

Graft Infection After Ascending Aorta and Aortic Arch Replacement

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Introduction

Deep sternal infection combined with graft infection after ascending aorta and aortic arch replacement are in most cases life threatening. There are two possible ways of treatment – the most common is removal of the prosthetic graft and re-replacement. In conditions of deep sternal infection, urgent re-replacement is associated with high risk of sepsis and bleeding. Therefore, the second way – preservation of the graft, debridement and negative pressure wound therapy (NPWT) – can be consider.

Case report



Diagnosis:

31 y/o male admitted for the rupture of thoracic aorta pseudoaneurysm after previous surgery for aorta coarctation in childhood.

Admission status:

- hypotension
- shock
- left side hemothorax



Procedure:

Resection of pseudoaneurysm and ascending aorta, aortic arch and part of descending aorta replacement with transposition of the left subclavian artery to the left carotid artery. The operating time was 9 hours in total hypothermia 20°C with massive bleeding from the pseudoaneurysm area. Intraoperative application of Cell Saver and Novo Seven and drapes tamponade.

Re-exploration:

3rd day – massive bleeding after tamponade removal, in the end resolved by Surgicel and tissue adhesives.



Complications:

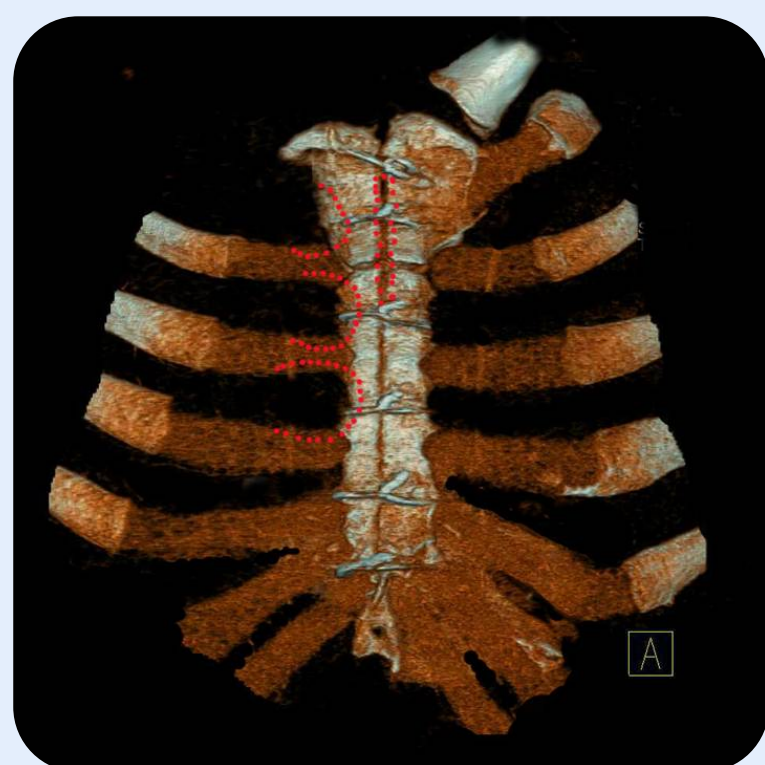
36th post-operative day – the patient dismissed in good conditions. 8 days later re-hospitalized for sepsis and wound abscess (CRP 260 mg/L, leukocytosis 22x10⁹/L).

The first revision:

Evacuation of the abscess, soft tissue necrectomy and V.A.C. therapy. Sternotomy left closed.

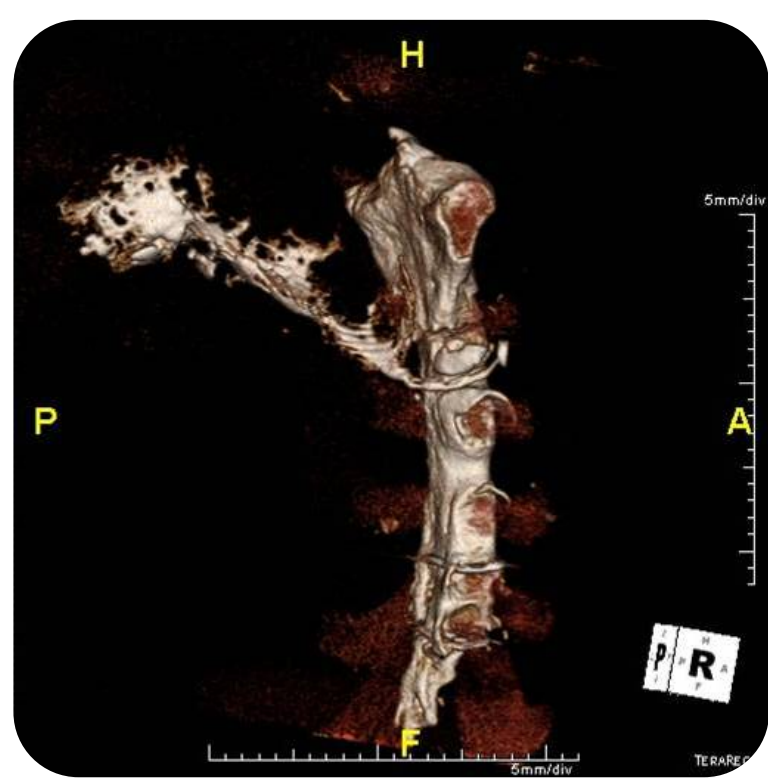
Intraoperative cultivation:

Klebsiella pneumoniae ESBL.



The second revision:

In spite of firm sternotomy, there was present osteomyelitis and osteochondritis. Therefore, we proceeded with sternal wires removal, partial sternum and ribs necrectomy (as signed), evacuation of the abscess, and retrosternal soft tissue necrectomy. V.A.C. therapy lasted 42 days, after 57 days of hospitalization patient was dismissed with secondary wound healing (secretion persisted, CRP 24mg/L).



Fistulography:

14 months after primary surgery purulent secretion from the fistula persisted. There was the same Klebsiella pneumoniae ESBL in wound cultivation. Fistulography results: contrast agent goes from the fistula orifice on skin along the graft up to spine.



Local ATB therapy:

Amikacin 500 mg in 20 ml of saline solution 5 times in 8 days, before the administration of ATB, 1ml of hydrogen peroxide was instilled – released oxygen dilated and helped ATB solution to pass further. Before instillation, inflammatory markers were elevated (CRP 42 mg/l, Immunoglobulin G 17,1 g/L, Immunoglobulin A 4,87 g/L), after the therapy, the markers were in normal range.

Conclusion

In 3 weeks the fistula definitively closed. For the next 3 years, the patient has been healthy with no evidence of infection. Although we consider this approach as alternative and very specific, it can be useful in special circumstances.