

Aortas with Three Lumina

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Introduction

Aortic dissections are characterized by cleavage of the aortic wall into two sheets along its longitudinal axis¹, extending from a few millimeters to the entire aorta. Cleavage occurs in the medial layer, almost always at its external third. Thus, rupture and death following hemorrhage are common. However, some patients survive, with or without surgical treatment, having the disease a chronic evolution.

In some of the cases there are two dissections, including chronic and acute dissections². Such dissections, however, have been reported in different segments of the artery. We report three cases in which the wall of the false lumen of chronic dissection split, forming acute dissection and creating three lumina in the aorta.

Report of the cases

At the Heart Institute, of almost 250 necropsies of patients with aortic dissections over more than 35 years, there were three with chronic and acute dissections in the same arterial segment (Figure 1). That aspect was evidenced on computed tomography in one of the cases (Figure 2). All patients were middle-aged (age range, 48 to 62 years) and hypertensive; two were males. None of the following conditions was identified in any of the three patients: bicuspid aortic valve; aortic coarctation; Marfan syndrome; or other recognized genetic disorder. Rupture of the segment with acute dissection was observed in all patients, being their cause of death.

Comments

The demographic aspects of our patients did not differ from those of most cases of aortic dissection. In a previous statistics of our institution³, which included one of the cases here reported, 77.1% of the patients were men, 76.4% died between 40 and 76 years of age, 89.6% were hypertensive, and 57.5% of those who underwent no

Keywords

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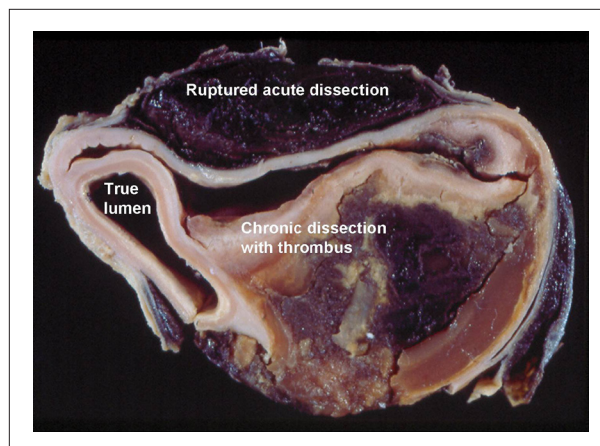


Figure 1 – Cross section of the thoracic aorta with three lumina.

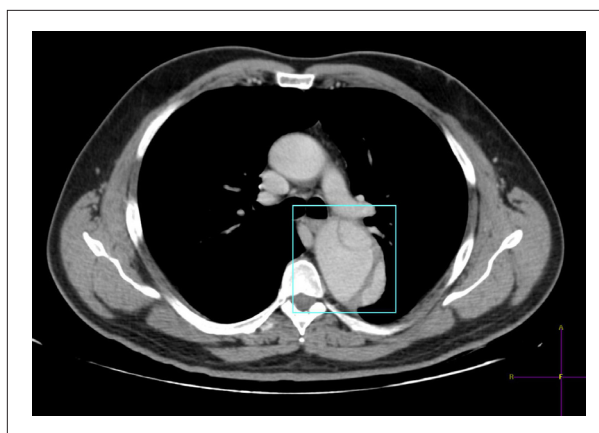


Figure 2 - Computed tomography showing aorta with three lumina.

operation died due to hemorrhage (that cause of death is less important because only cases with chronic dissection were included).

Although the pathogenesis of aortic dissection has not been totally clarified⁴, a weakness of the wall is probably present, linked to alterations in the extracellular matrix, including a reduction in collagen⁵. That underlying condition is reinforced by the fact that the artery might have more than one dissection. Dissection in aortas with aneurysms and more than one dissection in different zones of the same aorta, including acute and chronic dissections, were previously recognized² and are not uncommon. We report interesting cases, in which acute dissections occurred in the

same segment of the arterial wall with a previous dissection, causing the arterial lumen to split into three. It is worth noting that such aspect can be seen on computed tomography and should be recognized to prevent misinterpretation.

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Author contributions

Conception and design of the research, Analysis and interpretation of the data and Critical revision of the

manuscript for intellectual content: Benvenuti LA, Mansur AJ, Gutierrez PS; Acquisition of data and Writing of the manuscript: Benvenuti LA, Kihara Filho EN, Mansur AJ, Gutierrez PS.

Potential Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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Study Association

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