

Case Report

Stent graft infection after endovascular repair of abdominal aortic aneurysm: a case report and literature review

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ABSTRACT

Aortic end graft (EVAR) infection is a challenging management problem in aortic surgery with 0.2% to 0.7% incidence, which is similar to aortic graft infection after open abdominal aortic aneurysm (AAA) repair. Although much attention has been given to the more common problem of endo leak management, yet only sporadic case reports have been reported about the late complication of endograft infection. We reported a case of elderly Saudi male, known to have multiple medical problems presented to our emergency department with severe progressive abdominal pain, vomiting, and fever over the last 7 days. He was evaluated and diagnosed as septic shock due to and infected stent graft following Endovascular Aneurysm Repair of abdominal aortic aneurysm, 4 years ago, with peritonitis. He underwent emergency laparotomy and a left paraaortic abscess was drained and a part of exposed metals of the stent graft found. Other intraperitoneal abscesses were drained and abdomen closed over drains. Patient remained under ICU care, but unfortunately deteriorated and died 3 days postoperatively.

Keywords: Stent-graft infection, Endovascular aneurysm repair, Antibiotics, Surgery

INTRODUCTION

Vascular graft infection is considered as one of the most serious complications after vascular graft surgery, with a poor prognosis. The main treatment of vascular graft infection is the removal of the infected vascular graft. Extra-anatomical bypass is often required for revascularization.^{1,2} Yet, removal of the stent graft may be difficult in poor-risk patients who have undergone endovascular aneurysm repair (EVAR). In this case, we observed an abscess in the aortic aneurysm surrounding the stent graft following EVAR and treated the stent-graft infection conservatively.

CASE REPORT

A 84 years old Saudi male, known to have diabetes, Hypertension, end stage renal disease on regular

hemodialysis and ischemic heart disease on treatment and EVAR of abdominal aortic aneurysm 4 years ago, presented to emergency room of King Khalid Hospital Hail, Saudi Arabia, with 3 days history of severe upper abdominal pain, vomiting and anorexia. No bleeding per orifices or fever. Clinically, BP: 80/50, HR: 110/min, temp: 37.5 degrees. Generally, he looks in severe pain with confusion. Clinically, with generalized tenderness and rebound all over the abdomen. Lab works: The leukocyte count was 11,000/mm³, C-reactive protein (CRP) level was 191 mg/l, and the erythrocyte sedimentation rate (ESR) was 127.0 mm/h. RBS was 340 mg/dl, Creatinine: 503 ummol/l, potassium: 5.5 mg/dl. Abdominal Ultrasound was unremarkable due to gases, Contrast enhanced computerized scan of the abdomen (CECT) showed a 10×3.5.9 cm left para-aortic multi loculated collection intimately related to the region of stent graft. Another inter loop collection is seen in the

region of left iliac region. No evidence of free air or contrast leak was noted, but a moderate free intra peritoneal fluid and patent mesenteric vessel (Figure 1A, B) was there. Patient was resuscitated in ICU with O₂, IVF, IV Tazocin, Inotropes infusion, omperazol, etc.

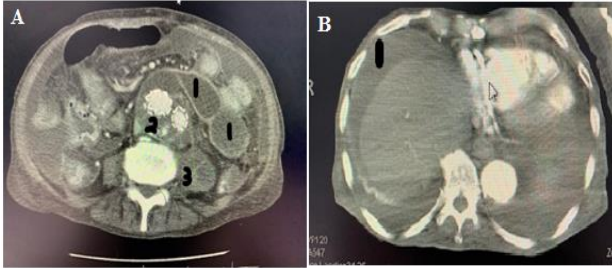


Figure 1: (A) CECT showing a left para aortic multi loculated collection, to the left of Aorta, left Psoas abscess is also shown (B) a transverse cut of CECT showing an extensive intra peritoneal fluid.

He was diagnosed as stent graft infection and peritonitis. Family was consented and patient shifted to theatre. Exploratory laparotomy showed evidence of peritonitis, right subphrenic abscess and left iliac inter loop abscess walled off by loops of small bowel and sigmoid colon. All abscesses drained with cultures taken. The left sided para aortic abscess was drained exposing the stent graft with eroded wall of aorta (Figure 2), with some ooze of blood from the defect of the wall of Aorta that was controlled only with direct pressure. Lastly, through abdominal lavage with saline was done and procedure terminated due to critical situation, shifting the patient back to ICU. A plan for revascularization in the form of extra-anatomical bypass, in the form axillo-bifemoral, and stent graft excision at later date should the situation improved.

Unfortunately, on the 3rd postoperative day, he got arrested and death declared.

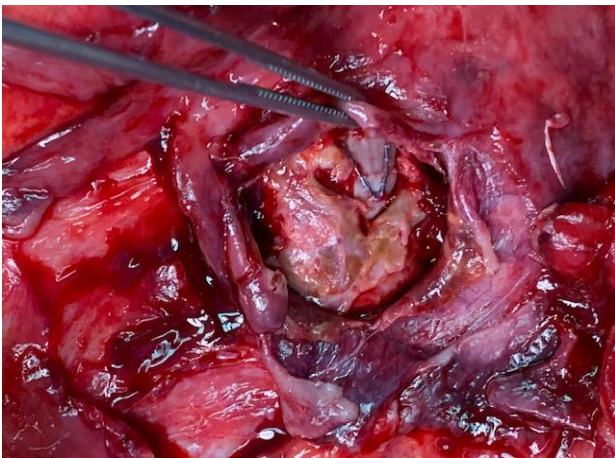


Figure 2: Exposed stent graft of the eroded aorta after evacuating a paraaortic large collection.

DISCUSSION

Aortic stent-graft infections are rare. There are only few case reports of stent-graft infection after EVAR are available.³⁻⁶ Most reported about stent-graft infection associated with aorto-duodenal fistula; however, cases without an intestinal fistula, as in our patient, are very rare. Some reported that the most favorable outcome was achieved with total excision of a stent graft as a treatment strategy for stent-graft infection and by in situ revascularization as surgical therapy and conservative therapy may not be the best treatment option.^{7,8} However, conservative therapy may be the only valid options for poor-risk patients, like our patient who had evidence of peritonitis not just a stent graft infection, which could be treated by trans-lumbar percutaneous drainage of the collection. Laparotomy was the only solution for our patient to control the fulminant infection and get cultures, yet nothing could be offered to the infected stent graft due to frail condition. Although any microorganism can cause infection of aortic aneurysm, the common pathogenic bacteria are the gram-negative *Salmonella bacilli* and gram-positive *Staphylococcus* or streptococci.⁹⁻¹¹

CONCLUSION

A high index of suspicion is also required for diagnosis because the clinical presentation could be varied. Removal of the infected prosthesis and restoration of the blood flow to the lower extremities is the best and is recommended whenever possible and conservative therapy may not be the best treatment option as cure rate of conservative therapy may be approximately 60%, yet it may be the only valid option for poor-risk patients, such as those with peritonitis, like our patient.

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