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Persistent pelvic pain following transvaginal mesh surgery: a cause for mesh removal

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ABSTRACT

Objective: Persistent pelvic pain after vaginal mesh surgery is an uncommon but serious complication that greatly affects women's quality of life. Our aim was to evaluate various procedures for mesh removal performed at a tertiary referral center in cases of persistent pelvic pain, and to evaluate the ensuing complications and outcomes.

Study design: A retrospective study was conducted at the University Hospital of Caen, France, including all patients treated for removal or section of vaginal mesh due to pelvic pain as a primary cause, between January 2004 and September 2009.

Results: Ten patients met the inclusion criteria. Patients were diagnosed between 10 months and 3 years after their primary operation. Eight cases followed suburethral sling procedures and two followed mesh surgery for pelvic organ prolapse. Patients presented with obturator neuralgia (6), pudendal neuralgia (2), dyspareunia (1), and non-specific pain (1). The surgical treatment to release the mesh included: three cases of extra-peritoneal laparoscopy, four cases of complete vaginal mesh removal, one case of partial mesh removal and two cases of section of the suburethral sling. In all patients with obturator neuralgia, symptoms were resolved or improved, whereas in both cases of pudendal neuralgia the symptoms continued. There were no intra-operative complications. Post-operative Retzius hematoma was observed in one patient after laparoscopy.

Conclusions: Mesh removal in a tertiary center is a safe procedure, necessary in some cases of persistent pelvic pain. Obturator neuralgia seems to be easier to treat than pudendal neuralgia. Early diagnosis is the key to success in prevention of chronic disease.

1. Introduction

Since the mid-1990s, mesh surgery has become the dominant treatment for stress urinary incontinence (SUI), replacing classical, well-established techniques like the Burch colposuspension [1]. Following the success of the new procedure, transvaginal mesh kits were developed to treat pelvic organ prolapse (POP). Cure rates, outcomes, and complications have been extensively studied and reported [2–4]. Most transvaginal mesh kits for the treatment of incontinence and genital prolapse require trocars for mesh introduction, which can cause intra- and post-operative complications, due to the variability in pelvic anatomic structures [4–7].

Pelvic pain after vaginal mesh surgery is a serious complication that greatly affects a woman's quality of life. The rate of pelvic pain following transvaginal mesh surgery is difficult to predict because of various rates in different series. Pelvic pain varies from 0 to 30% in series reporting post-operative complications [5,8–10]. Bothersome symptoms include dyspareunia, obturator or pudendal neuralgia, buttock pain, and combinations of the above, directly related to the type of mesh surgery performed and the techniques used. To date, the literature contains only case reports about pelvic pain following transvaginal mesh surgery and about proposed treatments [11–14]. Finding the cause and treating the post-operative pain appear to be a challenge for gynecologists as well as for patients seeking treatment, at times for years, before the correct diagnosis is made. Treatment of pelvic pain following transvaginal mesh surgery by physiotherapy and local injections of anti-inflammatory drugs can relieve pain for many patients, but in certain cases it is necessary to release or remove the mesh [9,15].

The University Hospital of Caen is a tertiary referral center. Since 2001, we applied a vaginal mesh protocol for POP surgery and we performed about 250 vaginal mesh operations every year. As a referral center, we treated mesh complications of our own

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patients as well as those of patients referred to the hospital. Our aim was to evaluate various procedures for mesh removal performed at the University Hospital of Caen in cases of persistent pelvic pain, and to evaluate the ensuing complications and outcomes.

2. Materials and methods

A retrospective study was conducted at the University Hospital of Caen, France, including all patients treated for removal or section of vaginal mesh due to pelvic pain (Category 1B-3B, according to the International Urogynecological Association (IUGA)/International Continence Society (ICS) joint terminology and classification of the complications related directly to the insertion of prostheses (meshes, implants, tapes) and grafts in female pelvic floor surgery, 2011 [16]) as a primary indication between January 2004 and September 2009. Data collected from medical records included age, primary operation for mesh placement, patient symptoms, physical examination and complementary tests, mesh removal surgery (partial or complete vaginal mesh removal, section of suburethral sling, or extra-peritoneal laparoscopy), intra- and post-operative complications, outcome 6 weeks and 6 months after the operation, and recurrence of POP or SUI.

2.1. Surgical techniques

Section of the suburethral mesh can be performed under local anesthesia in most patients. A small sagittal cut was performed 1 cm under the urethral meatus in order to reach the band, followed by a sharp cut of the band in one of its arms. The vagina was closed with 2 or 3 separate absorbable sutures.

Complete removal of vaginal mesh was performed under general or spinal anesthesia. For complete removal of the transobturator tape (TOT), a midline full-thickness incision was performed on the anterior vagina, 2 cm from the urethral meatus. The paraurethral fossae were opened on both sides. The body of the mesh was trapped, and the surrounding tissues were carefully dissected away. For complete removal of the posterior mesh, a midline full-thickness incision was performed on the posterior vagina extending up to 1 cm from the uterine cervix or vaginal vault. The pararectal fossae were opened until the ischial spine and the sacrospinous ligaments were reached. The body of the mesh was trapped and the surrounding tissues were carefully dissected away. The mesh, with its arms, was then removed from the pararectal fossae. The vagina was closed with running locked absorbable suture.

Extraperitoneal laparoscopy to remove tension-free vaginal tape (TVT) was performed through extraperitoneal insufflation in order to reach the Retzius space. The dissection was carried out until Cooper's ligaments were reached laterally, the urethra anteriorly, and the arcus tendineus fascia pelvis posteriorly, followed by dissection of the TVT from the pelvic walls as far as the level of the arcus tendineus fascia pelvis, on both sides. The remaining tape under the urethra was left in place like a mini-sling to maintain continence.

3. Results

Between January 2004 and September 2009, 10 patients who were operated on because of pelvic pain as a primary cause met the inclusion criteria of the study. Six of them were referred to the University Hospital of Caen from other medical centers, and four had been initially operated on at the hospital. Over the course of five years, 105 operations were performed at the hospital for mesh removal due to various indications: pain as a primary cause, without additional reasons, was the indication in 9.5% of cases (Fig. 1). Six patients presented with obturator neuralgia, two presented with pudendal neuralgia, one patient presented with dyspareunia, and another with non-specific pelvic pain. Patients were diagnosed upon symptoms, physical diagnosis and pudendal block in cases of suspected pudendal neuralgia. Patient symptoms and the related primary operations are presented in Fig. 2. Patients were diagnosed between 10 months and 3 years after the primary operation. The different procedures used to treat the pain, and their outcomes are presented in Table 1.

Six patients presented symptoms of obturator neuralgia: all had sharp, electric unilateral or bilateral pain in the groin, aggravated by certain movements and while walking. Of the six patients who presented with obturator neuralgia, three had a primary operation for TOT and three for TVT. The surgical treatment included extraperitoneal laparoscopy in three cases: two cases of TVT removal and one case of TOT removal due to abscess next to the obturator nerve. For the other cases of obturator neuralgia, two complete vaginal mesh removals were performed following TOT and one partial vaginal mesh removal following TVT. In all procedures, mesh removal was accompanied by obturator nerve neurolysis. Four patients had complete resolution of symptoms six months after the surgical treatment and the other two showed substantial pain relief.

Two patients presented with pudendal neuralgia. One patient had undergone TOT three years earlier, with no other surgical treatments. She started experiencing pain in her buttock three months after the operation, aggravated while sitting. She also had pain during urination, accompanied by polyuria. The pain was provoked during clinical examination while palpating the left ischial spine. Clinical examination revealed that the TOT was poorly positioned and crossed very low, next to the uterine cervix. Surgical treatment included section of the TOT and local injection of anti-inflammatory drugs. The second patient presented with pudendal neuralgia following a triple operation for prolapse with prostheses (TOPP), which included cystocele, rectocele, and level 1 defect repair. Symptoms included perineal pain, exacerbated by sitting and lying, without sensory loss. Surgical treatment included complete removal of the posterior vaginal mesh accompanied by pudendal nerve neurolysis. In both patients, symptoms continued six months after the operation, and both were referred to the pain clinic for follow-up and further treatment.

Two patients presented with generalized pain and dyspareunia. The first patient presented with dyspareunia one year after TOPP. Clinical examination revealed that the posterior mesh was contracted, causing over-tension. Surgical treatment included section of the mesh in order to release the tension. The patient showed partial relief of the pain following the operation, but developed secondary vaginismus due to contracted levator ani muscles. She was referred to the pain clinic and physiotherapy. The second patient presented persistent, non-specific vaginal pain following TOT. During clinical examination the TOT was found to

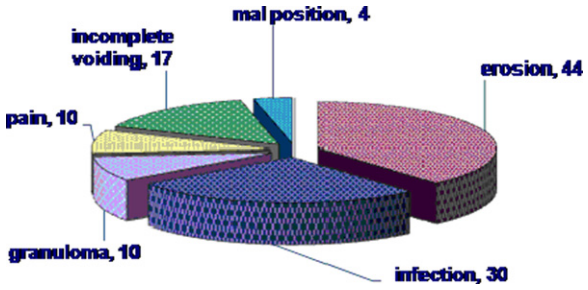

Fig. 1. Distribution of indications (some cases had more than one indication) for 105 mesh removal procedures following transvaginal mesh surgery.