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## Rectus abdominal endometriosis on cesarean scar<sup>☆</sup>



### Endometriosis en el músculo recto anterior del abdomen sobre cicatriz de cesárea

Endometriosis is a common entity with a prevalence of 8–15%.<sup>1–5</sup> It is characterised by the presence of endometrial glands and stroma outside the uterine cavity.<sup>1–3,5</sup> Extrapelvic endometriosis has been described in 8.9% of cases,<sup>2</sup> and can present in almost any organ. Its localisation in the anterior rectus abdominis muscle is rare, and is normally associated with previous cesarean section.<sup>1,3,5,6</sup> Preoperative diagnosis is uncommon, and is normally obtained after resection of the lesion.<sup>1,3</sup>

We present the case of an endometrioma of the anterior rectus abdominis muscle, related to a previous cesarean section.

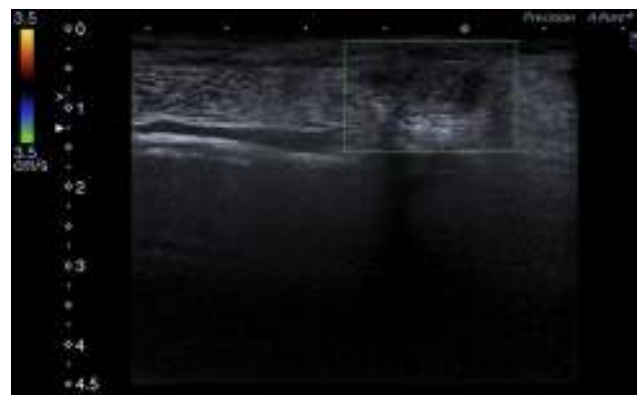
A 32-year-old woman on follow-up in gastroenterology outpatients for ileocolic Crohn disease had started to experience cyclic abdominal pain, with appearance of a mass close to the scar resulting from a cesarean section performed 10 years previously. Abdominal ultrasound showed a 4.7 cm × 3 cm solid lesion inside the right anterior rectus abdominis muscle, hypoechoic with respect to the muscle and with no flow on colour Doppler imaging, in addition to 3 cystic lesions on its periphery (Figs. 1 and 2). All findings were suggestive of endometrioma. Magnetic resonance imaging (MRI) requested for better characterisation showed the lesion to be T1-hypointense relative to surrounding muscle, containing hyperintense foci on fat-suppressed T1-weighted images, suggestive of haemorrhagic foci (Figs. 3 and 4). Ultrasound-guided fine needle aspiration (FNA) found cytology consistent with endometriosis. As the patient was asymptomatic and did not wish to undergo surgery, it was initially decided to monitor the lesion by ultrasound. She is currently receiving only analgesic treatment on demand, with which she controls the cyclic episodes

of abdominal pain. The lesion has remained stable in the follow-up ultrasounds, and comparable to the size at diagnosis.

Endometriosis localised in the anterior rectus abdominis muscle is rare, with only one case series having been described in the medical literature to date.<sup>1</sup> Like endometriomas of the anterior abdominal wall in general, it is related with a previous history of cesarean section,<sup>6</sup> where it is estimated to present in between 0.03% and 1.0% of patients



**Figure 1** Abdominal ultrasound in which a solid, heterogeneous lesion, hypoechoic relative to muscle, can be seen in the right anterior rectus abdominis muscle.

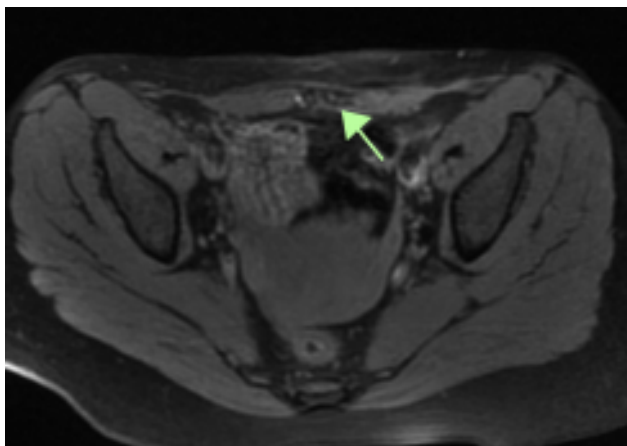


**Figure 2** Colour Doppler ultrasound showing no Doppler signal inside the endometrioma.

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**Figure 3** Coronal T1-weighted MRI slice, in which a 24 mm × 11 mm lesion, hypointense relative to muscle, can be seen.



**Figure 4** Axial fat-saturated T1-weighted MRI slice showing a hypoechoic lesion containing hyperintense images, consistent with haemorrhagic foci.

who have undergone this procedure.<sup>1-3,5</sup> A slight increase in incidence (an average of 0.8%) has been observed in recent years, probably due to a rise in the number of cesarean deliveries.<sup>5</sup> It is more common in young women in their thirties.<sup>1,6</sup> The most common symptoms are abdominal pain, occasionally associated with a mass.<sup>1,6</sup> Like endometriomas of the abdominal wall in general, which present with abdominal pain, 75% of cases are non-catamenial, although the pain associated with the menstrual cycle is considered characteristic; in 84.1% of patients it is associated with an abdominal mass.<sup>1,3-5,7</sup>

There are several theories that attempt to explain the pathogenesis of this entity. The implantation theory—the most widely accepted—suggests that the endometrial cells exit through the Fallopian tubes or the surgical incision and implant in pelvic structures. Other theories propose endometrial cell metaplasia, and vascular or lymphatic dissemination.<sup>1-5,7</sup>

Endometriomas of the anterior abdominal wall are chiefly diagnosed by ultrasound or MRI.<sup>6</sup> Their ultrasound characteristics are a hypoechoic, heterogeneous mass, with internal echoes, more rarely solid or even with cystic changes (pools of blood secondary to a recent bleed). They are usually accompanied by a hyperechoic halo due to inflammation of the surrounding tissue.<sup>4,5</sup> Colour Doppler shows a vascular pedicle at the periphery, with low intralésional signal intensity.<sup>7</sup> The lesion appears as a solid mass on computed tomography (CT), isodense relative to muscle, while on MRI it appears as isointense to muscle on T1-weighted images and as high signal intensity on T2-weighted images, both with contrast uptake in the arterial phase.<sup>5</sup> All these features are very non-specific for making a correct preoperative diagnosis, which is only achieved in 20–50% of cases,<sup>4,5,7</sup> probably due to low clinical suspicion due to the non-specific nature of the symptoms, and their late development (between 2 and 5 years after the surgery).<sup>2,3,5,7</sup> Ultrasound-guided FNA is the first approach to determine the nature of the lesion. It is limited by the scant cellularity in cystic or bleeding lesions, which is insufficient for a correct histological diagnosis, as well as the frequent atypia of the glandular cells, which makes differential diagnosis difficult. The presence of 2 of the 3 typical components (endometrial glandular cells, stromal cells or macrophages with haemosiderin) confirms the diagnosis of endometriosis by FNA.<sup>8,9</sup> Its use is still not clear due to the risk of creating new implants.<sup>4</sup> CA-125 determination is not recommended owing to its low sensitivity.<sup>1,7</sup>

The treatment of choice is extensive surgical resection with negative margins.<sup>1,3-6</sup> When localised in the abdominal muscles, as in our case, it also requires en-bloc resection of the underlying fascia.<sup>1-3</sup> A recurrence rate of 4.3% has been described, although it is not known how the size of the surgical margin affects this.<sup>3,4</sup> Some authors recommend the use of preoperative hormone therapy to reduce the size of the lesion prior to surgery, although there is little evidence in this respect.<sup>2,3,7</sup> There is a risk of malignancy (1%), which has been described in some cases of endometriomas of the anterior abdominal wall.<sup>4</sup>

In conclusion, endometriosis of the anterior rectus abdominis is a rare entity that should be borne in mind in women with previous cesarean section and recurrent abdominal pain.

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