Postoperative lymphocele causing obturator nerve entrapment, treated with percutaneous drainage and intranodal poppyseed oil (Lipiodol)-based lymphangiography

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ABSTRACT

Obturator nerve entrapment is a rare complication after pelvic surgery and is caused by a direct intraoperative injury or secondary to compression by a postoperative collection. We have presented the case of a 65-year-old man who had complained of right-sided medial groin pain 4 weeks after robot-assisted laparoscopic prostatectomy with bilateral pelvic lymphadenectomy. Pelvic magnetic resonance imaging showed bilateral lymphoceles with right-sided compression of the obturator nerve causing diffuse muscle edema in its innervation region. Percutaneous drainage and intranodal poppyseed oil (Lipiodol)-based lymphangiography led to a complete resolution of his symptoms. (J Vasc Surg Cases Innov Tech 2021;7:698-700.)

Keywords: Intranodal lymphangiography; Lipiodol; Lymphadenectomy; Obturator nerve entrapment; Postoperative lymphocele

Obturator nerve injury is a rare complication after robot-assisted laparoscopic prostatectomy with bilateral pelvic lymphadenectomy, with an incidence of 0.3%.1 Damage to the obturator nerve can result from an intraoperative injury, including stretching or transection of the nerve, or the patient’s positioning, or can be secondary to compression by a postoperative collection. In the present report, we have described a postoperative lymphocele compressing the obturator nerve and causing acute denervation edema in the external obturator muscle and the adductor longus, brevis, and magnus muscle, for which successful percutaneous drainage and theranostic lymphangiography was performed.2 The patient provided written informed consent for the report of his case details and imaging studies.

CASE REPORT

A 65-year-old patient with a history of Gleason score 7 prostate adenocarcinoma underwent robot-assisted laparoscopic prostatectomy and bilateral pelvic lymphadenectomy. Four weeks later, he presented with right-sided medial thigh and groin pain with associated sensory loss in this region and weakness of the adductor muscles. Because of the clinical suspicion of obturator nerve compression, pelvic magnetic resonance imaging showed bilateral lymphoceles with right-sided compression of the obturator nerve causing diffuse muscle edema in its innervation region. Percutaneous drainage and intranodal poppyseed oil (Lipiodol)-based lymphangiography led to a complete resolution of his symptoms. (J Vasc Surg Cases Innov Tech 2021;7:698-700.)
showed a significant decrease in volume of the lymphocele on
the right side with a small remnant (2.9 cm × 1.3 cm × 3.0 cm)
and complete resolution of the lymphocele on the left side.
An obvious decrease had occurred in the diffuse muscle edema
(Fig 3).

**DISCUSSION**

Most prostatectomies are accompanied by pelvic lymph node dissection (270% in 2010-2011; National Cancer Database study) to improve staging. The emergence of a lymphocele after lymph node resection is a common complication. Although most of these lymphoceles will remain subclinical, some will become symptomatic, predominantly owing to local compression. In

In the present case, the patient’s symptoms had become clear 4 weeks after the initial surgery, which strongly argued against an intraoperative nerve injury and favored compression by a postoperative collection, including a hematoma or lymphocele, as demonstrated by MRI. In addition, treatment of the lymphocele was associated with disappearance of the postoperative symptoms, which would have been very unlikely if the nerve had been injured intraoperatively.

Because of its deep intrapelvic location, the obturator nerve is relatively protected, and obturator neuropathy is relatively uncommon. When it occurs, it is most frequently due to pelvic trauma or surgery and is related to mass effect and stretching, respectively. In the subacute reversible phase, nerve entrapment will cause edema of the denervated muscles with high signal intensity on MRI with fluid-sensitive sequences (T2-weighted short tau inversion recovery images). In the present case, the postoperative lymphocele on the right side was located near the obturator canal, at the expected course of the obturator nerve (not directly visualized on MRI) and was larger than the collection on the left side, resulting in unilateral symptoms. Together with the denervation edema in the external obturator muscle and adductor longus, magnus, and brevis muscle, this finding was highly suspicious for compression neuropathy of the obturator nerve caused by a postoperative lymphocele, in line with a more common cause of temporary loss of conduction (ie, nerve compression in locations where the nerve passes through narrow anatomic openings).

Percutaneous drainage (under ultrasound or computed tomography guidance) is often the initial management of symptomatic pelvic lymphoceles and in the present case, catheter drainage was associated with immediate control of the postoperative lymphocele. However, the recurrence rates have been as high as 25%, with a risk of infection of 50%. Open or laparoscopic marsupialization to connect
the lymphocele with the peritoneal space is an effective treatment, with a success rate of 90%. However, a laparoscopic approach remains quite invasive. Recently, bilateral intranodal Lipiodol-based lymphangiography has received a great amount of interest as a minimally invasive method to diagnose and treat lymphatic leakage and lymphoceles, with clinical success rates of 51% to 100% potentially related to a granulomatous or inflammatory reaction to Lipiodol that contributes to the therapeutic effect. In the present case, intranodal injection of Lipiodol confirmed the diagnosis of a lymphatic leak and led to a reduction or resolution of the lymphocele, with a subsequent significant decrease of muscle edema. Additional embolization with glue (a mixture of N-butyl cyanoacrylate and Lipiodol) can also be used and can increase the clinical success. Despite the combination of bilateral lymphadenectomy and bilateral intranodal Lipiodol-based lymphangiography, the patient did not develop postinterventional lower limb lymphedema, in line with previous reported results of bilateral intranodal lymphangiography for the treatment of postoperative chylous ascites and postoperative lymphatic leaks after robot-assisted laparoscopic pelvic resection. In contrast, pedal lymphangiography has been associated with peripheral lower limb edema related to disruption of the peripheral lymphatics as reported by Lee et al.

CONCLUSIONS

Obturators nerve entrapment caused by compression of a postoperative collection (hematoma or lymphocele) can result in a delayed presentation, making it difficult to differentiate between other causes of neurologic impairment. It is important to become familiar with this postoperative entity because early diagnosis and treatment can prevent irreversible neurologic damage. Percutaneous drainage, followed by intranodal Lipiodol-based lymphangiography, can be a successful treatment that is less invasive than laparoscopic marsupialization.

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