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Neuropathic Symptoms After Surgery Using Transobturator Tape for Stress Incontinence

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ABSTRACT

A 40-year-old female patient with frequency of micturition and stress incontinence had surgery using transobturator tape (TOT). The surgical procedure was uncomplicated but the patient developed symptoms of groin pain, loss of sensations in the legs, and inability to stand or bear weight 48 hours postoperatively. Neurological assessment did not reveal any motor loss, although reduced sensations in the right thigh persisted for a few days. Pelvic collection, mesh infection, and exposure were excluded. Physiotherapy and analgesia were administered and her symptoms diminished. No residual symptoms were present at 4 and 8-week follow-up evaluations.

KEYWORDS: Transobturator; Groin pain; Neuropathy; Obturator nerve damage

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CASE REPORT

History. A 40-year-old parous female was referred. She had a year-long history of frequency of micturition and stress incontinence with coughing, sneezing, and running. She would pass urine more than 10 times a day, which was disrupting her daily activities. There was no urgency or nocturia. She felt incomplete emptying of the bladder. Her fluid intake was not excessive. She was not taking any regular medications. She was allergic to penicillin and smoked 5 cigarettes a day. Her past medical history was unremarkable.

Initial Examination. The patient's body mass index (BMI) was 26. Pelvic bimanual examination was normal except for weak pelvic floor tone. Urinalysis was negative. Urodynamic pressure flow studies were organized.

Filling cystometrogram (CMG) showed a stable detrusor with an element of hypersensitivity; first desire to void was at 100 mL. Moderate stress incontinence was demonstrated with a cough at full bladder capacity of 350 mL. The patient voided in 2 attempts with Qmax of 16.6; voiding was to completion.

Nonsurgical Management. Referral to a continence advisor was arranged. The purpose was to complete pelvic floor strengthening and bladder retraining. Double voiding techniques were discussed and a plan was made to reexamine her after physiotherapy sessions were completed.

Four months later, the patient reported worsening of her symptoms since physiotherapy and electrical stimulation. She requested surgical treatment. After detailed discussion of efficacy, risks, and long-term outcome data, she consented to a transobturator tape (TOT) procedure.

Surgical Management. An Align TOT (Bard; Covington, GA) was inserted under spinal anesthetic with bupivacaine and fentanyl. In addition, local infiltration of 20 mL of 1%

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case report

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Xylocaine (AstraZeneca LP, Wilmington, DE) in adrenaline was given vaginally along the trocar paths. The surgeon identified the anatomical landmarks and used the recommended surgical technique [1]. After check cystoscopy, the tape was adjusted to keep it tension-free. There was a 2 cm lateral extension of the vaginal incision toward the right, caused by blunt dissection with an index finger. This was sutured separately. Intraoperative blood loss was minimal. The patient received intravenous antibiotic cover. A small vaginal pack and Foley catheter were inserted and she was transferred to the ward.

Outcome. The following day, the patient complained of pain in the right groin along with weakness and reduced sensations in the right lower limb. She was not able to stand or bear weight on the right leg. The vaginal pack was removed and slight bleeding per vaginum was noted.

Detailed neurological assessment showed reduced right-sided touch and cold sensations and restricted mobility of the right hip. Physiotherapy and analgesia were given. The next day, the patient was able to mobilize and the catheter was removed. Numbness had improved although pain persisted. She was managed conservatively with morphine analgesia, antibiotics, and anti-inflammatory agents. She went home on day 5 but was readmitted on day 7 because she was unable to cope with the pain at home. No evidence of pelvic collection was found on ultrasound scan, nor were there any signs of tape erosion or infection. Her pain subsided after bowel movement with laxatives and physiotherapy. At the 4 and 8-week follow-up reviews, she had no pain or neurological symptoms of any kind. She was continent of urine and voiding well with minimal residuals. Wound healing was satisfactory.

DISCUSSION

Transobturator vaginal tape procedures are associated with low complication rates. The outside-in technique is considered less risky for nerve injury when compared with the inside-out approach, based on cadaveric dissection showing the distance between the neurovascular bundle in the obturator canal and trocar insertion ranging from 2.9- 3.5 cm [2,3,4]. Obturator nerve trauma during transobturator sling procedures is rare. When it occurs, it is likely due to the proximity of the nerve to the trocar path. Precise knowledge of anatomical landmarks and variations is vital. Adherence to the recommended surgical technique [1] will prevent damage to the obturator nerve or its branches during trocar insertion, hence improving the safety margin.

The obturator nerve provides motor innervation to the adductor muscle of the thigh and sensory innervation to the medial thigh area. Injury or entrapment may cause pain and restricted mobility of the thigh and hip adduction, along with sensory loss and pain across the anterior thigh. Pain frequently has a burning, lancinating, or electric shock character. Although groin pain following TOT is usually transient, persistent pain necessitating tape division or removal has been reported.

An anti-inflammatory agent is the first line of treatment for neuropathic pain subsequent to obturator nerve trapping or damage. Transient nerve blockade from local anaesthetic infiltrations is a possibility, but the effect usually wears off within 12 hours [5]. Management with analgesia, exercise, and rehabilitation mostly suffice [6]. Any persisting or unusual neuropathic symptoms should be carefully evaluated with neuroimaging and may require electromyography (EMG) and nerve conduction studies to identify and localize functional lesions of the peripheral nerves, motor units, and muscle. Magnetic resonance imaging (MRI) may show entrapment neuropathy. Neuropathic pain is often triggered by injury and may persist for a long time beyond the apparent healing of the damaged tissues. Specialized investigations should be reserved for nonresponsive cases due to the cost implication.

It is likely that surrounding oedema or possible compression from a small haematoma had led to the neurological symptoms in the present patient. The symptoms resolved over a few days. A pelvic scan on day 7 did not show any clinical evidence of pelvic collection. It is possible that a small haematoma had drained itself by that time leading to resolution of the symptoms, in combination with analgesic and intense physiotherapy management. Neuroimaging was deferred because the patient then made good recovery. MRI has proven value in detecting nerve compression from surrounding oedema or haematoma and EMG is suggested if motor function is compromised. Fortunately, this patient's symptoms had resolved completely and no further investigations were needed.

The case emphasizes the fact that groin pain and associated neuropathy, albeit transient, is a possible complication even in apparently straightforward tape insertions by transobturator route. There are cases reported of tape excision or removal leading to resolution of severe or persistent symptoms. Such intervention is recommended in the early postoperative period before dense fibrosis develops in order to prevent irreversible nerve damage [7].

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