Cesarean Section Scar Nodule, Ovarian Cyst, and Dysmenorrhea

Manuel Gonçalves-Henriques[1], Pedro Brandão[2,3]*, Amélia Almeida[4], Paula Ramôa[5]

[1]Department of Obstetrics and Gynecology, Hospital Professor Fernando da Fonseca, Amadora, Lisbon, Portugal, [2]Department of Reproductive Medicine, Instituto Valenciano de Infertilidad, Valencia, Spain, [3]Faculty of Medicine, University of Porto, Porto, Portugal, [4]Department of Obstetrics and Gynecology, Centro Hospitalar Médio Ave, Famalicão, Portugal, [5]Department of Obstetrics and Gynecology, Hospital Lusíadas Porto, Porto, Portugal

Section 2 – Answer

Case description

A 38-year-old female with secondary infertility started complaining of severe dysmenorrhea after leaving the combined pill in order to conceive. Physical examination revealed a hard and painful nodule at mid-line on the abdominal wall, beneath the cesarean section scar, a fix uterus, and a painful hard mass rectal digital examination, 3 cm away from the anus. Abdominal wall soft tissue ultrasound revealed a nodule of heterogeneous echogenicity with 41 mm × 34 mm × 17 mm located medially at the level of the rectus abdominis muscle, under the C-section scar [Figures 1-3]. Abdominal magnetic resonance imaging (MRI) confirmed the presence of a nodule with 4.9 cm × 3.8 cm × 2.0 cm on the rectus abdominis muscle and its fascia [Figures 4 and 5]. Pelvic transvaginal ultrasound revealed normal uterus and right adnexa and a cyst at the left ovary with 30 mm × 26 mm, with no septa or solid components and with ground glass echogenicity.

A 5 cm hard mass was surgically removed from the rectus abdominis muscle and fascia [Figures 6 and 7]. Several pelvic adhesions were present destroying completely the pelvic anatomy. An ovarian cyst at the left adnexa with dark brown liquid inside and an enlarged left Fallopian tube were removed.

What is the Diagnosis?

Interpretation

This patient complained of severe dysmenorrhea after stopping oral pill using and had a secondary infertility. At physical examination, 2 hard and firm nodules were detected, one pelvic and other under previous cesarean section scar. These clinical findings together with her symptoms were highly suggestive of endometriosis. The patient was submitted to laparotomy and both nodule and ovarian cyst were removed. Histological examination of the specimens revealed endometriosis.

Endometriosis is a chronic disease affecting almost 10% of women. It is defined as the presence of ectopic endometrial tissue in any part of the body. Its exact physiopathology is unknown, some say it is due to retrograde menses, genetic predisposition, but many other theories have been proposed so far.[1] The most common sites of endometriotic implants are the ovaries (endometrioma), pelvic peritoneum (superficial endometriosis), the recto-vaginal septum, and the uterosacral ligaments (deep infiltrative endometriosis [DIE]). Women with previous cesarean sections may develop nodules of endometriosis underneath the scar.[2] Even though extremely rare, there are reports of abdominal wall endometriosis without previous surgeries.[3] The main symptoms of endometriosis are pain and infertility. A wide variety of pain may be caused by this disorder, including dysmenorrhea, dyspareunia, chronic pelvic pain, or pain at the site of the disease.[4] Infertility is thought to be associated with pelvic anatomy distortion due to adhesions, especially if affecting the Fallopian tubes, and the pro-inflammatory status caused by the ectopic tissue that can be harmful to oocytes, embryos, and normal endometrium.[5]

The diagnosis of endometriosis is based on clinical findings and may be complement with imagiological examinations targeting the affected area. The gold standard imagiologic examinations are pelvic ultrasound and MRI, with good overall sensitivity, especially for endometriomas (with the typical heterogeneous echogenicity – ground-glass appearance) and DIE.[6] The sensitivity of these examinations for superficial peritoneal nodules is much lower due to the usual small size (<3 mm) of

Address for correspondence: Dr. Pedro Brandão, Department of Reproductive Medicine, Instituto Valenciano de Infertilidad, Plaza de la Policia Local 3, 46015 Valencia, Spain.
E-mail: pedro.brandao@ivirma.com

Received: 04-05-2020 **Revised:** 17-06-2020 **Accepted:** 07-08-2020 **Available Online:** 01-10-2020

Access this article online

Quick Response Code:

Website: www.jmuonline.org

DOI: 10.4103/JMU.JMU_71_20

How to cite this article: Gonçalves-Henriques M, Brandão P, Almeida A, Ramôa P. Cesarean section scar nodule, ovarian cyst, and dysmenorrhea. J Med Ultrasound 2021;29:302-4.

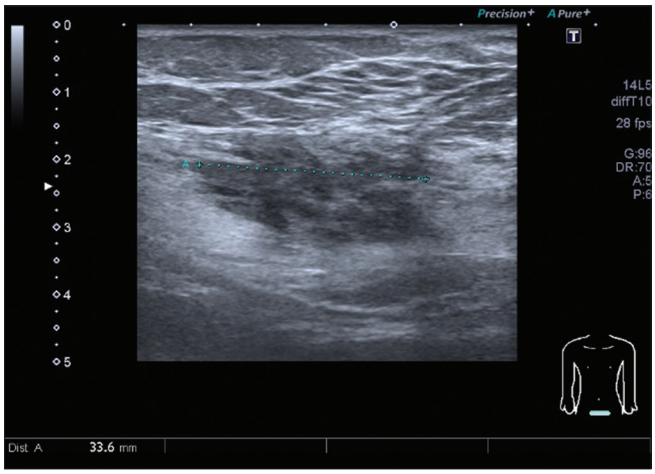

Figure 1: Abdominal soft tissue ultrasound in the axial plane revealing abdominal wall nodule

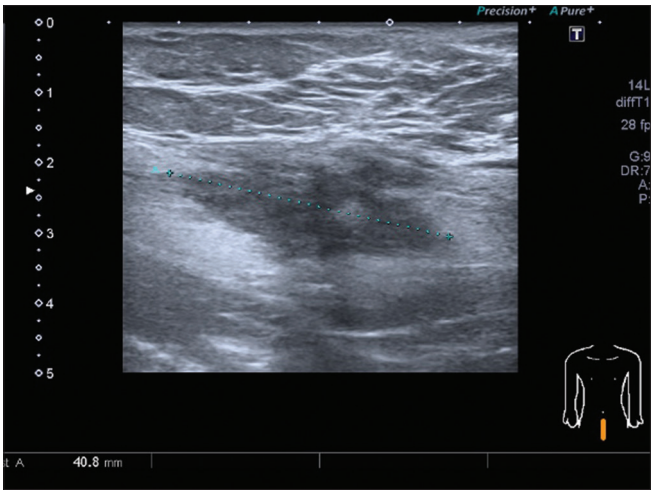

Figure 2: Abdominal soft tissue ultrasound in the sagittal plane revealing abdominal wall nodule

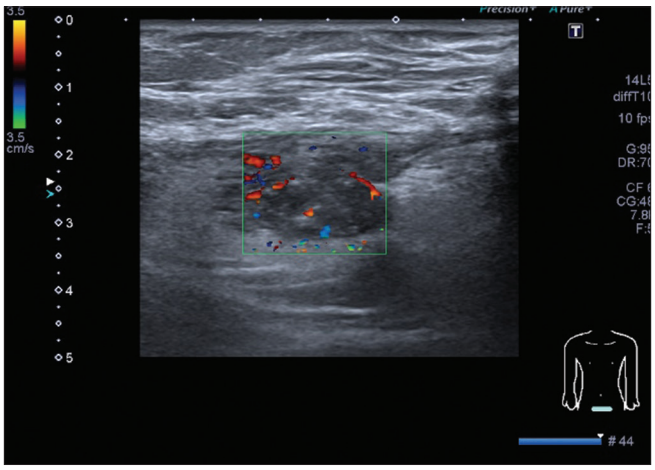

Figure 3: Abdominal soft tissue ultrasound in the axial plane with color Doppler revealing vascularized abdominal wall nodule

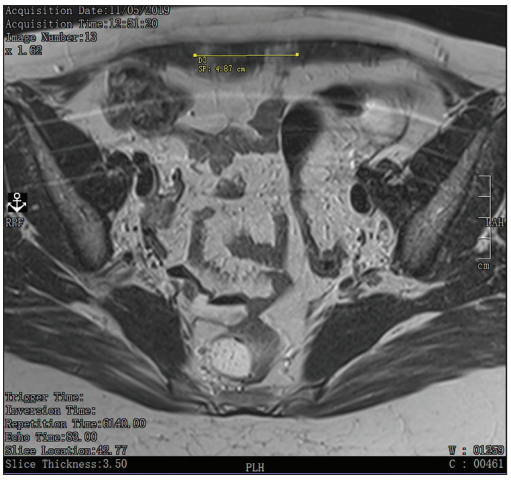

Figure 4: Abdominal magnetic resonance imaging in the axial plane revealing abdominal wall nodule

Figure 5: Abdominal magnetic resonance imaging in sagital plane revealing abdominal wall nodule

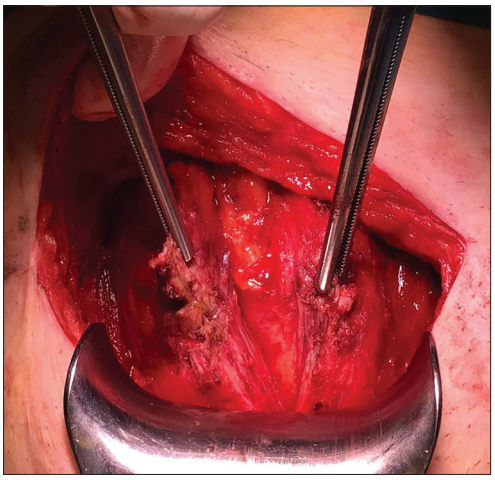

Figure 6: Hard median nodule involving both rectus abdominis muscles and fascia (*in vivo* picture).

these lesions. In cases of abdominal scar endometriosis, both soft tissue ultrasound and MRI are reasonable alternatives to support the diagnosis. These lesions usually appear as heterogeneous, mostly hypoechoic, solid, irregular round, or oval nodules.[7]

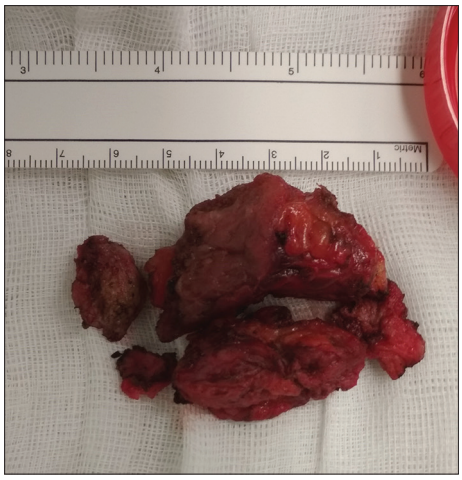

Figure 7: Hard median nodule with 5 cm length removed from the rectus abdominis muscles and fascia (*ex vivo* picture).

Definitive diagnosis is based on histological examination of the specimens through surgical intervention like laparoscopy. One must keep in mind that the differential diagnosis with other entities may not be easy, including malignancy.[8]

The treatment of endometriosis is directed to pain control and management of the infertility, sometimes resorting to assisted reproductive treatments.[9] In severe or refractory cases, surgery may be indicated. As a hormone dependent disorder, endometriosis tends to be controlled by ovarian inhibition, such as during pregnancy, after menopause or with any medication blocking the hypothalamus–pituitary–ovary axis, such as the combined pill, progestin-based therapies, or GnRh agonists.[10]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Rolla E. Endometriosis: Advances and controversies in classification, pathogenesis, diagnosis, and treatment. F1000Res 2019;8.
2. Karapolat B, Kucuk H. A rare cause of abdominal pain: Scar endometriosis. Emerg Med Int 2019;2019:2584652.
3. Adolfo D, Brandão P, Ramôa P, Almeida A. Umbilical endometriosis in a patient without abdominal surgery. Obstet Gynecol Int J 2018;9:326-7.
4. Alimi Y, Iwanaga J, Loukas M, Tubbs RS. The clinical anatomy of endometriosis: A review. Cureus 2018;10:e3361.
5. Tomassetti C, D'Hooghe T. Endometriosis and infertility: Insights into the causal link and management strategies. Best Pract Res Clin Obstet Gynaecol 2018;51:25-33.
6. de Almeida A, Fernandes LF, Averbach M, Abrão MS. Disc resection is the first option in the management of rectal endometriosis for unifocal lesions with less than 3 centimeters of longitudinal diameter. Surg Technol Int 2014;24:243-8.
7. Grigore M, Socolov D, Pavaleanu I, Scripcariu I, Grigore AM, Micu R. Abdominal wall endometriosis: An update in clinical, imagistic features, and management options. Med Ultrason 2017;19:430-7.
8. Ferrandina G, Palluzzi E, Fanfani F, Gentileschi S, Valentini AL, Mattoli MV, *et al*. Endometriosis-associated clear cell carcinoma arising in caesarean section scar: A case report and review of the literature. World J Surg Oncol 2016;14:300.
9. Garrido N, Bellver J, Remohí J, Simón C, Pellicer A. Cumulative live-birth rates per total number of embryos needed to reach newborn in consecutive *in vitro* fertilization (IVF) cycles: A new approach to measuring the likelihood of IVF success. Fertil Steril 2011;96:40-6.
10. Garcia-Velasco JA, Quea G. Medical treatment of endometriosis. Minerva Ginecol 2005;57:249-55.