signal in T2-weighted sequences and post-contrast enhancement, some showing heterogeneity with necrotic areas. Schwannomas show a hypointense signal in T2-weighted sequences and intense post-contrast enhancement. In contrast, cystadenomas present as a well-defined, usually unilateral, multilocular cystic mass with a hypointense signal in T2-weighted sequences and discrete enhancement(6,10,13,14).

Solid seminal vesicles lesions are quite rare and have poorly specific imaging characteristics. However, we can rely on the well-established diagnostic parameters of other abdominal solid lesions, such as ovarian and renal tumors, as a line of reasoning for the suspicion of benignity.

REFERENCES

1. D'Ippolito G, Lima ACM, Peddi Neto L, et al. Neoplasias sólidas de ovário: análise sistematizada e ensaio iconográfico. Rev Imagem. 2006;28:165–70.
2. Sousa CSM, Viana IL, Miranda CLVM, et al. Hemangioma of the urinary bladder: an atypical location. Radiol Bras. 2017;50:271–2.
3. Leapman MS, Wang ZJ, Behr SC, et al. Impact of the integration of proton magnetic resonance imaging spectroscopy to PI-RADS 2 for prediction of high grade and high stage prostate cancer. Radiol Bras. 2017;50:299–307.
4. Fernandes AM, Paim BV, Vidal APA, et al. Pheochromocytoma of the urinary bladder. Radiol Bras. 2017;50:199–200.
5. Espindola APBP, Amorim VB, Koch HA, et al. Atypical presentation of mature cystic teratoma ("floating balls"). Radiol Bras. 2017;50:206–7.
6. Lima LLA, Parente RCM, Maestá I, et al. Clinical and radiological correlation in patients with gestational trophoblastic disease. Radiol Bras. 2016;49:241–50.
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.
8. Arnold SJ, Lin FC, Eldersveld JM, et al. Seminal vesicle leiomyoma mimicking extra-prostatic extension of prostatic adenocarcinoma. Urol Case Rep. 2016;6:18–20.
9. Shaikh AS, Bakhshi GD, Khan AS, et al. Leiomyoma of the seminal vesicle: a rare case. Clin Pract. 2013;3:e12.
10. Reddy MN, Verma S. Lesions of the seminal vesicles and their MRI characteristics. J Clin Imaging Sci. 2014;4:61.
11. Shiotsu T, Kawai N, Sato M, et al. Leiomyoma of the seminal vesicle. Jpn J Radiol. 2009;27:218–20.
12. Kim K, Kawashima A, Ryu JA, et al. Imaging of the seminal vesicle and vas deferens. Radiographics. 2009;29:1105–21.
13. Dagur G, Warren K, Suh Y, et al. Detecting diseases of neglected seminal vesicles using imaging modalities: a review of current literature. Int J Reprod Biomed (Yazd). 2016;14:293–302.
14. Zhu JG, Chen WH, Xu SX, et al. Cystadenoma in a seminal vesicle is cured by laparoscopic ablation. Asian J Androl. 2013;15:697–8.

Tatiane Souza Oliveira¹, Dimitrius Nikolaos Jaconi Stamoulis², Luís Ronan Marquez Ferreira de Souza³, Antonio Carlos Oliveira Meneses⁴, Monise Marques Môri⁵

¹. Universidade Federal do Triângulo Mineiro (UFTM), Uberaba, MG, Brazil. 2. Hospital das Clínicas da Universidade Federal do Triângulo Mineiro (UFTM), Uberaba, MG, Brazil. Mailing address: Dr. Dimitrius Nikolaos Jaconi Stamoulis, Hospital das Clínicas – UFTM. Avenida Getúlio Guaíra, 130, Nossa Senhora da Abadia. Uberaba, MG, Brazil, 38025-440. E-mail: dimitriuss@hotmail.com. http://dx.doi.org/10.1590/0100-3984.2016.0159

Pericardial synovial sarcoma: radiological findings

Dear Editor,

An 18-year-old male patient was admitted to the hospital with a 15-day history of cough and fatigue. Cardiac auscultation revealed muffled heart sounds. A chest X-ray obtained at admission showed an increase in the cardiac silhouette and moderate pleural effusion on the right. An echocardiogram was performed, which demonstrated a significant pericardial effusion with signs of diastolic restraint and a rounded, hypoechoic mass with regular contours, measuring 3.6 × 3.9 cm, located posterior to the right atrium. The patient underwent pericardiocentesis, with analysis of the fluid collected. Computed tomography (CT) of the chest and cardiac magnetic resonance imaging (MRI) were requested. The chest CT (Figures 1) revealed a solid, heterogeneous mass with contrast enhancement in the posterior portion of the pericardial sac, associated with pericardial effusion and pleural effusion. In the cardiac MRI (Figure 2), a solid mass with a heterogeneous content measuring 3.2 × 6.1 × 3.9 cm was observed in the posterior portion of the pericardial sac, with adhesion points and significant heterogeneous contrast uptake (as determined by the delayed enhancement technique), as well as pericardial inflammation. Based on the imaging findings suggestive of neoplasm and the inconclusive pericardial fluid cytologic findings, we decided to perform surgical resection of the mass. The histopathological examination of the surgical specimen resulted in a diagnosis of synovial sarcoma. After one month of hospitalization, the patient was discharged to oncology outpatient follow-up.

Cardiac MRI has taken on an ever-increasing role in the study of cardiovascular diseases(1–4). Pericardial synovial sarcoma is a primary malignant tumor of the pericardium that is histologically similar to the synovium and originates from mesenchymal cells(5). It is an extremely rare disease, the exact prevalence of which remains unknown, with a slight predilection for young males(6). The symptoms range from none to pericardial effusion with cardiac tamponade, dyspnea, fever, weight loss, and embolic phenomena(7). Although the prognosis for pericardial synovial sarcoma is poor, some patients may benefit from

Figure 1. Contrast-enhanced chest CT. Coronal (A) and axial (B) slices in a mediastinal window, showing a solid heterogeneous mass with contrast enhancement in the posterior portion of the pericardial sac associated with pericardial effusion and pleural effusion on the right, together with pleural drainage.
surgical resection and radiotherapy, with or without chemotherapy\(^{(8,9)}\). In asymptomatic patients, the working diagnosis is based on incidental findings of lesions in cardiac imaging, whereas it is based on the findings of directed imaging tests in symptomatic patients; in either case, the diagnosis can be confirmed only through histopathological analysis\(^{(6,8)}\).

Although the tumor image is nonspecific on the echocardiogram of an individual with pericardial synovial sarcoma, it is fundamental for the initial detection of the disease, quantification of the pericardial effusion, evaluation of cardiac function, and evaluation of cardiac restraint, as well as allowing comparative analysis of the pericardial effusion, evaluation of cardiac function, and evalu- 

damental for the initial detection of the disease, quantification of the gram of an individual with pericardial synovial sarcoma, it is fun-

ac invasion, and to monitor the post-treatment evolution to observe the degree of vascularization, to better detail the cardi-

ation of pericardial synovial sarcoma, because it makes it possible to observe the degree of vascularization, to better detail the cardiac invasion, and to monitor the post-treatment evolution\(^{(10,11)}\). In this context, it can be concluded that, although the imaging tests do not confirm the diagnosis, they play a fundamental role in the detection and characterization, as well as in the preoperative and postoperative planning, of pericardial synovial sarcoma.

REFERENCES

1. Assunção FB, Oliveira DCL, Souza VF, et al. Cardiac magnetic resonance imaging and computed tomography in ischemic cardiomyopathy: an update. Radiol Bras. 2016;49:26–34.

2. Rochitte CE. Cardiac MRI and CT: the eyes to visualize coronary arterial disease and their effect on the prognosis explained by the Schrödinger’s cat paradox. Radiol Bras. 2016;49(1):vii–viii.

3. Faistauer A, Torres FS, Faccin CS. Right aortic arch with aberrant left innominate artery arising from Kommerell’s diverticulum. Radiol Bras. 2016;49:264–6.

4. Avelino MC, Miranda CLVM, Sousa CSM, et al. Free-floating thrombus in the aortic arch. Radiol Bras. 2017;50:406–7.

5. Bezerra SG, Brandão AA, Albuquerque DC, et al. Pericardial synovial sarcoma: case report and literature review. Arq Bras Cardiol. 2013;101: e103–e106.

6. Cheng Y, Sheng W, Zhou X, et al. Pericardial synovial sarcoma, a potential for misdiagnosis: clinicopathologic and molecular cytogenetic analysis of three cases with literature review. Am J Clin Pathol. 2012;137:142–9.

7. Chekroune T, Sahnouani S, Cherkaoui S, et al. Primary pericardial synovial sarcoma: a case report and literature review. JC Cases. 2014;9:40–3.

8. Salah S, Salem A. Primary synovial sarcomas of the mediastinum: a systematic review and pooled analysis of the published literature. ISRN Oncol. 2014;2014:412527.

9. Anand AK, Khanna A, Sinha SK, et al. Pericardial synovial sarcoma. Clin Oncol (R Coll Radiol). 2003;15:186–8.

10. Goldblatt J, Saxena P, McGriffin DC, et al. Pericardial synovial sarcoma: a rare clinical entity. J Card Surg. 2015;30:801–4.

11. Wu X, Chen R, Zhao B. Pericardial synovial sarcoma in a dyspnoeic female with tuberculous pericarditis: a case report. Oncol Lett. 2013;5:1973–5.

12. Restrepo CS, Vargas D, Ocazionez D, et al. Primary pericardial tumors. Radiographics. 2013;33:1613–30.

Diogo Costa Leandro de Oliveira\(^1\), Eduardo Oliveira Pacheco\(^2\), Larissa Teixeira Ramos Lopes\(^3\), Claudio Calazan do Carmo\(^3\), Alessandro Severo Alves de Melo\(^3\)

\(^{1}\)Universidade Federal Fluminense (UFF), Niterói, RJ, Brazil. \(^{2}\)Hospital Niterói D’Or, Niterói, RJ, Brazil. \(^{3}\)Grupo Oncologia D’Or, Niterói, RJ, Brazil. Mailing address: Dr. Alessandro Severo Alves de Melo. Hospital Universitário Antonino Pedro. Rua Marques de Paraná, 303, 2º andar, Centro, Niterói, RJ, Brazil. 24033-900. E-mail: alesssevero@gmail.com.

http://dx.doi.org/10.1590/0100-3984.2016.0200

Papillary tumor of the pineal region accompanied by Parinaud’s syndrome: magnetic resonance imaging findings

Dear Editor,

A 22-year-old male patient presented with a nonpulsatile, diffuse headache of moderate-intensity, with no aura or other associated symptoms. In the neurological exam, he presented paralysis of the vertical conjugate gaze with fixed downward glance, bilateral eyelid retraction, insufficiency of ocular convergence, pupils nonreactive to light, and preserved pupillary reaction to accommodation, characterizing Parinaud’s syndrome. Magnetic resonance imaging (MRI) showed an expansive lesion in the pineal region, with a discrete hyperintense signal in T1-weighted sequences and isointense in T2-weighted sequences, with cystic areas of diffusion, a discrete hyperintense signal in the diffusion, and marked gadolinium enhancement (Figure 1). The lesion caused compression of the cerebral aqueduct and dorsal midbrain, as well as causing hydrocephalus. Histopathological analysis demonstrated a papillary neoplasm composed of cuboidal cells, with an epithelial appearance, arranged on fibroconnective stromat, with evident vascularization, and mitotic activity (4 mitotic figures per 10 high-power fields). Immuno-histochemical analysis showed marked positivity for cytokeratins and for S-100 protein, together with negativity for neurofilament proteins. These findings are consistent with a papillary tumor of the pineal region (PTPR).

Figure 2. Cardiac MRI with delayed enhancement, in short-axis and long-axis views (A and B, respectively), showing a solid mass with a heterogeneous content, measuring 3.2 × 6.1 × 3.9 cm, in the posterior portion of the pericardial sac with adhesion points, with significant heterogeneous contrast uptake (as determined by the delayed enhancement technique), as well as pericardial inflammation.