A drastic complex atheromatous aorta
A case report

Ivano Bonadei1, Enrico Vizzardi1, Antonio D’Aloia1, Edoardo Sciatti2, Edoardo Cervi2, Stefano Bonardelli2, Marco Metra1, Stefano Maria Giulini2


Aortic atherosclerosis is the most common disease of the aorta. More than 50% of the plaques thicker than 4 mm are located along the descending aorta. The complex morphology of the plaque, such as ulceration or the presence of thrombi, is associated with increased embolic risk.

The increasing use of transesophageal echocardiogram has enhanced the recognition of aortic atheromas. We describe a case of a male patient with complex atherosclerotic disease involving the coronary vessels and descending aortic tract with some embolic complications.

Keywords: aortic stenosis, thrombus, atherosclerosis.

Monaldi Arch Chest Dis 2013; 80: 45-47.
artery ligation. Upon return from the operating room, the patient showed no signs of bilateral flow and he resumed heparin therapy. In the following hours he suddenly became comatose; angio-computed tomography was performed showing the evidence of right internal carotid artery thrombosis and hyperacute ischemia in the territory of the middle cerebral artery (recanalized by the oars of the Willis polygon). Given the poor prognosis and the framework itself there was no indication for intensive treatment.

**Discussion**

Aortic atherosclerosis (AA) is the most common disease of the aorta. The aortic plaques located along the ascending aorta and aortic arch are the most frequent causes of ischemic embolic stroke. Recently it has been demonstrated that complex descending aorta plaques should be considered as a new source of stroke [1]. More than 50% of the plaques thicker than 4 mm are located along the descending aorta. The plaques may be calcified, ulcerated, soft or with superimposed thrombi. A simple classification divides the atheromatous plaque into simple and complex or stable and unstable. The complex morphology of
the plaque, such as ulceration or the presence of thrombi, is associated with increased embolic risk, while the presence of calcification indicates a lower risk. Plaque morphology is very dynamic with frequent formations and resolution of mobile components [2]. In the literature, the embolic risk associated with AA was significant if plaque thickness was greater than 4 mm and if it was complex (e.g., moving parts increase the risk of stroke and death by 17-fold). AA is often associated with atherosclerosis in other vascular beds such as the carotid artery and coronary arteries [3]; an association with severe calcific aortic aneurysm and mitral annular calcification has also been observed. These conditions are predisposed to embolisms and therefore aortic atheroma may be a marker of other disease states causing stroke [4, 5]. In particular, the simultaneous presence of atherosclerotic aortic and aortic valve stenosis has been increasingly recognized [6]; At our institution we noted that 63% of patients with aortic valve stenosis had severe aortic atheromatous plaque (> 4 mm) compared to 35% with mild aortic stenosis.

It has been estimated that the relative risk for stroke or peripheral embolism in patients with severe AA has quadrupled and is even more than 12 in patients with mobile atheromas and fluctuating components; its prevalence among patients presenting with ischemic stroke is similar to that of atrial fibrillation and atheromatous carotid (20%). Recurrent stroke is common in patients with aortic arch atheroma with a thickness of more than 4 mm or mobile components, particularly in the categories of high-risk patients such as the elderly, smokers, hypertensives and diabetics. Patients who have severe and complex atheroma are at increased risk of recurrence (14% per year) and could therefore require a more aggressive secondary prevention strategy. The increasing use of TEE has enhanced the recognition of aortic atheromas. In patients with cryptogenetic stroke, it is reasonable to verify the presence of a severe and complex aortic atheroma by the use of TEE [7]. Although magnetic resonance and computed tomography investigations are emerging non-invasive diagnoses for characterization of aortic atheromas, TEE is still a high-level investigation [8, 9].

AA treatment has not yet been well defined and there are still conflicting results regarding the use of anticoagulant. Statins, by their mechanisms of high-level investigation [8, 9].

References