

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Surgery Quiz – Case 27

A 69-year-old female transported to our ACS level-II trauma center with ATLS class-IV hemorrhagic shock. Ambulance pre-hospital care paramedics found the patient lay down lethargic covered by severe amount of blood. The patient underwent ascending aorta prosthetic replacement two-years prior for a Stanford A acute aortic dissection with chronic deep sternal wound infection including a chronic draining sinus tract and an aortocutaneous fistula at the upper body sternum presented one-year and three-months prior, respectively. During the ATLS-guided resuscitation, external opening compression sutures of the aortocutaneous fistula placed, the patient stabilized and underwent whole-body CT for suspected aortic rupture which revealed: (1) the aortocutaneous fistula (red arrow); (2) the sternal dehiscence (white arrow); (3) the pseudoaneurysm and surrounding hematoma (black arrow) between the prosthetic ascending aorta and sternum along with aneurysmatical false lumen dilatation of the thoracic aorta (yellow arrow), unaltered compared to follow-up CTs; and (4) no free aortic rupture (fig. 1).

What went wrong?

Comments

According to her family, the patient performed a heavy-weight lift from the ground before exhibiting fresh oozing blood from the aortocutaneous fistula. The Valsalva maneuver that the patient performed for the weight lift resulted in transient aortic pressure increase which normally has no significant impact. However, in the setting of the infected prosthesis combined with false aneurysm and aortocutaneous fistula, the significant aortic pressure increase led to aortic rupture. As no free intrathoracic rupture and no significant in size pseudoaneurysm depicted in CT, the aortic rupture was directed straightforward to the aortocutaneous fistula resulting in massive hemorrhage which could had been avoided by applying firm pressure to the external opening. In analogous cases, patient and family education for avoiding Valsalva maneuvers and performing local bleeding control until prompt and definitive surgical treatment are crucial. However, redo-sternotomy is complex and is associated with considerable morbidity and mortality. General principles of surgical management are: (1) safe re-entry by peripheral cannulation with or without cardiopulmonary bypass; (2) removal of the infected

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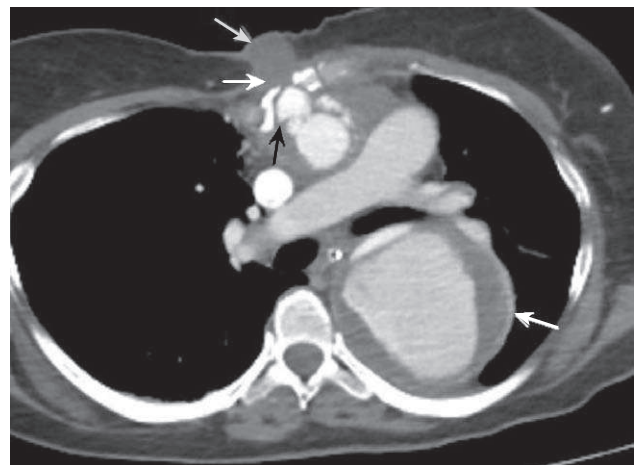


Figure 1

graft, debridement of the infected peri-prosthetic tissues, vascular reconstruction and long-term antibiotic therapy.

References

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- PATEL HJ, WILLIAMS DM, UPCHURCH GR, DASIKA NL, ELIASON JL, DEEB GM. Late outcomes of endovascular aortic repair for the infected thoracic aorta. *Ann Thorac Surg* 2009, 87:1366–1372

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Diagnosis: Aortocutaneous fistula from an infected ascending aorta graft resulting in massive hemorrhage after a Valsalva maneuver