rhabdomyoblastic differentiation. We thus claimed the tumor histologically to be a primary cardiac leiomyoma arising in the layer of vascular endothelial cells, which was consistent with the previous report [6]. Given that the pedicle of the tumor was attached to the infundibulum of the right ventricle we believe that the tumor originated from intramyocardial feeding vessels, representing independent foci of smooth muscle proliferation. We hypothesized that the tumor cells grew and migrated toward the right ventricular outflow tract, where the infundibulum was pushed to form a protrusion with the tumor together. Serial echocardiogram follow-up is mandatory in order to monitor the recurrence of a cardiac tumor and the long-term prognosis.

This is the first case of primary cardiac leiomyoma originating from the infundibulum of the right ventricle, protruding as an intracardiac space occupying lesion of an adult woman, without evidence of intracardiac leiomymatosis or benign metastasizing leiomyoma. Related reports describe primary cardiac leiomyoma located either in the lateral free wall of the right ventricle or in the ventricular septum of asymptomatic adolescent boys [6, 7]. This presenting case has widened the spectrum of recognizing the intracardiac involvement of extraterine leiomyoma in adult women.

References

Paraplegia After Off-Pump Coronary Artery Bypass Grafting

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We report the case of a young patient who developed paraplegia after CABG without CPB. It is important to point out that this patient’s aorta was not manipulated in any way because the only graft performed was a left internal mammary artery to left anterior descending artery.

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Neurologic lesions are severe postoperative complications of coronary artery bypass graft (CABG) surgery. Among them, paraplegia is one of the rarest, with only a few cases reported. It is almost always related to the use of cardiopulmonary bypass (CPB). Those reports associate medullar ischemia with arterial hypotension, atherosclerotic microembolization caused by aortic clamping, or counterpulsation therapy.

The patient is a 31-year-old female with systemic arterial hypertension, insulin-dependent diabetes, chronic renal failure with hemodialysis for 2 years, and other comorbidities like hypothyroidism, dyslipidemia, mesenteric angina, and diabetic retinopathy, who underwent a PTCA [percutaneous transluminal coronary angioplasty] with stenting to the left anterior descending artery and right coronary artery. Her clinical presentation consisted of a history of recurrent and severe angina 1 year post-PTCA. Coronary angiography showed 70% restenosis of both stents and lesions of little concern in secondary coronary branches, requiring surgical treatment.

Surgery consisted of a single graft of the left internal thoracic artery to the left anterior descending artery without CPB. The right coronary artery was very thin and had distal vascular bed lesions, unsuited for CABG. The aorta was not manipulated in any way. There were no episodes of significant arterial hypotension intra-operatively. The patient was extubated while still in the surgical room with the use of low-dose noradrenaline. The first postoperative day was marked by a scenario of motor and sensitivity deficit in the lower limbs (muscle strength grade zero), with significant hyporeflexia and unaltered cerebellar and vestibular examinations. The T2-weighted magnetic resonance imaging showed hypersignal foci in the anterolateral areas of the spinal cord, ranging from the T3 to T6 segments, suggesting ischemic etiology (Fig 1). Imaging examinations of the aorta did not show any signs of dissection or other aortic alterations.

During outpatient follow-up the patient presented a partial recovery of motor function, being able to stand up with help after 6 months and to walk slowly after a year. Presently, the patient’s neurologic condition is stable.

Comment

Spinal cord ischemia is one of the rarest and most severe neurologic complications after CABG. It is most frequently observed in aortic surgeries [1]. Such condition
seems to be related to some factors such as perioperative hypotension, use of an IABP [intraaortic balloon pump], manipulation of the aorta, loss of the collateral circulation responsible for the medullar irrigation, and spinal cord lesions (such as intervertebral disk herniation and accidents occurring in the course of the regional anesthetic blockage) [2-8].

Singh and colleagues [2] reported 4 cases of patients who developed medullar ischemia of hypotensive etiology in the postoperative period of noncardiac surgeries. This study suggests vulnerability of the Adamkiewicz artery, one of the main arteries responsible for the anterior medullar territory irrigation. Gottesman and colleagues [3] describe a case of Brown-Séquard syndrome after the use of an IABP as it may cause instability and embolization of atherosclerotic material, which may cause the occlusion of small caliber arteries responsible for the medullar irrigation and subsequent ischemia, according to the autopsy results described by Harris and colleagues [4].

Saxena and colleagues [5] described a rare case of a patient submitted to CABG without CPB, who developed postoperative paraplegia. However, in such case the aorta was manipulated for proximal saphenous vein anastomosis. This may have caused the atherosclerotic material embolization and medullar ischemia due to arterial embolism.

Thomas and colleagues [9] described 2 cases of patients submitted to myocardial revascularization with concomitant peripheral artery disease, who had hypertensive crisis in the postoperative period, considered to be the cause of atheromatous embolism and its consequent occlusion of the medullar vessels. Such etiology was contested in the comment sent by Wong [6], who believes that medullar ischemia was caused by the use of sodium nitroprusside.

Our case report describes a patient in her third decade of life (younger when compared with the papers previously published), submitted to off-pump CABG without any type of aortic manipulation. Nevertheless, she presented several risk factors for arterial insufficiency such as diabetes, hypertension, dialytic chronic renal failure, dyslipidemia, and hypothyroidism. Clinical presentation showed a diffuse systemic arterial disease scenario, including retrosternal pain, mesenteric angina, peripheral arterial disease, and diabetic retinopathy. This led us to believe that a diffuse and chronic degeneration process of the arterial system was previously present by the time of surgery. As a result of that it is possible that the anterior medullar perfusion was also performed by collateral circulation, mainly from the internal thoracic artery. This pattern of medullar irrigation, responsible for medullar perfusion through anterior and posterior intercostal arteries supplying the Adamkiewicz artery, was previously reported by Yoshioka and colleagues [8]. Consequently, the use of the left internal thoracic artery as a graft for the anterior descending artery may have caused anterior medullar region ischemia due to the loss of its collateral circulation. It is important to highlight the high prevalence of dialytic chronic renal disease reported by the authors as an independent risk factor for vascular diseases (such as calcification and atherosclerosis), exacerbated inflammatory response, and postoperative hypotension, some of the factors that seem to be related to medullar ischemia.

References