A 31-year-old woman presented with blood pressure somewhat lower on the left compared with the right arm, hyposthenia, and left arm claudication. A vascular ultrasound examination demonstrated the absence of internal left carotid associated with left subclavian artery stenosis. A multidetector computed tomography using a 64-row scanner (Figure 1) confirmed the echographic results and revealed the presence of an aneurysm of origin of the subclavian artery (Kommerell diverticulum) in right aortic arch. The patient underwent hybrid percutaneous embolization treatment of the diverticulum and surgical reimplantation of the subclavian artery on the common carotid artery (Figure 2).

Internal left carotid agenesis is extremely rare. Most patients are asymptomatic because there is a sufficient cerebral circulation supplied by anastomosis in the circle of Willis and intracavernous and external carotid artery anastomosis. Kommerell diverticulum is a congenital abnormality of the aortic arch that is present in up to 60% of patients with an aberrant subclavian artery.\(^1\) Aberrant right subclavian artery occurs in \(\approx 0.5\%\) to 1.0% of the population, whereas aberrant left subclavian artery arising from a right aortic arch is extremely rare (0.05% to 0.1% of the population).\(^2\) The aneurysmal diverticulum, in most cases, passes through the retroesophageal space, causing dysphagia, dyspnea, stridor wheezing, cough, recurrent pneumonia, obstructive emphysema, or chest pain by structure compression.\(^2,3\)

Disclosures

None.

References


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Figure 1. A and B, Preoperative computed tomography angiography showing the Kommerell diverticulum (1) at the base of the left aberrant subclavian artery (2), the left common/external carotid artery (3), and the right aortic arch (4).

Figure 2. Postoperative computed tomography angiography showing the diverticulum percutaneous platinum coil embolization and the anastomosis between the left subclavian artery and the left common/external carotid artery.
Right Aortic Arch Related to Kommerell Diverticulum and Internal Carotid Artery Agenesis
Luca Dainese, Rita Spirito, Fabio Barili, Melissa Fusari, Piero Trabattoni, Simona Sommaruga, Daniele Andreini, Antioco Cappai and Paolo Biglioli

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