INTRODUCTION

Acute myocardial infarction (AMI) is infrequent in young patients. In these cases, specially in the absence of classical cardiovascular risk factors, discarding thromboembolic disease risk factors, such as use of oral contraceptives, thrombophilia and certain cardiac malformations, is mandatory. Interatrial septum aneurysm (ASA) and paradoxical embolism through a patent foramen ovale (PFO) in presence of thrombosis are some examples of the latter.

CASE PRESENTATION

The case presented is a 33 year old female that arrived to the emergency department referring typical chest pain lasting for 90 min. The patient had a history of smoking and used third generation oral contraceptives.

In the electrocardiogram, ST elevation in the anterior region was found. Thrombolytic treatment was initiated and a few minutes after, chest pain returned and an inferior ST-segment-elevation infarction was diagnosed at that moment. Catheterization revealed multiple embolic occlusion of coronary branches. We discuss tests performed and pathophysiology of myocardial infarction in this patient.

Key words: Thrombosis. Infarction. Embolism.

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Embolo coronario múltiple en una mujer con factores de riesgo para enfermedad tromboembólica

Presentamos el caso de una mujer de 33 años, fumadora, que tomaba anticonceptivos. Acudió al hospital con un infarto con elevación del ST de localización anterior. Se le administró tratamiento trombolítico con activador tisular del plasminógeno. A los pocos minutos, reaparecieron sus síntomas anginosos con alteraciones electrocardiográficas en las caras inferior, posterior y lateral. En la angiografía coronaria realizada se observaron múltiples oclusiones coronarias de origen embólico. Se discuten las pruebas complementarias realizadas y el mecanismo fisiopatológico del infarto en esta paciente.

Palabras clave: Trombosis. Infarto. Embolismo.
the Valsalva maneuver (after injection of agitated saline solution), although the patient did not cooperate optimally during the examination. A transcranial Doppler (TCD), also injecting saline solution after Valsalva maneuver, confirmed the existence of a massive right-to-left shunt through a PFO (Figure 3). The thrombophilia study also detected that the patient was heterozygotic for the factor II prothrombotic variant (G20210A). The remaining coagulation parameters were normal. Tests for detecting deep venous thrombosis were not performed.

The patient received dicumarinic anticoagulant therapy and was discharged. She remains asymptomatic after 2 years of follow-up.

**DISCUSSION**

This case is specially interesting as it is infrequent to find various coronary occlusions originated by embolism in a young female with multiple risk factors for thromboembolic disease. One of these risk factors is the factor II prothrombotic variant (G20210A), present in 1%-2% of the general population, and in 18% of thrombophilia cases. Its presence has been demonstrated to double or even triplicate the risk of venous thrombosis. The association with arterial thrombosis is more controversial,\(^1\) although evidences are clearer when it coexists with classical risk factors, mainly smoking.\(^1\)

The use of oral contraceptives increases AMI risk, specially in smoking females older than 40 years.\(^4\) As atherosclerotic lesions do not appear in the coronary angiographies performed on smoking patients that use contraceptives, we postulate a prothrombotic state as the AMI mechanism.

ASA is present in 2.2% of the general population,\(^5\) while a PFO is detected in 56% of patients with ASA. PFO prevalence in the general population is 25% to 30%.

A higher prevalence of paradoxical embolism, both cerebral\(^6,7\) and coronary, has been described in these patients, particularly when the shunt through the PFO

**ABBREVIATIONS**

MCA: mid cerebral artery.
ASA: interatrial septum aneurysm.
TCD: transcranial Doppler.
TEE: transesophageal echocardiographic examination.
TTE: transthoracic echocardiographic examination.
PFO: patent foramen ovale.
AMI: acute myocardial infarction.
REFERENCES


