

Figure 1. Ultrasound (A); sagittal T2-weighted MRI sequence (B); out-of-phase T1-weighted gradient-echo MRI sequence (C); and in-phase T1-weighted gradient-echo MRI sequence (D). Note the expansile cystic lesion with heterogeneous content, containing numerous oval formations that were hyperechoic on the ultrasound and showed intermediate signal intensity in the T1- and T2-weighted sequences, with no evidence of signal loss in the out-of-phase T1-weighted gradient-echo sequence.

MRI, the fat seen within the lesion produces a hyperintense signal on T1-weighted images and signal loss in fat-saturated sequences^(3,5,7). In rare cases, the presentation of MCT is atypical, which can be a diagnostic challenge for radiologists^(2,6). Multiple small floating spheres within a large cyst, as observed in the case presented here, is one of those rare presentations, known as the "floating ball" presentation^(4,6). Histologically, the spheres are composed of keratin, fibrin, hemosiderin, sebaceous debris, hair, and fat, in variable proportions (2,6,13). Although the mechanism of formation of these spheres has yet to be clarified, it is speculated that it involves aggregation of sebaceous material around a nidus^(2,4,14). The mobility of the spheres is due to their low density relative to the other content of the cyst^(2,4,6). A finding of multiple floating spheres within a single large cyst has not been reported for other types of tumors and is therefore considered pathognomonic of MCT^(2,4,6,14-16).

REFERENCES

 Rha SE, Byun JY, Jung SE, et al. Atypical CT and MRI manifestations of mature ovarian cystic teratomas. AJR Am J Roentgenol. 2004;183: 743–50.

Self-limiting thoracic aortic dissection during bronchial artery embolization

Dear Editor,

A 75-year-old woman presented with a 3-week history of intermittent hemoptysis related to a history of recurrent episodes of pneumonia. Chest computed tomography (CT) showed cylindrical bronchiectasis in the lingula, and bronchoscopy showed clots in the left bronchial tree. Bronchial arteriography was requested and revealed a shunt (Figure 1A) between the left bronchial ar-

- Tandon A, Agarwal R, Tandon R, et al. Multiple intracystic floating balls: an unusual but unique sonographic pattern of mature cystic teratoma. BMJ Case Rep. 2011;2011:bcr0320113962.
- Park SB, Kim JK, Kim KR, et al. Imaging findings of complications and unusual manifestations of ovarian teratomas. Radiographics. 2008;28: 969–83.
- Gürel H, Gürel SA. Ovarian cystic teratoma with a pathognomonic appearance of multiple floating balls: a case report and investigation of common characteristics of the cases in the literature. Fertil Steril. 2008;90:2008.e17–9.
- Outwater EK, Siegelman ES, Hunt JL. Ovarian teratomas: tumor types and imaging characteristics. Radiographics. 2001;21:475–90.
- Tongsong T, Wanapirak C, Khunamornpong S, et al. Numerous intracystic floating balls as a sonographic feature of benign cystic teratoma: report of 5 cases. J Ultrasound Med. 2006;25:1587–91.
- Heo SH, Kim JW, Shin SS, et al. Review of ovarian tumors in children and adolescents: radiologic-pathologic correlation. Radiographics. 2014; 34:2039–55.
- Salvadori PS, Bomfim LN, von Atzingen AC, et al. Spontaneous rupture of ovarian cystadenocarcinoma: pre- and post-rupture computed tomography evaluation. Radiol Bras. 2015:330–2.
- Lima LLA, Parente RCM, Maestá I, et al. Clinical and radiological correlations in patients with gestational trophoblastic disease. Radiol Bras. 2016;49:241–50.
- Guerra LFA, Pessanha LB, Oliveira GA, et al. Endometrial osseous metaplasia: sonographic, radiological and histopathological findings. Radiol Bras. 2016;49:62–3.
- Queiroz RM, Costa PP, Oliveira NYF, et al. Female urethral diverticulum containing a urothelial carcinoma. Radiol Bras. 2016;49:406–7.
- Manikkavasakar S, Ramachandram A, Ramalho M, et al. Malignant uterine disease with concurrent miometrial contraction at MRI: a possible source of overstaging. Radiol Bras. 2016;49:342–3.
- Donnadieu AC, Deffieux X, Le Ray C, et al. Unusual fast-growing ovarian cystic teratoma during pregnancy presenting with intracystic fat "floating balls" appearance. Fertil Steril. 2006;86:1758–9.
- Altinbas SK, Yalvac S, Kandemir O, et al. An unusual growth of ovarian cystic teratoma with multiple floating balls during pregnancy: a case report. J Clin Ultrasound. 2010;38:325–7.
- Rao JR, Shah Z, Patwardhan V, et al. Ovarian cystic teratoma: determined phenotypic response of keratocytes and uncommon intracystic floating balls appearance on sonography and computed tomography. J Ultrasound Med. 2002;21:687–91.
- Kawamoto S, Sato K, Matsumoto H, et al. Multiple mobile spherules in mature cystic teratoma of the ovary. AJR Am J Roentgenol. 2001;176: 1455–7.

Ana Paula Barroso Pazinatto Espindola¹, Viviane Brandão Amorim², Hilton Augusto Koch¹, Paulo Roberto Valle Bahia², Márcio V. P. Almeida²

1. Pontificia Universidade Católica do Rio de Janeiro (PUC-Rio), Rio de Janeiro, RJ, Brazil. 2. Centro Estadual de Diagnóstico por Imagem do Rio de Janeiro (CEDI), Rio de Janeiro, RJ, Brazil. Mailing address: Dra. Ana Paula Barroso Pazinatto Espindola. Rua Vinícius de Moraes, 71, Ipanema. Rio de Janeiro, RJ, Brazil, 22411-010. E-mail: apazinatto@yahoo.com.br.

http://dx.doi.org/10.1590/0100-3984.2015.0155

tery and the left pulmonary artery. During manual-injection digital subtraction angiography, enhancement and stagnation of the contrast media were observed in a false lumen of the descending thoracic aorta (Figures 1B and 1C), consistent with iatrogenic aorta dissection. The iatrogenic aortic dissection extended to the left bronchial artery, leading to obstruction of blood flow to the shunt. However, there were no signs of hemodynamic instability, and the patient therefore received conservative therapy with clinical and radiological monitoring. A second CT scan, obtained 7 days later, showed that the iatrogenic aorta dissection was stable



Figure 1. A: Left bronchial arteriography showing a shunt (arrowheads) between the left bronchial artery (LBA) and the left pulmonary artery (LPA). B,C: Stagnation of the contrast media (arrowheads) can be seen at the false lumen of the descending thoracic aorta, indicating dissection. D: Coronal CT reconstruction at 7 days after bronchial arteriography showing persistence of the contrast media in the false lumen of the thoracic aorta (arrows), with no increase in the extent of the dissection.

(Figure 1D), and a third scan, obtained 5 months later, showed total resolution. During 7 months of follow-up, the patient reported no pain or new episodes of bleeding.

During endovascular procedures, iatrogenic aortic dissection can occur when the tip of the catheter is pushed into the vessel wall during catheterization, as well as when high-pressure jets of contrast media are directed toward the vessel wall. Although uncommon, iatrogenic aortic dissection accounts for approximately 5% of all thoracic aortic dissections^(1,2). In a review article, Ittrich et al.⁽³⁾ showed rates of subintimal short segment dissection of the aorta during bronchial arteriography ranging from 1% to $6.3\%^{(4,5)}$, although there are virtually no images of such dissections in the literature. There is no standard for the management of iatrogenic thoracic aorta dissection. Uncomplicated dissection of the descending thoracic aorta is a relatively benign process, and complete spontaneous resolution is observed in most cases. Pharmacological treatment to control pain and blood pressure is recommended, as is short-term follow-up with $CT^{(6-8)}$.

REFERENCES

- 1. Nienaber CA, Fattori R, Mehta RH, et al. Gender-related differences in acute aortic dissection. Circulation. 2004;109:3014–21.
- 2. Januzzi JL, Sabatine MS, Eagle KA, et al. Iatrogenic aortic dissection. Am J Cardiol. 2002;89:623–6.
- 3. Ittrich H, Klose H, Adam G. Radiologic management of haemoptysis:

diagnostic and interventional bronchial arterial embolisation. Rofo. 2015; 187:248–59.

- 4. Uflacker R, Kaemmerer A, Picon PD, et al. Bronchial artery embolization in the management of hemoptysis: technical aspects and long-term results. Radiology. 1985;157:637–44.
- Mal H, Rullon I, Mellot F, et al. Immediate and long-term results of bronchial artery embolization for life-threatening hemoptysis. Chest. 1999;115:996–1001.
- Erbel R, Aboyans V, Boileau C, et al. 2014 ESC Guidelines on the diagnosis and treatment of aortic diseases: document covering acute and chronic aortic diseases of the thoracic and abdominal aorta of the adult. The Task Force for the Diagnosis and Treatment of Aortic Diseases of the European Society of Cardiology (ESC). Eur Heart J. 2014;35:2873– 926.
- LeMaire SA, Russell L. Epidemiology of thoracic aortic dissection. Nat Rev Cardiol. 2011;8:103–13.
- Nienaber CA, Divchev D, Palisch H, et al. Early and late management of type B aortic dissection. Heart. 2014;100:1491–7.

Rafael Dahmer Rocha¹, Joaquim Maurício da Motta-Leal-Filho¹, Francisco Leonardo Galastri¹, Breno Boueri Affonso¹, Humberto Bogossian¹, Felipe Nasser¹

1. Department of Interventional Radiology and Pulmonology, Hospital Israelita Albert Einstein, São Paulo, SP, Brazil. Mailing address: Dr. Rafael Dahmer Rocha. Avenida Albert Einstein, 627/701, Jardim Leonor. São Paulo, SP, Brazil, 05652-900. E-mail: rafaeldrocha@gmail.com.

http://dx.doi.org/10.1590/0100-3984.2015.0216