

Embolic stroke as a perioperative complication of atrial myxoma

Infarto cerebral embólico como complicación perioperatoria de un mixoma auricular

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Abstract

Perioperative stroke is one of the complications that can occur during the surgical procedure and up to 30 days after it. A 52-year-old woman with no neurological symptoms and a diagnosis of intracardiac mass. She underwent cardiac surgery with resection of the tumor that was compatible with atrial myxoma. In the immediate postoperative, she presented neurological symptoms and was diagnosed with basal ganglia infarction of embolic etiology. Perioperative stroke appears most frequently in cardiovascular surgery but is rarely reported in heart tumor resection surgery.

Keywords: Stroke. Thoracic surgery. Myxoma.

Resumen

El ictus perioperatorio es una de las complicaciones que pueden presentarse durante el procedimiento quirúrgico y hasta 30 días después del mismo. Mujer de 52 años sin síntomas neurológicos y con diagnóstico de masa intracardíaca. Fue intervenida de cirugía cardíaca con resección de la tumoración compatible con mixoma auricular. En el postoperatorio inmediato presentó sintomatología neurológica y fue diagnosticada de infarto de ganglios basales de etiología embólica. El accidente cerebrovascular perioperatorio aparece con mayor frecuencia en la cirugía cardiovascular, pero rara vez se informa en la cirugía de resección de tumores cardíacos.

Palabras clave: Ataque. Cirugía Torácica. mixoma.

Introduction

Surgery is considered one of the therapeutic pillars of importance throughout the world, since there are various diseases that require it as a method of treatment. This can be performed electively or urgently,

and is associated with the appearance of complications, which occur not only during the surgical procedure, but up to 30 days afterward. The risk of complications resulting from surgery depends on both the patient's disease and the existence of comorbidity, the type of surgery, and the magnitude and duration

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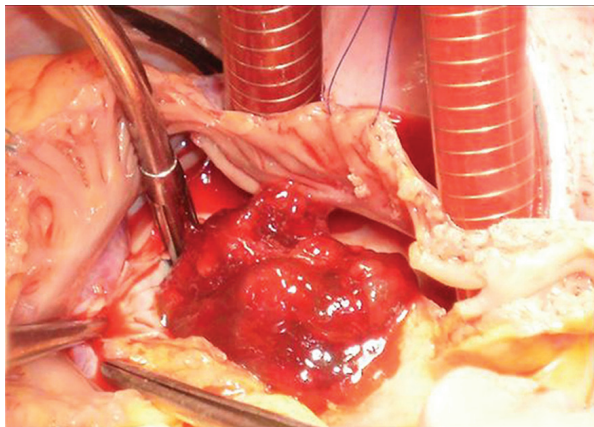


Figure 1. Atrial myxoma. The macroscopic characteristics of its surface are appreciated.

of the procedure. Perioperative cerebrovascular accident can appear as one of these complications, being associated with different degrees of morbidity and mortality. Most occur within the first postoperative day, with ischemic stroke being the most frequently reported relative to hemorrhagic stroke¹.

Clinical case

A 52-year-old woman with a history of bronchial asthma and episodes of exertional dyspnea of more than 6 months' duration. She was evaluated in her health area, where clinically and with complementary studies the presence of an intracardiac mass was confirmed, and she was referred to the cardiovascular surgery service. In this case, a transthoracic echocardiogram confirmed the presence of a mass with an irregular surface that occupied a large part of the left atrium, defining its surgical treatment. Due to the size of the lesion, the atrial approach was decided using the Guiraudon technique, which achieves a better surgical field. In the intraoperative period, a tumor of approximately 8 cm in diameter was found, bilobed, with a gelatinous and friable appearance, greenish and reddish in color, attached to the lateral wall and roof of the left atrium (Fig. 1). Complete excision was performed, with an anoxic arrest time of 20 minutes and a total extracorporeal circulation time of 65 minutes. The anatomopathological study of the specimen reported an atrial tumor of approximately 8 × 3 cm, irregular contours, greyish-brown in color, which when cut presented brown in color and whitish areas, histologically compatible with atrial myxoma.

The patient evolved with favorable hemodynamics in the immediate postoperative period, but with initial neurological dysfunction characterized by periods of agitation that did not allow early extubation. Subsequently, he presented a left hemiparesis that evolved to a predominantly crural left hemiplegia. A simple computed tomography of the skull (Fig. 2), who confirmed the diagnosis of right-sided basal ganglia infarction of embolic etiology, and it was decided to begin cerebrovascular rehabilitation. She was discharged 15 days postoperatively and is currently in New York Heart Association functional class II; Neurologically, she maintains a residual left hemiparesis.

Discussion

Perioperative stroke varies according to the type of surgical procedure performed, occurring more frequently in cardiovascular surgeries, such as coronary artery bypass grafting, valve surgeries, and carotid surgeries, compared with non-cardiovascular surgeries. In patients who specifically underwent cardiac surgery, the presence of a perioperative neurological lesion constitutes a poor prognostic factor in the evolution, reporting a higher incidence in those patients who underwent myocardial revascularization surgeries with placement of aortocoronary bypasses with the need for extracorporeal circulation. Several mechanisms have been proposed to explain the development of ischemic events associated with cardiac surgery, including hypoperfusion, systemic inflammatory response, metabolic disorder, and embolism, the latter being the most commonly reported^{1,2}.

Although cardiac tumors are considered rare, cardiac myxoma is one of the most frequently reported primary cardiac tumors of benign etiology, with an approximate incidence of 0.5-1% per million inhabitants. The symptoms of these patients vary depending on the characteristics of the tumor: size, morphology, mobility and location; however, 3.2-46.4% of cases may be asymptomatic. Among the neurological clinical manifestations associated with high morbidity and mortality are peripheral embolizations, which can appear in approximately 20-50% of cases. The degree of embolization is generally associated with the aforementioned characteristics of the tumor, especially the particularities of its surface. Depending on its appearance, during the echocardiographic study or macroscopically during surgery or the anatomopathological study of the tumor, two types of surface are evident: smooth with a

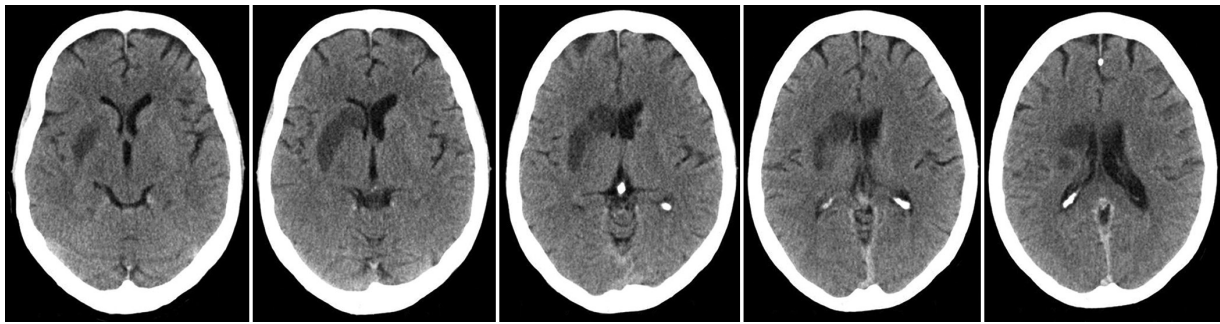


Figure 2. Plain computed tomography of the skull. A hypodense image can be seen that occupies the head of the caudate nucleus and the right basal gray nuclei, without mass effect on the midline structures, in relation to ischemic lesion at this level of probable embolic etiology based on the patient's history.

polypoid appearance and a compact consistency, or irregular with multiple villous extensions and a smooth consistency. The latter is the one that is usually associated with embolic phenomena, since it contributes to tumor fragmentation³.

Surgical excision is a technique that reports a low incidence of complications, being considered the most effective treatment and the preventive intervention of choice in asymptomatic patients diagnosed with cardiac myxoma, especially those with an irregular surface. Perioperative stroke is a rare complication in this type of surgery. In the present case, it is considered that it occurred as a result of a transoperative accident, due to the characteristics of the tumor and its manipulation during extraction, which led to the detachment of some tumor fragment that later embolized and caused the cerebral infarction in the right basal ganglia. There are other alterations that may also be linked to perioperative cerebrovascular accident, but which were not reported in the patient, such as atheromatosis in the area selected for the placement of the aortic clamp, gas embolism during the cannulation or decannulation process, changes hemodynamic with hypotension and cerebral hypoperfusion, previous carotid disease and coagulation disorders⁴⁻⁶.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Ethical disclosures

Protection of people and animals. The authors declare that no experiments were carried out on humans or animals for this research.

Data confidentiality. The authors declare that they have followed the protocols of their work center regarding the publication of patient data.

Right to privacy and informed consent. The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the corresponding author.

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