

25–35% in individuals without an ICA, compared with 2–4% in the general population. Less commonly, it may be associated with delayed neuropsychomotor development and agenesis of the corpus callosum, especially in patients with bilateral carotid agenesis<sup>(7,8)</sup>. In addition, this anomaly has major implications for the planning and execution of endarterectomy and transphenoidal pituitary surgery. In the present case, the patient had no aneurysms or other associated malformations.

We conclude that ICA agenesis is rare and usually asymptomatic. However, careful examination of the vascular signal on magnetic resonance imaging and of carotid canals on CT, in search of stenoses (responsible for common neurological complaints), may lead to the detection of this condition, which, although asymptomatic, can be accompanied by other potentially serious diseases.

REFERENCES

- Lie TA. Congenital anomalies of the carotid arteries. Amsterdam: Excerpta Medica; 1968.
- Padgett DH. The development of the cranial arteries in the human embryo. *Contrib Embryol.* 1948;32:207–62.
- Kahraman AS, Kahraman B, Ozdemir ZM, et al. Congenital agenesis of

right internal carotid artery: a report of two cases. *J Belg Soc Radiol.* 2016;100:48.

- Janicki PC, Limbacher JP, Guindo FC Jr. Agenesis of the internal carotid artery with a primitive transsellar communicating artery. *AJR Am J Roentgenol.* 1979;132:130–2.
- Naeini RM, De J, Satow T, et al. Unilateral agenesis of internal carotid artery with ophthalmic artery arising from posterior communicating artery. *AJR Am J Roentgenol.* 2005;184:571–3.
- Dinç H, Alioglu Z, Erdöl H, et al. Agenesis of the internal carotid artery associated with aortic arch anomaly in a patient with congenital Horner's syndrome. *AJNR Am J Neuroradiol.* 2002;23:929–31.
- Neves WS, Kakudate MY, Cêntola CP, et al. Agenesis of the internal carotid artery: a case report. *Radiol Bras.* 2008;41:63–6.
- Jeong SH, Hong HS, Park S, et al. Congenital absence of the internal carotid artery. *J Soonchunhyang Med Sci.* 2010;16:9–15.

**Eduarda Lemes Dias<sup>1,a</sup>, Luiz Gonzaga da Silveira Filho<sup>1,b</sup>, Arthur de Freitas Ferreira<sup>1,c</sup>**

1. Universidade Federal do Triângulo Mineiro (UFTM), Uberaba, MG, Brazil.  
 Correspondence: Dra. Eduarda Lemes Dias. Universidade Federal do Triângulo Mineiro. Avenida Frei Paulino, 30, Nossa Senhora da Abadia. Uberaba, MG, Brazil, 38025-180. E-mail: [duda.lemes@hotmail.com](mailto:duda.lemes@hotmail.com).  
 a. <https://orcid.org/0000-0002-0213-1165>; b. <https://orcid.org/0000-0002-2541-5400>;  
 c. <https://orcid.org/0000-0001-6722-2458>.  
<http://dx.doi.org/10.1590/0100-3984.2017.0070>



Ruptured endometrioma: main imaging findings

Dear Editor,

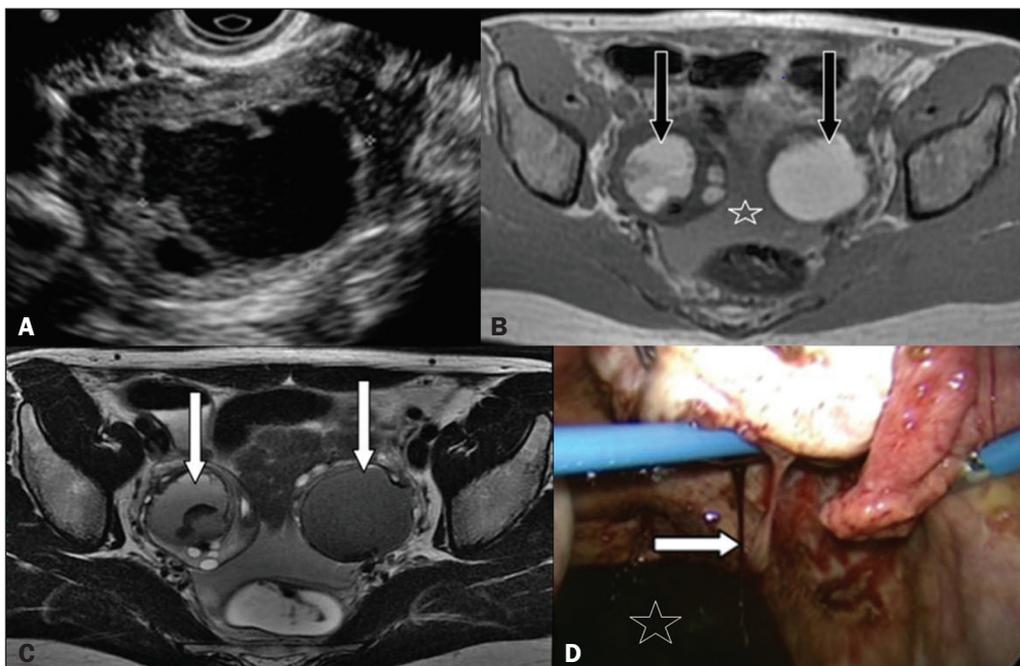
A 28-year-old woman presented with a 12-h history of acute pelvic pain. Physical examination revealed signs of peritonitis, and laboratory tests showed mild anemia. The patient underwent transvaginal ultrasound (TVUS) of the pelvis (Figure 1A) and magnetic resonance imaging (MRI) of the pelvis (Figures 1B and 1C). She also underwent laparoscopy, which confirmed the presence of bilateral ovarian endometriosis, with a rupture on the right side (Figure 1D).

The presumptive diagnosis of endometriosis is based on a clinical history consistent with the diagnosis and abnormal

laboratory tests, including elevation of CA-125, a marker that, although nonspecific, is usually elevated in women with the disease<sup>(1)</sup>. Despite the important role of imaging examinations, notably TVUS and MRI of the pelvis in the diagnosis and staging of endometriosis, it should be noted that the gold standard for the definitive diagnosis is still laparoscopy<sup>(1,2)</sup>.

The ovaries are among the sites most commonly affected by endometriosis (in 20–40% of cases). Endometriomas are thick-walled cysts containing dark, thick degenerated blood products. In some cases, there can be a fluid-fluid level, representing bleeding of various chronologies, giving them the typical macroscopic appearance of “chocolate cysts”, which can be transposed to imaging exams<sup>(3)</sup>. They are bilateral in approximately 50% of cases<sup>(2,4)</sup>.

**Figure 1.** **A:** TVUS showing a cyst with irregular contours and hypoechoic content in the right ovary. **B,C:** MRI of the pelvis showing formations with high signal intensity in T1-weighted images (**B**) and low signal intensity in T2-weighted images (“shading” in **C**, arrow) in both ovaries, with irregular contours in the right ovary. Fluid content in the pelvic cavity with high signal intensity on the T1-weighted image (**B**), indicating hemoperitoneum. This set of findings is suggestive of bilateral endometriomas, with signs of rupture of the right endometrioma. **D:** Image obtained in laparoscopic access of the pelvic cavity showing active bleeding (arrow) in the right ovary and blood content collected in the pelvic recess (star), findings that correspond to those seen on TVUS and MRI.



The rupture of an endometrioma is a rare event, with an estimated incidence of less than 3% among women of child-bearing age who are known to have endometriomas<sup>(5)</sup>. This situation occurs more commonly during pregnancy, due to hormonal stimulation of endometrial stromal elements<sup>(2)</sup>, albeit with larger ( $\geq 6.0$  cm) lesions<sup>(6)</sup>.

The imaging aspect of endometrioma is that of an ovarian cyst with heterogeneous content, irregular contours, and parietal discontinuity, together with hemoperitoneum, which can be seen as heterogeneous fluid content on ultrasound and as a collection with a hyperintense signal in T1-weighted MRI sequences. In an emergency setting, its presentation may mimic other acute gynecological conditions, such as corpus luteum, ectopic gestation, and even spontaneous hemoperitoneum<sup>(7,8)</sup>. In addition, the rupture of endometriomas can significantly increase serum CA-125 levels, mimicking ovarian epithelial neoplasms<sup>(9)</sup>. However, a history of endometrioma, previous examinations demonstrating endometriomas, or endometriomas accompanied by peritoneal blood content in emergency imaging studies should raise the suspicion of spontaneous rupture.

The importance of the preoperative diagnosis is to support treatment strategies. Although some milder cases can be managed conservatively, there is a tendency toward greater use of early surgical exploration because of long-term undesirable effects of cyst fluid in the peritoneal cavity, such as adhesions, pelvic pain, and infertility<sup>(6)</sup>. In addition, the presumptive diagnosis of ruptured endometrioma, rather than ovarian neoplasms, facilitates the decision to perform laparoscopic exploration and allows the surgeon to perform the procedure with greater confidence.

## REFERENCES

1. Siegelman ES, Oliver ER. MR imaging of endometriosis: ten imaging pearls. *Radiographics*. 2012;32:1675–91.
2. Chamié LP, Blasbalg R, Pereira RM, et al. Findings of pelvic endometriosis at transvaginal US, MR imaging, and laparoscopy. *Radiographics*. 2011;31:E77–100.
3. Bastos BB, Fonseca EKUN, Yamauchi FI, et al. Chocolate cyst with ground glass appearance in endometriomas. *Abdom Radiol (NY)*. 2017;42:2957–8.
4. Togashi K, Nishimura K, Kimura I, et al. Endometrial cysts: diagnosis with MR imaging. *Radiology*. 1991;180:73–8.
5. Evangelinakis N, Grammatikakis I, Salamalekis G, et al. Prevalence of acute hemoperitoneum in patients with endometriotic ovarian cysts: a 7-year retrospective study. *Clin Exp Obstet Gynecol*. 2009;36:254–5.
6. Huang YH, Hsieh CL, Shiao CS, et al. Suitable timing of surgical intervention for ruptured ovarian endometrioma. *Taiwan J Obstet Gynecol*. 2014;53:220–3.
7. Lucey BC, Varghese JC, Anderson SW, et al. Spontaneous hemoperitoneum: a bloody mess. *Emerg Radiol*. 2007;14:65–75.
8. Brown DL, Dudiak KM, Laing FC, et al. Adnexal masses: US characterization and reporting. *Radiology*. 2010;254:342–54.
9. Rani AK, Kapoor D. Ruptured ovarian endometrioma with an extreme rise in serum CA 125 level – a case report: ovarian endometrioma with very high CA-125 level. *Gynecol Oncol Case Rep*. 2012;2:100–1.

**Eduardo Kaiser U. N. Fonseca<sup>1,a</sup>, Bruna Bringel Bastos<sup>1,b</sup>, Fernando Ide Yamauchi<sup>1,c</sup>, Ronaldo Hueb Baroni<sup>1,d</sup>**

1. Hospital Israelita Albert Einstein, São Paulo, SP, Brazil.

Correspondence: Dr. Fernando Ide Yamauchi. Hospital Israelita Albert Einstein – Departamento de Imagem. Avenida Albert Einstein, 627, Jardim Leonor. São Paulo, SP, Brazil, 05652-900. E-mail: fernando.yamauchi@einstein.br.

a. <https://orcid.org/0000-0002-0233-0041>; b. <https://orcid.org/0000-0001-9875-8458>;

c. <https://orcid.org/0000-0002-4633-3711>; d. <https://orcid.org/0000-0001-8762-0875>.

<http://dx.doi.org/10.1590/0100-3984.2017.0092>



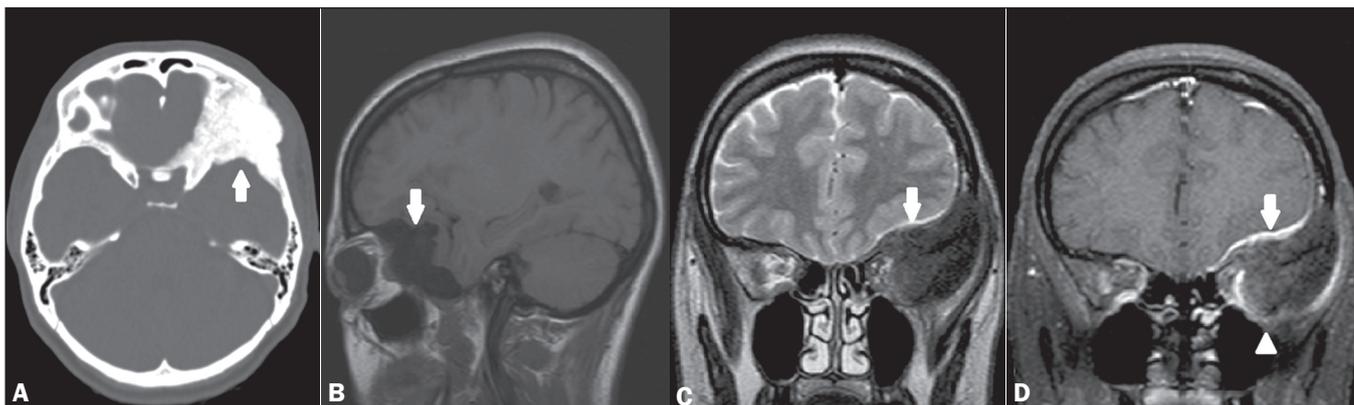
### Primary intrasosseous meningioma: atypical presentation of a common tumor

Dear Editor,

A 41-year-old woman presented with an approximately one-year history of progressive facial swelling and left-sided visual impairment. A computed tomography (CT) scan of the skull showed a sclerotic, expansile lesion on the lateral/upper wall of the left orbit, narrowing and extending to the optic canal. Magnetic resonance imaging (MRI) showed a lesion with a

hypointense signal in T1-weighted and T2-weighted sequences, without significant contrast uptake, accompanied by a slight contrast-enhanced thickening of the subjacent dura mater, which was compressing the left optic nerve. A histopathological study confirmed the suspected diagnosis of intrasosseous meningioma.

Recent studies in the radiology literature of Brazil have emphasized the importance of imaging examinations in improving the diagnosis of central nervous system disorders<sup>(1–3)</sup>. Meningioma is the most common primary intracranial tumor,



**Figure 1.** **A:** Axial CT scan, with bone window settings, showing an expansile, osteoblastic lesion, affecting the upper/lateral wall of the left orbit (arrow). **B:** Noncontrast sagittal T1-weighted MRI sequence, showing a lesion with a hypointense signal (arrow). Also note the compressive effect and displacement of the intraorbital structures, including the optic nerve. **C:** Coronal T2-weighted MRI sequence, also showing the lesion with a hypointense signal (arrow). **D:** Contrast-enhanced coronal T1-weighted MRI sequence, showing a lack of significant contrast uptake within the lesion (arrowhead), with only slight uptake in the dura mater subjacent to the tumor (arrow).