Case report - Aortic and aneurysmal
Saccular ascending aorta aneurysm: report of an unusual presentation
Bruno Borrello, Francesco Nicolini*, Cesare Beghi, Tiziano Gherli
Cardiac Surgery Department, University of Parma, Parma, Italy
Received 29 November 2007; received in revised form 27 January 2008; accepted 28 January 2008

Abstract
We describe an unusual presentation of a large saccular aneurysm of the ascending aorta, mimicking an acute coronary syndrome. The compression of the aneurysm on the left main coronary artery was probably the cause of these confusing symptoms. Our experience confirms the fundamental role of modern cardiac imaging techniques in the differential diagnosis of these unusual cases and in the planning of the correct surgical procedure.

Keywords: Aortic aneurysm; Cardiac surgery

1. Introduction
We describe the unusual clinical presentation of a saccular ascending aorta aneurysm in a 70-year-old female patient.

2. Clinical summary
The patient had no clinical history of symptoms or signs of ischemic coronary artery disease and was admitted to our institution for sudden chest pain associated with systemic severe hypotension and ST segment elevation in postero-inferior ECG leads. Serum levels of specific myocardial necrosis markers were not significant.

Trans-thoracic echocardiography showed good function of the left ventricle with moderate pericardial effusion not causing tamponade, and generally excluded signs of aortic root disease. Blood pressure was stabilized with intravenous plasma expanders and low dosage dopamine administration. Emergency coronary artery angiography excluded coronary artery obstructive disease, and revealed a large saccular ascending aorta aneurysm (mean diameter 5 × 5 cm) rising from the posterior ascending aortic wall, just above the sino-tubular junction (Figs. 1a, 2a). As a consequence of the hemodynamic stability and the absence of signs of impending rupture, before surgery the patient underwent a CT-scan which confirmed the diagnosis (Figs. 1b, c, 2b).

The patient underwent aortic aneurysm resection and prosthetic ascending aorta replacement. Cardiopulmonary bypass was performed via the left femoral artery and right atrium cannulation. Myocardial protection was achieved by the administration of antegrade and retrograde continuous warm blood cardioplegia. Surgical exploration showed a focus of impending fissuration in the wall of the aneurysm. Histological tests revealed fragmentation and disarrangement of the aortic wall elastic layer with mucoid degeneration and fibrosis areas and mild chronic perivascular adventitial flogosis.

The postoperative period was uneventful and the patient was discharged and referred to a rehabilitation program seven days after the operation. At three months follow-up, the patient is alive and asymptomatic.

3. Discussion
We describe an unusual presentation of a large saccular aneurysm of the ascending aorta, mimicking an acute coronary syndrome. The confusing clinical presentation could be explained by the contiguity of the aneurysm with the origin of the left main stem, causing initial electrocardiographic modifications. The compression of the aneurysm on the left main coronary artery could also be responsible for the unusual onset of symptoms mimicking an evolving acute myocardial infarction, such as sudden chest pain associated with systemic severe hypotension.

Between 25% and 33% of patients affected by ascending aorta aneurysm report chest pain but associated electrocardiographic ischemic abnormalities have been occasionally described only in the case of sinus of Valsalva aneurysms [1].

In our case, the clinical stability, the absence of signs of impending rupture, the convenience and speed of perform-
ing a thoracic CT-scan at the radiology laboratory of our Hospital, situated next to heart surgery operating theatres, prompted us to submit the patient to thoracic tomography before surgery. In fact, a CT-scan also allows us to study the aortic wall better than aortography with the aim of specifying anatomic relationships of the aneurysm with other organs. It is rare to see such incipient and impending rupture of an ascending aortic saccular aneurysm on surgical inspection [2], particularly as, in this case, preoperative angiography and CT-scan showed no signs of impending fissuration. Our experience confirms the fundamental role of performing modern cardiac imaging techniques in the differential diagnosis of these unusual cases and planning the correct surgical procedure.

Acknowledgements

We thank Lois Clegg, English language teacher, University of Parma, for her assistance in the revision of the manuscript.

References


eComment: Etiology of saccular aortic aneurysms

Authors: Dilek Ezer, Department of Cardiovascular Surgery, Gazi University Medical Faculty, Ankara 06500, Turkey; Erkan Iriz, Gursel Levent Oktar, Veliy Yildirim Imren
doi:10.1510/icvts.2007.172726A

We read with interest the paper by Borrello et al. [1] in which they presented a challenging case of saccular ascending aortic aneurysm together with its successful management. We believe the paper requires certain points to be stressed on. A naturally occurring saccular aneurysm at the ascending aorta is an extremely rare clinical entity [2]. Usually it occurs secondarily to the trauma, infection, autoimmune disorders such as Behcet’s disease or other collagen vascular diseases or due to previous cardiovascular surgery [3]. We would like to discuss the points about the etiology of the patient.

From the radiographic point of view, since there was not a previous history of surgery, the pathology resembles mycotic saccular aneurysms at the ascending aorta or resulted secondary to a vasculitic syndrome [4, 5]. Are these issues considered and peri- and postoperative treatment planned accordingly? Have the authors performed a histopathologic examination of the excised aneurysm wall? In case of a mycotic aneurysm, it may not be easy to detect the organism in ordinary cultures [4, 5]; however, in highly suspected cases polymerase chain reaction (PCR) methods are highly helpful. Has this issue been considered? We believe it would be helpful for readers if authors would give more information about the etiology of their case and/or investigations performed to clarify the pathophysiology.

References