

**Endometrial osseous metaplasia: sonographic, radiological and histopathological findings**

*Metaplasia óssea endometrial: aspecto ultrassonográfico, radiológico e histopatológico*

Dear Editor,

A 31-year-old, female patient with previous history of spontaneous miscarriage with uterine curettage eight years ago, undergoing investigation for secondary infertility, increased menstrual flow and pelvic pain.

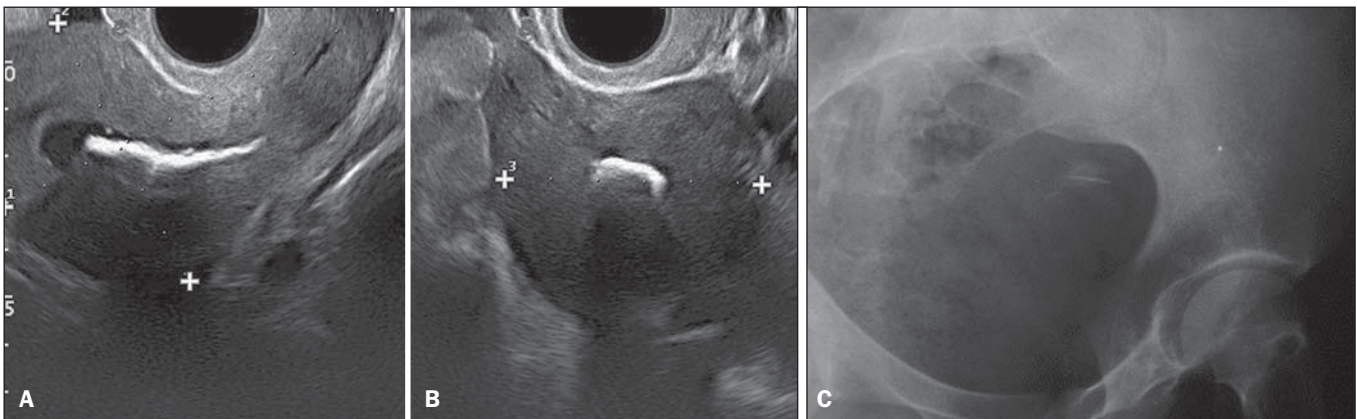
Transvaginal ultrasonography (US) (Figures 1A and 1B) showed a hyperechoic endometrial, nonspecific, plate-shaped image with posterior acoustic shadowing, and measuring 2.7 × 2.6 cm. Pelvic radiography (Figure 1C) identified a focus of calcification at endometrial site.

On the basis of the imaging findings and clinical history, the presumptive diagnosis was endometrial osseous metaplasia, confirmed by histopathological study revealing the presence of a plate of trabecular bone tissue surrounded by fibrous tissue and proliferative endometrium (Figure 2). Cartilage, bone marrow, chronic inflammation and trophoblastic tissue were not present.

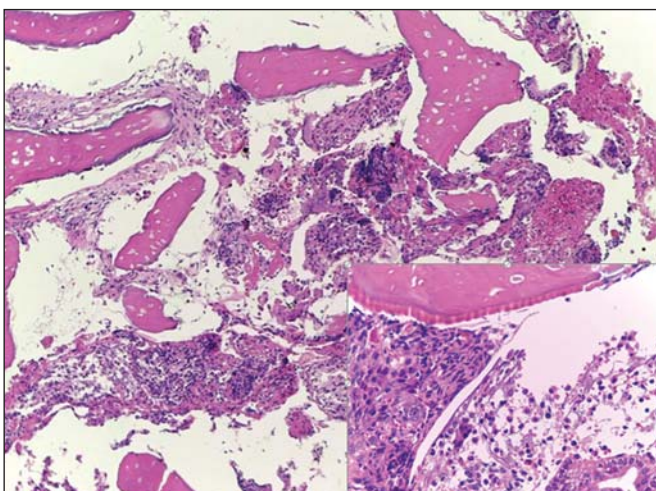
Endometrial osseous metaplasia corresponds to the presence of bone-like tissue within the uterine cavity. It is a rare entity, affecting only 0.15% of the patients referred to hysteroscopy clinics<sup>(1,2)</sup>.

The pathogenesis of such a condition still remains controversial. The two most accepted mechanisms involve either the presence of chronic endometrioses with undifferentiated mesenchymal cells inducing the endometrial stromal cells transformation into osteoblasts, or miscarriage with dystrophic ossification of the residual ovular tissues<sup>(3)</sup>. Such hypotheses are reinforced as one considers that more than 80% of cases occur after pregnancies that evolved to miscarriage, particularly those followed by infection<sup>(4)</sup>. Symptoms include pelvic pain and menstrual flow alterations, but the main consequence of the presence of bone tissue in the uterine cavity is infertility<sup>(5)</sup>. The association between osseous metaplasia and infertility occurs because of the similarity between the action of the bone tissue and the action of an intrauterine contraceptive device (IUCD)<sup>(6,7)</sup>.

The main sonographic finding of endometrial osseous metaplasia is the presence of a strongly echogenic endometrial plate with posterior acoustic shadowing, assuming the presence of an IUD as main differential diagnosis. Other possible diagnoses include: presence of foreign bodies, Asherman's syndrome, calcified submucosal fibrosis and Müllerian tumor<sup>(2,5,6)</sup>. However, the suspicion of endometrial osseous metaplasia should be taken into consideration by the sonographer in cases where strongly echogenic endometrial plates are detected in patients with history of miscarriage and chronic endometriosis.



**Figure 1. A,B:** Transvaginal ultrasonography demonstrating hyperechoic image with posterior acoustic shadowing in the endometrium, compatible with calcification. **C:** Hip radiography, oblique view showing an image with calcific density corresponding to the one found at ultrasonography, strengthening the suggested hypothesis.



**Figure 2.** Photomicrography with low and medium magnification showing osseous trabeculae intermingled with endometrial tissue. Observe the endometrial glands at the lower right corner. Hematoxylin-eosin staining.

In the presently reported case, the correlation between transvaginal US and pelvic radiography has allowed for the diagnosis of endometrial calcification. The previous history of miscarriage with curettage has corroborated the hypothesis of calcification corresponding to osseous metaplasia induced by chronic endometritis, which later was confirmed by histopathological analysis of bone fragments collected by means of hysteroscopy.

Transvaginal US is the best imaging method in such cases, since hysterosalpingography and magnetic resonance imaging may miss the findings. In such cases, the investigator must describe the location and the dimensions of the echogenic plate, rule out the presence of an IUCD, and reinforce the history of miscarriage with chronic endometritis, corroborating the hypothesis of metaplastic endometrial ossification. Such informations are important for the hysteroscopist who will make the resection of the osseous plate with subsequent histopathological analysis.

The treatment for this condition should be performed by means of hysteroscopic removal of osseous fragments to be submitted to histopathological analysis or, as a second option by uterine curettage<sup>(8)</sup>. In the present case, the first alternative was

adopted and the patient had her fertility restored and her menstrual flow reduced.

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**Mesothelioma of the tunica vaginalis in a patient with giant hydrocele**

*Mesotelioma da túnica vaginal em um paciente com hidrocele gigante*

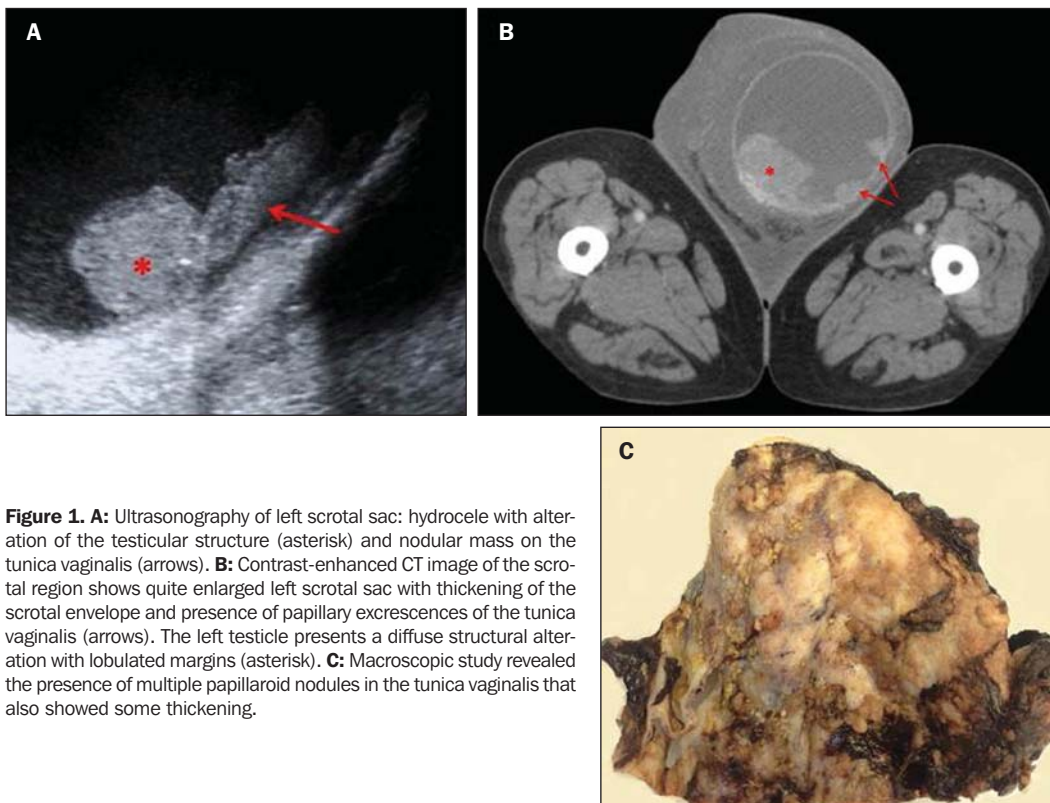
Dear Editor,

We present the case of an 82-year-old male patient who attended our hospital emergency department complaining of pain and enlargement of his left scrotal sac. The patient reported progressive scrotal enlargement evolving over more than 20 years. He did not report any exposure to asbestos. Physical examination revealed an enlarged scrotal sac with increased temperature and testicles not easily palpable. Complete blood count revealed leukocytosis with neutrophilia ( $11.37 \times 10^3/\mu\text{L}$ ).

Testicular ultrasonography was performed, showing left hydrocele with approximately 1100 mL in volume and dense echoes inside, making it difficult to evaluate the testis. The right testis

was displaced upwards, toward the inguinal canal. Given the impossibility of performing an adequate examination of the left testis, we performed a CT scan of the testicular region. The scan revealed a large hydrocele with dense contents. The left testis showed a diffuse alteration of its structure with a lobulated margin and nodular thickening of the tunica vaginalis. During his hospital stay, the patient presented with cardiovascular instability (arterial pressure of 85/53 mmHg) and was submitted to emergency left orchietomy with surgical drainage of the abscess, causing a complicated hydrocele.

Anatomopathological analysis led to the diagnosis of malignant mesothelioma of the tunica vaginalis testis that largely infiltrated the tunica vaginalis, testicular parenchyma and the rest of paratesticular structures (epididymis and rete testis). Immunohistochemical study showed: calretinin (+), WT1 (+), CK7 (+), EMA (+) and p53 (+).



**Figure 1. A:** Ultrasonography of left scrotal sac: hydrocele with alteration of the testicular structure (asterisk) and nodular mass on the tunica vaginalis (arrows). **B:** Contrast-enhanced CT image of the scrotal region shows quite enlarged left scrotal sac with thickening of the scrotal envelope and presence of papillary excrescences of the tunica vaginalis (arrows). The left testicle presents a diffuse structural alteration with lobulated margins (asterisk). **C:** Macroscopic study revealed the presence of multiple papillaroid nodules in the tunica vaginalis that also showed some thickening.