chambers and chronic obstructive pulmonary disease, who was admitted due to pneumonia and autoimmune hemolytic anemia. In addition to PTE, this patient had pulmonary hypertension and right ventricular enlargement. Spontaneous echo contrast in the right heart chambers disappeared after a week with corticoid therapy and anticoagulation with low-molecular-weight heparin and warfarin. (6)

We report the case of a patient with SLE, septic shock, and autoimmune hemolytic anemia, with intense SEC detected in a rare location (right heart chambers, inferior vena cava, and suprahepatic veins). Different from the cases described above, no signs of PTE were found in our patient. Moreover, SEC disappeared with the remission of shock and "hemolytic crisis" under corticoid and gamma globulin therapy, and without anticoagulant therapy. Therefore, it would be reasonable to assume that the major SEC mechanism was erythrocyte aggregation caused by the interaction between red blood cells and auto-antibodies. The lower shear stress in the venous circulation (especially in septic shock) would contribute to SEC production in the right heart circulation. The absence of SEC in the left heart chambers would occur because the erythrocyte aggregation in "stacks of coins" or rouleaux disintegrate in the pulmonary microcirculation or are retained by the pulmonary capillaries acting as filter.

According to our review of the literature, this would be the first report of spontaneous echo contrast caused by this mechanism, in the absence of PTE, and disappearing without anticoagulant therapy.

Conflicts of interest

None declared.

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REFERENCES

1. Patel H, Boateng S, Singh G, Feinstein S. Spontaneous right-sided microcavitations in a healthy adult. Echo Research and Practice 2015;2:33-6. http://doi.org/bqbx

2. Black IW. Spontaneous echo contrast: where there's smoke there's fire. Echocardiography 2000;17:373-82. http://doi.org/b4vmq4

3. Fatkin D, Loupas T, Low J, Feneley M. Inhibition of red cell aggregation prevents spontaneous echocardiographic contrast formation in human blood. Circulation 1997;96:889-96. http://doi.org/bqbz

4. Rastegar R, Harmick DJ, Weidemann P, Fuster V, Coller B, Badimon JJ, et al. Spontaneous echo contrast video density is flow related and is dependent on the relative concentration of fibrinogen and red blood cells. J Am Coll Cardiol 2003;41:603-10. http://doi.org/d3txgn

5. Miller MR, Thompson WR, Casella JF, Spevak, PJ. Antibody-mediated red blood cell agglutination resulting in spontaneous echocardiographic contrast. Pediatr Cardiol 1999;20:287-9. http://doi.org/bgk56v

6. Dogan M, Sari M, Acikel S, Akyel A, Albayrak M, Yeter E. Dense spontaneous echo contrast in the right heart chambers of a patient with autoimmune hemolytic anemia. Herz 2014;39:767-9. http://doi.org/bqb2

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Recurrent Syncope in Patient with Multinodular Goiter

Syncope is a rare clinical manifestation of cervical tumors. (1) Its pathophysiology lies in the mechanical compression or irritation caused by the tumor on the carotid sinus and the IX cranial nerve (glossopharyngeal nerve). As a result, an exaggerated baroreflex response is triggered as the precursor of the so called neuromediated syncope. (2) We report a rare case of cervical goiter first manifested as syncope.

The case corresponds to a 67-year-old hypertensive and diabetic female patient, with chronic anemia secondary to atrophic gastritis. She had daily syncopal episodes of 2-month evolution, associated with movements of the neck and upper limbs. Physical examination revealed a palpable cervical tumor. Baseline ECG showed a sinus rhythm of 65 bpm, first-degree atrioventricular (AV) block (PR interval 220 ms), narrow QRS, and no other abnormalities (Figure 1A). Electrocardiographic monitoring during syncopes revealed a paroxysmal AV block with QRS intervals >3.5 seconds (Figure 1B and C). A thyroid ultrasound followed by a thorax CT scan confirmed the presence of a large left-sided multinodular goiter with bilateral

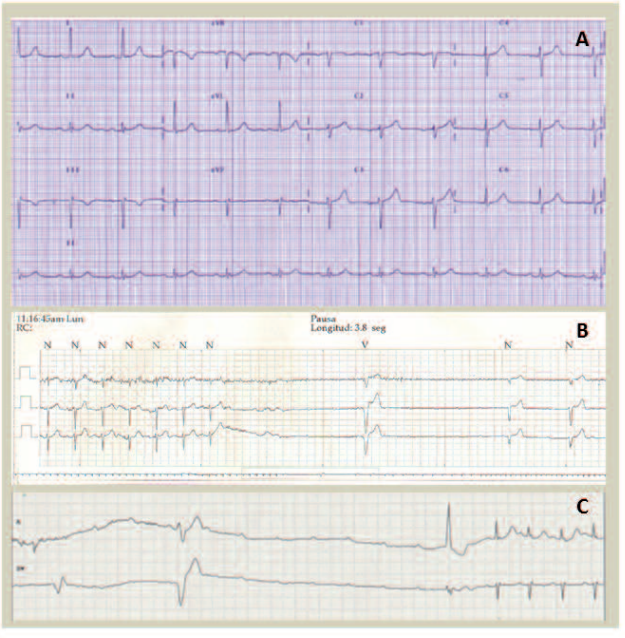

Fig. 1. A. Baseline ECG showing sinus rhythm with prolonged PR interval. **B** and **C**. Complete paroxysmal AV block during two syncopal episodes.

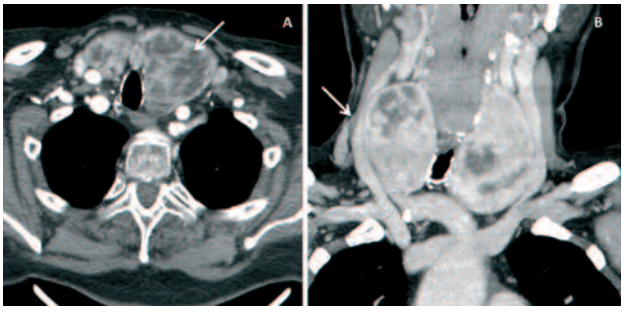

Fig. 2. Intrathoracic multinodular goiter. **A.** Axial plane computed tomography scan with contrast: large, solid, heterogeneous, well-defined tumor (arrow) that shifts the tracheal lumen to the right. **B.** Coronal multiplanar reconstruction showing the mass extending into the superior mediastinum to both carotid spaces.

extension to the carotid axes (Figure 2). No significant angiographic stenoses were observed in the carotid axes. The thyroid function test was compatible with normality. The echocardiography and electroencephalogram showed no pathological findings.

Placement of temporary pacemaker followed by surgery of the cervical goiter was performed. During postoperative hospitalization, the patient did not experience syncopes or dizziness, and no rhythm disturbances were monitored, so a permanent pacemaker implantation was unnecessary. The patient remained asymptomatic for a year. Thirteen months later, the patient consulted for lightheadedness. Electrocardiographic monitoring registered a second-degree AV block without cervical goiter recurrence; therefore, a dual-chamber permanent pacemaker was implanted.

Neurally mediated or reflex syncope derived from hypersensitivity of the carotid sinus is part of the "carotid sinus syndrome" (CSS). Typically, this syndrome has been divided into three types: cardioinhibitory, vasodepressor, and mixed type. The cardioinhibitory type progresses with sinus bradycardia or asystole, and rarely causes atrioventricular conduction disorders. (3) In our case, the patient had symptomatic complete AV block without sinus node dysfunction. Space occupying lesions in the head and neck commonly associated with CSS are glottis and nasopharyngeal squamous carcinomas, metastatic lymph nodes, parotid tumors and abscesses, among others. (4) This association between cervical mass and CSS has been described as "parapharyngeal space syndrome". In our case, the goiter extending into the supra-aortic trunks led us to consider the compression or irritation of the carotid sinus or glossopharyngeal pathway. After mass removal, the patient remained asymptomatic during hospitalization, and no rhythm disturbances were monitored. However, a year later the patient presented with lightheadedness and evidence of advanced AV block, so a permanent pacemaker was placed. On admission, the ECG showed a first-degree AV block with not very prolonged PR interval (220 ms) and narrow QRS, with no other abnormalities. We therefore believe that the cervical goiter was the extrinsic precipitating cause of the syncope. A limitation of this case was the inability to determine whether it was an infra-Hisian block, because a His bundle electrogram was unavailable; however, it is likely that, based on the patient's ECG and paroxysmal AV block, the electrophysiological study would not have been conclusive, and conduction intervals most likely would have been normal. Recurrence after a year suggests that, in cases of CSS with atrioventricular conduction disorders, instead of sinus dysfunction, the syncope etiology can be mixed and with an intrinsic conduction disorder, requiring longer follow-up.

Conflicts of interest

None declared.

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REFERENCES

1. Macdonald DR, Strong E, Nielsen S, Posner JB. Syncope from head and neck cancer. J Neurooncol 1983;1:257-67. http://doi.org/fspcv4

2. Weiss S, Baker J. The carotid sinus reflex in health and disease: its role in the causation of fainting and convulsions. Medicine 1933;12:297-354. http://doi.org/cdv9t2

3. Hong AM, Pressley L, Stevens GN. Carotid sinus syndrome secondary to head and neck malignancy: case report and literature review. Clin Oncol (R Coll Radiol) 2000;12:409-12. http://doi.org/fh7f2j

4. Córdoba López A, Torrico Román P, Inmaculada Bueno Álvarez-Arenas M et al. Síncope secundario a síndrome del espacio parafaríngeo. Rev Esp Cardiol 2001;54:649-51. http://doi.org/bqnh