

# Use of radioguided surgery in abdominal wall endometriosis: An innovative approach

## ABSTRACT

Endometriosis is characterized by the presence of endometrial glands and stroma outside the uterine cavity. The occurrence of endometriosis in the anterior abdominal wall is often associated with previous cesarean section, once the spread of endometrial cells during the surgical procedure is a biologically fact possible. A 43-year-old patient, with cesarean section history and pelvic endometriosis diagnosed for over 10 years, presented with progressive abdominal pain. Tests showed cystic image with 1.6 cm of diameter and debris, located in mid-lower portion of the rectus abdominis left, suggesting abdominal wall endometriosis. This abdominal wall lesion was not identifiable in the clinical examination (impalpable), which is why we opted for the use of preoperative marking technique with radioisotope called Radioguided Occult Lesion Localization (ROLL™). The use of ROLL™ in this case allowed rapid surgical identification of endometriotic lesion and its complete excision.

**Keywords:** Abdominal wall, endometriosis, technetium Tc 99m aggregated albumin

## INTRODUCTION

Endometriosis is characterized by the presence of endometrial glands and stroma outside the uterine cavity.<sup>[1,2]</sup> Its prevalence in the female population, according to the literature, reaches rates ranging from 5% to 15% and affects mainly women aged around 35 years.<sup>[3,4]</sup>

It affects mainly the pelvic area, confined to serous peritoneal surfaces and intra-abdominal organs such as the ovaries, fallopian tubes, peritoneum, and rectovaginal septum.<sup>[5,6]</sup> The extrapelvic endometriosis is considered a rare entity and is described cases with involvement of the bladder, bowel, and omentum, for example.<sup>[3,6]</sup> There are also reported cases in scar tissue from previous abdominal incisions, including laparoscopy holding local, hernias repair, and laparotomy, collectively named abdominal wall endometriosis.<sup>[1,5]</sup>

Many theories attempt to explain its pathogenesis, including, retrograde menstruation, lymphatic and vascular dissemination, metaplasia, and mechanical implementation.<sup>[4]</sup>

The occurrence of endometriosis in the anterior abdominal wall is often associated with previous cesarean section, once the spread of endometrial cells during the surgical procedure is a biologically fact possible. This is an opportunity for the inoculation of endometrial cells in the peritoneum and abdominal wall.<sup>[1,2]</sup>


## CASE REPORT

A 43-year-old patient, with surgical birth history (cesarean section) and pelvic endometriosis diagnosed for over 10 years, presented with progressive abdominal pain, despite being in

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use of levonorgestrel-releasing system (MIRENA™). Magnetic resonance image and ultrasound showed a cystic image with 1.6 cm of diameter and debris, located in mid-lower portion of the rectus abdominis left, suggesting abdominal wall endometriosis [Figure 1].

This abdominal wall injury was not identifiable in the clinical examination (impalpable). After signature a postinformed and explained term of acceptance by the patient, we opted for the use of preoperative marking technique with radioisotope called Radioguided Occult Lesion Localization (ROLL™) [Figure 2]. With the help of the portable gamma probe, was obtained proper identification of endometriotic lesions, allowing for complete excision [Figure 3]. Pathological study of the surgical specimen confirmed abdominal wall endometriosis [Figure 4].

## DISCUSSION

Endometriosis is considered as a condition devoid of cure. However, there are several types of treatment aimed at

reducing their symptoms, especially pain, but also the improvement of fertility and sex life.<sup>[7]</sup>

One of therapeutic approaches for endometriosis is surgical excision of endometriomas either by laparoscopy or laparotomy.<sup>[8]</sup>

Women with abdominal wall endometriosis may experience cyclical abdominal pain, a palpable mass, no specific pelvic pain, dysmenorrhea, dyspareunia, irregular menstrual cycles, and infertility.<sup>[1,4]</sup>

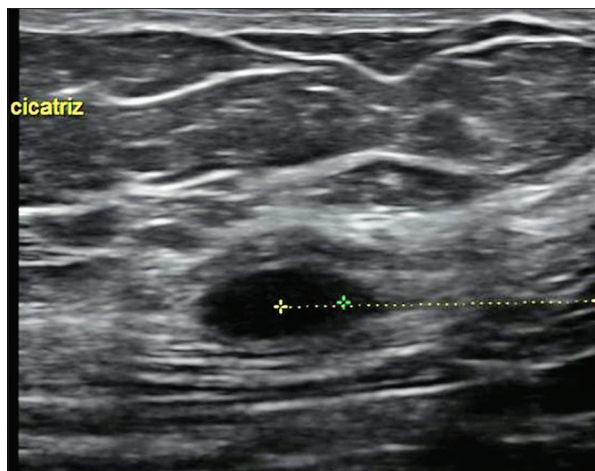


Figure 1: Abdominal wall ultrasound with hypochoic image suggestive of endometriosis cyst

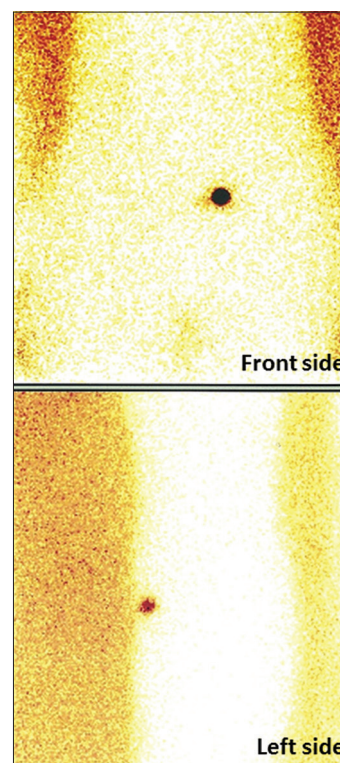


Figure 2: Scintigraphy after labeling with radioisotope guided by ultrasound

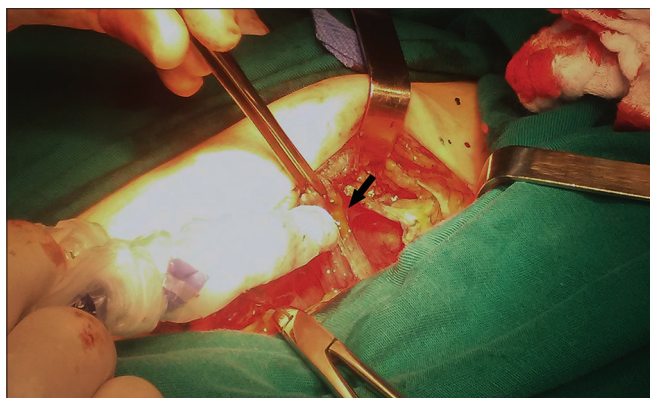


Figure 3: Node location the endometrioma with the help of portable gamma probe

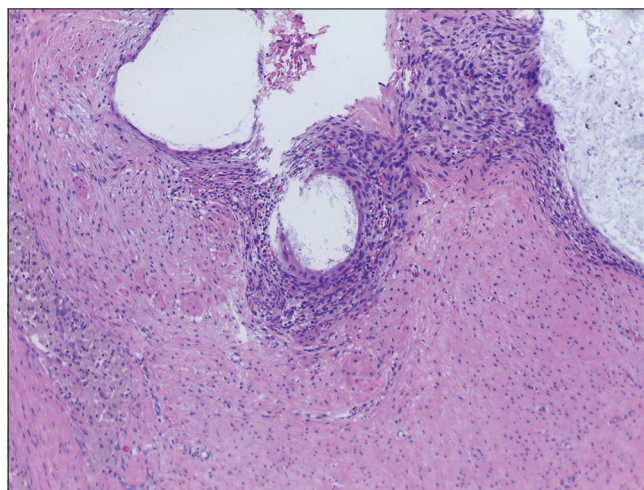


Figure 4: Gland with endometrial stromal pattern (H and E, x100)

Considering its low frequency and the lack of familiarity with the subject, the diagnosis of abdominal wall endometriosis can be a problem, especially in cases of impalpable or subclinical lesions. Images of ultrasound and magnetic resonance are useful in the identification, characterization, and location of the wall endometriomas.<sup>[2]</sup>

The ROLL™ technique, used in mastology, is an approach for the localization and resection of nonpalpable breast lesions. It is based on intratumoral injection, under stereotactic or under the guidance of ultrasound, of a small amount of a radiopharmaceutical (Tc99) associated with a macroaggregated albumin. The drug's deposit works, then, as a marker of nonpalpable lesions. A gamma radiation detector probe is used during surgery to guide the excision of the marked area.<sup>[9,10]</sup>

Due the ROLL's ability to mark subclinical breast lesions, we found ourselves faced with the possibility of using this technique as a way to help to identify, during the surgery, the suspicious lesion of impalpable endometrioma of the abdominal wall.

The use of ROLL in this case allowed rapid identification of endometriotic lesion and its complete excision.

## CONCLUSION

The difficulty of locating and addressing the impalpable endometriomas of abdominal wall is a promising new indication for the use of ROLL™ technique. In addition to increasing surgical precision, can positively impact the operative time and morbidity of the same, with its proven efficacy and safety in other surgeries.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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