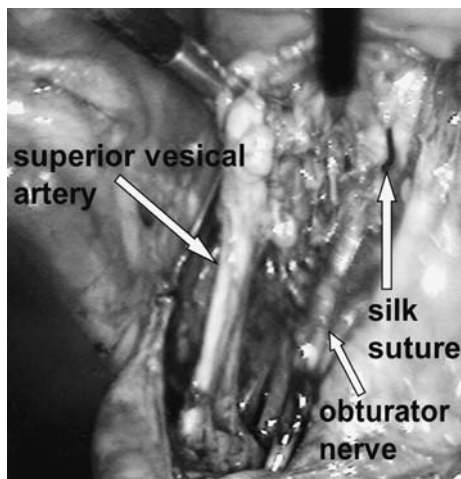


Fig. 2 Exposure of suture

Discussion

At paravaginal repair, dissection of the retropubic space is performed as for Burch colposuspension, but it is continued cephalad until the ischial spines are reached. Non-absorbable sutures are placed to elevate the lateral sulcus of the vagina to the white line of the pelvis, thus repairing the paravaginal defect. The first suspension suture is placed as close as possible to the ischial spine, and the last stitch as close as possible to the pubic ramus

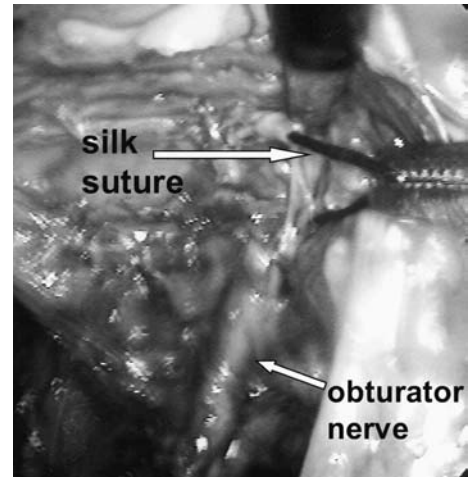


Fig. 3 Removal of suture

ventrally [1]. The close proximity of the obturator nerve leads some clinicians to test specifically for its integrity at operation by electrical stimulation. This is not our routine practice. In this case we postulate that the fibrotic reaction caused by the silk suture resulted in the tethering of the obturator nerve, restricting its movement within the nerve sheath. Once the fibrotic tissue had been divided the obturator nerve was returned to its anatomical position and the remaining suture was retrieved. The suture had not penetrated or encircled the nerve.

Obturator nerve exploration is well documented in pelvic oncological surgery, for example, in pelvic lymphadenectomy, which requires direct visualisation of the nerve. Gynaecologists using laparoscopy do not perform obturator fossa dissection routinely. In this case the assistance of a gynaecological oncologist was invaluable. The laparoscopic approach provided excellent visualisation of the obturator fossa and afforded obvious advantages over traditional open surgery.

References

1. Lui CY, Aronson MP (1998) Laparoscopic management of urinary stress incontinence and pelvic floor defects. Endo-Surgery Institute, Cincinnati, USA
2. Nguyen JK (2001) Current concepts in the diagnosis and surgical repair of anterior vaginal prolapse due to paravaginal defects. *Obstet Gynecol Surv* 56:239–246