



Safe obturator nerve identification during pelvic lymphadenectomy for high-risk endometrial cancer – a case report

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Background: Endometrial cancer (EC) is the most frequent gynecological cancer and the fourth in western women. To date, although the sentinel lymph node technique is the gold standard in low-risk EC patients, pelvic and lumboaortic lymphadenectomy is still suggested by international guidelines for staging purposes in high-risk EC patients. Pelvic lymphadenectomy is burdened by surgical complications ranging from vascular, nerve, intestinal, and lymphatic-related injuries. Furthermore, due to its proximity to the large pelvic vessels, the obturator nerve is the most frequently injured in gynecological surgery. The identification of the obturator nerve can take place either through the mediolateral approach through the lateral paravesical fossa or with a lateromedial approach through the iliolumbar fossa. To date, no specific approach is recommended and each surgeon will perform the approach they are most confident with.

Case Description: We present a 71-year-old woman case with serous EC. The preoperative workup showed an intrauterine lesion measuring 41 mm × 37 mm × 35 mm with deep myometrial invasion. Therefore, the patient underwent laparoscopic surgical treatment with pelvic and lumboaortic staging lymphadenectomy.

Conclusions: This surgical video case report aims to show a safe obturator nerve identification during pelvic lymphadenectomy, with a lateromedial approach through the iliolumbar fossa.

Keywords: Endometrial cancer (EC); nerve identification; obturator nerve; staging lymphadenectomy; case report

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Introduction

Endometrial cancer (EC) is the most frequent gynecological cancer and the fourth in western women (1). After the European Society for Medical Oncology (ESMO) European Society for Radiotherapy & Oncology (ESGO) European Society of Gynaecological Oncology (ESTRO) consensus conference, EC patients were divided into low, intermediate, and high risk of nodal metastases (2). To date, although the sentinel lymph node technique is the

gold standard in low-risk ECs, less evidence was found in high-risk patients (3). Therefore, in high-risk patients, pelvic and lumboaortic lymphadenectomy is still suggested by international guidelines for staging purposes (4). As known, pelvic lymphadenectomy is burdened by surgical complications ranging from vascular, nerve, intestinal, and lymphatic-related injuries (5). Nerve injuries are rare complications affecting 3% of patients surgically treated for EC (6). Nevertheless, due to its proximity to the large pelvic

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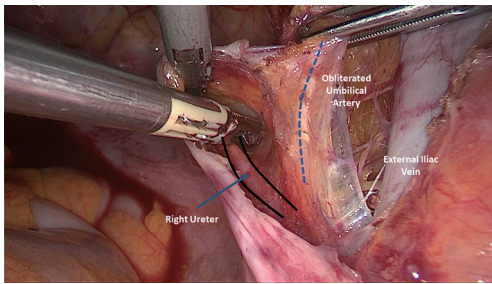


Figure 1 Right ureter isolation, obliterated umbilical artery, and external iliac vein.

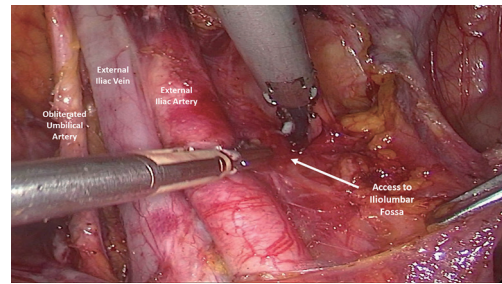


Figure 4 Access to the right iliolumbar fossa.

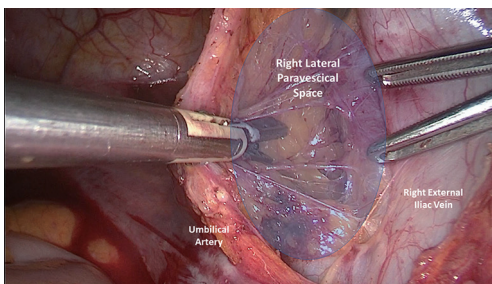


Figure 2 Right lateral paravesical space.

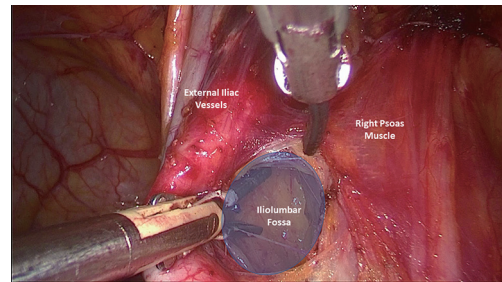


Figure 5 Right iliolumbar fossa.

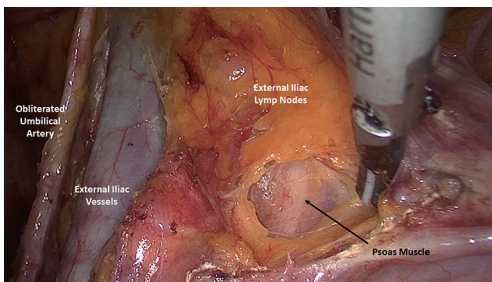


Figure 3 Right external iliac lymph nodes.

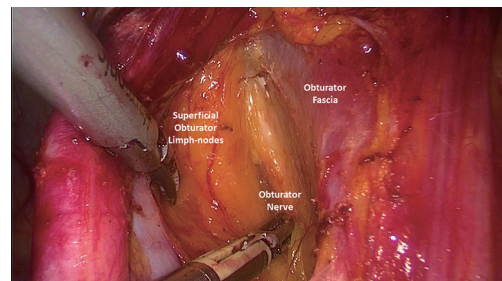


Figure 6 Right obturator nerve and superficial obturator lymph nodes.

vessels, the obturator nerve is the most frequently injured in gynecological surgery (7).

The surgical approach to pelvic lymph nodes involves the opening of the paravesical and pararectal fossae as a first step. Furthermore, before removal of the obturator lymph nodes, the nerve should always be identified in advance. The identification of the obturator nerve can take place either through the mediolateral approach through the lateral paravesical fossa or with a lateromedial approach through the iliolumbar fossa. To date, no specific approach is recommended and each surgeon will perform the approach they are most confident with.

This surgical video case report aims to show a safe obturator nerve identification during pelvic lymphadenectomy, with a lateromedial approach through the iliolumbar fossa.

We present the following case in accordance with the CARE reporting checklist (available at <https://gpm.amegroups.com/article/view/10.21037/gpm-20-62/rc>).

Case presentation

We present a 71-year-old woman case with serous EC. The preoperative workup showed an intrauterine lesion measuring 41 mm × 37 mm × 35 mm with deep myometrial

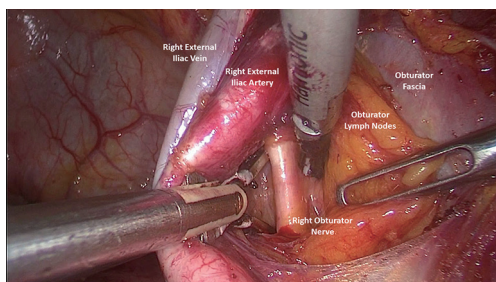


Figure 7 Right obturator nerve, obturator lymph nodes, and external iliac vessels.

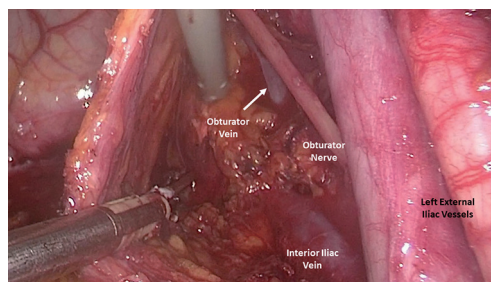


Figure 10 Obturator nerve, obturator vein and inferior iliac vein.

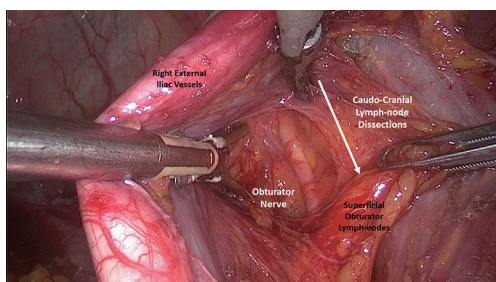


Figure 8 Caudocranial obturator lymph node dissection.

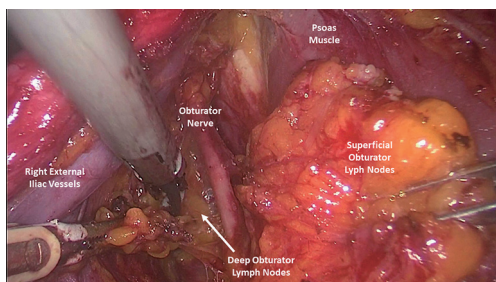


Figure 9 Superficial and deep obturator lymph nodes.

invasion. Therefore, the patient underwent laparoscopic surgical treatment with pelvic and lumboaortic staging lymphadenectomy.

The following surgical steps were performed:

(I) Access to the retroperitoneum with development of the lateral paravesical fossa (*Figures 1,2*). (II) Exposure and isolation of the external iliac vein and artery (*Figure 3*). (III) Identification of the ureter. (IV) Removal of the external iliac lymph nodes with exposure of the great vessels. (V) Development of the iliolumbar fossa (*Figures 4,5*). (VI) Identification of the obturator nerve (*Figures 6-8*). (VII) Removal of obturator lymph nodes with obturator nerve under constant vision

(*Figures 9,10*). The procedure is shown in *Video 1*.

The patient was discharged after 5 days without postoperative complications and subsequently, a platinum/taxol-based chemotherapy and external beam radiation therapy were performed. To date, after a follow-up of 6 months, no recurrences were found.

All procedures performed in studies involving human participants were in accordance with the Helsinki Declaration (as revised in 2013). Written informed consent was obtained from the patient for publication of this manuscript and any accompanying images.

Discussion

Although a rare event, the obturator nerve surgical injury can represent a disabling complication. Complete lesions of the obturator nerve can result in permanent lameness (8). Therefore, the prior identification of the obturator nerve is a key step for a safe pelvic lymphadenectomy.

This approach to safeguarding the obturator nerve consists of a lateromedial approach to the nerve through the iliolumbar fossa. Furthermore, proceeding with caudocranial lymphadenectomy further reduces the risk of complications for anatomical reasons. In fact, in the most caudal part of the nerve, the distance between the obturator nerve and the external iliac vessels is greater than in the most cranial portion of the nerve (9).

Finally, advanced surgical procedures should be performed in tertiary hospitals dedicated to oncological surgery. All these small precautions could further limit the obturator nerve injury which, although rare, could be a serious complication for EC patients.

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Footnote

Reporting Checklist: The authors have completed the CARE reporting checklist. Available at <https://gpm.amegroups.com/article/view/10.21037/gpm-20-62/rc>

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://gpm.amegroups.com/article/view/10.21037/gpm-20-62/coif>). CVA serves as an unpaid editorial board member of *Gynecology and Pelvic Medicine* from Aug 2020 to Jul 2022. SC serves as an unpaid editorial board member of *Gynecology and Pelvic Medicine* from Nov 2019 to Oct 2021. The other authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All procedures performed in studies involving human participants were in accordance with the Helsinki Declaration (as revised in 2013). Written informed consent was obtained from the patient for publication of this manuscript and any accompanying images.

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