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http://dx.doi.org/10.1590/0100-3984.2016.0205

**Subinvolution of the placental site associated with focal retained products of conception and placenta accreta mimicking uterine arteriovenous malformation on CT and MRI: a lesson to be learned**

*Dear Editor,*

Here, we report the case of a 36-year-old female patient (G5A4P1, undergoing cesarean section of twins) with a history of antiphospholipid antibody syndrome, gestational hypertension, and having undergone hysteroscopic procedures. On postpartum day 12, there was voluminous vaginal bleeding. Given the diagnostic hypothesis of retained products of conception (RPOC)—based on the finding of serum b-HCG values close to zero—we opted for clinical follow-up with ultrasound evaluations, which invariably showed a grossly nodular echogenic formation, measuring 2.2 cm at its greatest diameter and located near the basal endometrium, with internal vascular flow seen on color Doppler (Figure 1A). After approximately 60 days, the condition of the patient had not improved and the decision to perform curettage was therefore made. During the procedure, she bled profusely (500 mL) and became hypotensive. We did not identify any RPOC. Subsequent imaging of the pelvis, including a computed tomography (CT) scan (Figure 1B) and magnetic resonance imaging (MRI) scans (Figures 1C and 1D), confirmed the presence of a nodular formation near the basal endometrium, with intense contrast enhancement and communicating with a network of dilated and tortuous myometrial vessels. In correlation with the clinical data (bleeding that was difficult to resolve, significant worsening during surgical manipulation, and the absence of RPOC on curettage), the CT and MRI findings allowed the possibility of acquired arteriovenous malformation (AVM) to be considered[1]. Because conservative treatment was unsuccessful, we opted to perform a hysterectomy. The pathological diagnosis was RPOC in a focal area of placenta accreta with subinvolution of the placental site (SIPS).

In cases such as the one described here, the first pitfall is confusing the marked vascularization of RPOC with MAVs[2]. It should be borne in mind that RPOC occur much more frequently than do AVMs[3], and it is therefore recommended that focal areas of uterine hypervascularity are simply reported as such, without necessarily relating them to AVMs[4]. In addition,

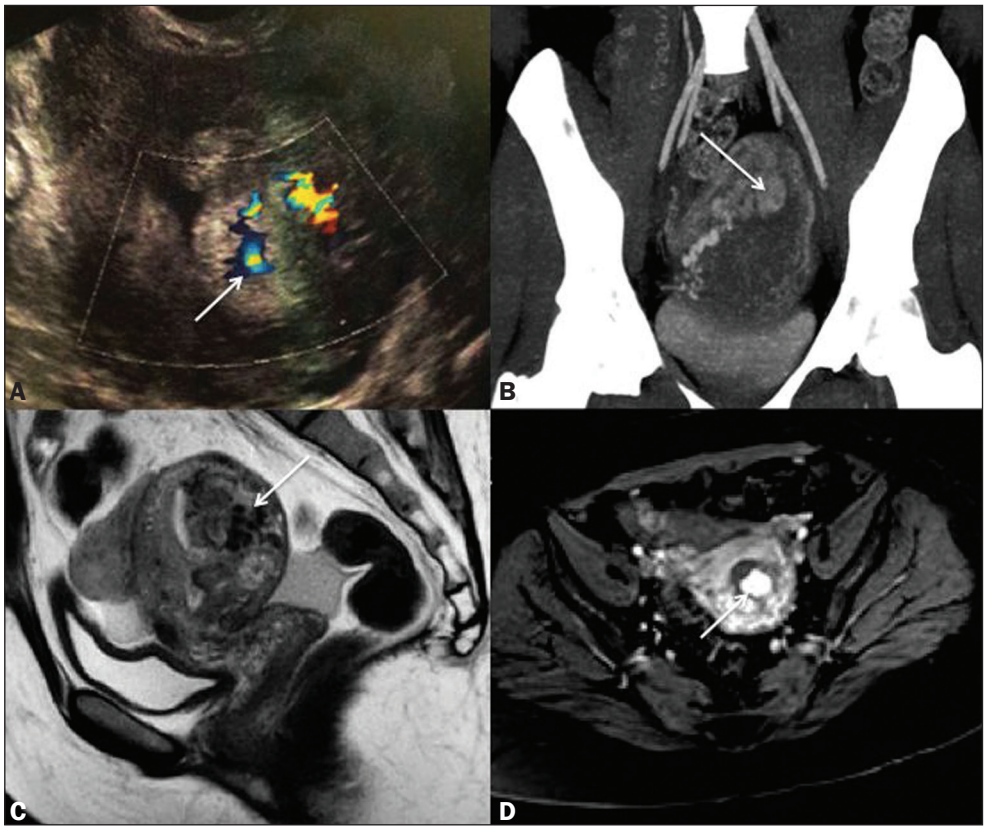


**Figure 1. A:** Transvaginal ultrasound showing a heterogeneous endometrial echo, with flow seen on the color Doppler study, especially in a grossly nodular formation in the basal region (arrow). **B:** Contrast-enhanced CT scan with maximum intensity projection reconstruction identifying prominent myometrial and periuterine vessels in communication with the hypervascularized nodular area (arrow). **C,D:** Contrast-enhanced MRI scans (sagittal T2-weighted and axial T1-weighted sequences, respectively) confirming the marked vascular dilatation, characterized by a flow void in the posterior uterine wall (arrow in **C**) and intense vascularization of the basal nodule (arrow in **D**).

an endometrial component of those focal changes favors a diagnosis of RPOC, whereas an unmistakably intramural component increases the suspicion of AVM[2].

The second pitfall in cases such as this is the association with LIPS, an entity that can occur in the presence of RPOC (usually determined by focal accretions) or in isolation[5,6]. The prominent myometrial/periuterine vessels seen in patients with LIPS are indistinguishable from the findings in those with AVMs[2]. Therefore, because it is a rare diagnosis that is fundamentally histopathological[5,7] and little discussed in the radiology literature, it is likely that LIPS also accounts for a portion of the cases of overdiagnosis[4] and unconfirmed diagnosis of AVMs. Nevertheless, AVM is still rarer than in LIPS[2,6].

In summary, when there is postpartum vaginal bleeding in a patient with normal b-HCG values and a finding of uterine hypervascular focal alteration, an endometrial component (RPOC) should first be excluded. When this differentiation is not clear, and especially when anomalous dilated myometrial vessels are detected in the adjacent areas, a diagnosis of LIPS accompanied by RPOC should be considered as a possible alternative to that of AVMs. The diagnosis of AVM can be confirmed by digital angiography, or the differentiation between the two diagnoses can be made through pathological study[1,4].


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http://dx.doi.org/10.1590/0100-3984.2016.0131

**Juvenile fibroadenoma**

*Dear Editor,*

A 17-year-old black female presented with palpable nodules in both breasts. Five months prior, she had noticed abrupt growth, consequently undergoing ultrasound (Figure 1) and magnetic resonance imaging (Figure 2). Due to the growth of the lesions over a short period of time, ultrasound-guided core biopsy was requested for a better diagnostic evaluation (Figure 3).

In children and adolescents, most of the clinical conditions that result in an increase in breast size or nodules in the breast are of a benign nature. A unilateral increase in breast size is most commonly related to abnormal breast development, whereas nodules in the breast are most commonly related to fibroadenoma. Such nodules present a low risk of becoming malignant, are hormone-dependent, and can shrink after menopause[1].

Juvenile (or cellular) fibroadenomas, which account for 7–8% of all histological fibroadenoma subtypes, present accelerated growth and have a predilection for young black females[2,3]. At diagnosis, 10–25% of juvenile fibroadenoma patients have multiple or bilateral tumors, as in the case presented here. The biological behavior of juvenile fibroadenoma is one of a rapidly growing lesion affecting the breast, some patients showing skin ulceration and superficial venous distention[3,4].

Ultrasound examination is the main tool used in the diagnostic investigation of breast lesions in young patients, being highly sensitive for the detection and monitoring of fibroadenomas. In the vast majority of cases, they have a typical appearance—an oval, circumscribed, hypoechoic nodule, with its longest axis parallel to the skin, with or without vascularization on a Doppler study. In older patients, such nodules can show calcium or necrotic degeneration, mimicking aggressive lesions[5]. On magnetic resonance imaging, fibroadenoma can exhibit a variety of behaviors. In the great majority of cases, fibroadenoma lesions show a hypointense or isointense signal in T2-weighted sequences and internal septations; after intravenous administration of paramagnetic contrast medium, the pattern of enhancement can be type I (progressive ascending curve), type II (plateau curve), or absent[6].

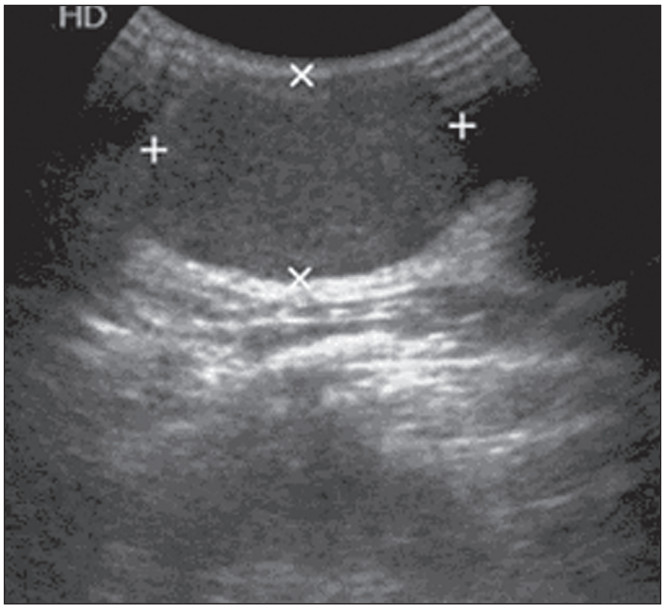


**Figure 1.** Ultrasound showing oval, circumscribed, hypoechoic nodules, with their longest axis parallel to the skin, suggestive of lesions that are probably benign in nature.

The main differential diagnosis of fibroadenoma is a phyllodes tumor, which can be of a malignant or benign nature, making it fundamental to perform biopsy with histological analysis in order to differentiate between the two. Giant fibroadenomas and phyllodes tumor can be indistinguishable by imaging methods[2–4].

Knowledge of the clinical history, the characteristics identified by imaging methods, and the histological correlation with morphologic changes or growth of the nodules of more than 20% over a short period of time provide the tools necessary for