Indian J Surg (December 2015) 77(Suppl 3):S1385–S1386
DOI 10.1007/s12262-013-1001-6

IMAGES IN SURGERY

Kidney Salvage During Surgical Treatment of a Pararenal Mycotic Aortic Aneurysm

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Received: 26 July 2013 / Accepted: 24 October 2013 / Published online: 10 November 2013

Abstract Mycotic abdominal aortic aneurysms although rare are accompanied by an extensive risk of morbidity and mortality. Surgical treatment is challenging, but it offers the only chance of survival. Extra-anatomic aortic reconstruction through uninfected tissues is feasible, providing a durable therapeutic option in the presence of severe infection.

Keywords Fever of unknown origin · Renal revascularization · Extra-anatomic bypass · Mycotic aneurysm · Prostheses and implants · Vascular surgical procedures

Case Summary

A 64-year-old patient with a fever of unknown origin during the last 20 days underwent a computed tomography scan which displayed a previously known infrarenal small abdominal aortic aneurysm (AAA) as well as a newly diagnosed 4.5 cm pararenal saccular aneurysm located in the right anterior abdominal aortic segment, including the right renal and the left renal artery ostia (Fig. 1). Preoperative blood cultures revealed *Staphylococcus hominis* which along with clinical and radiological findings, in the absence of an alternative diagnosis, suggested a high probability of a mycotic AAA (MAAA).

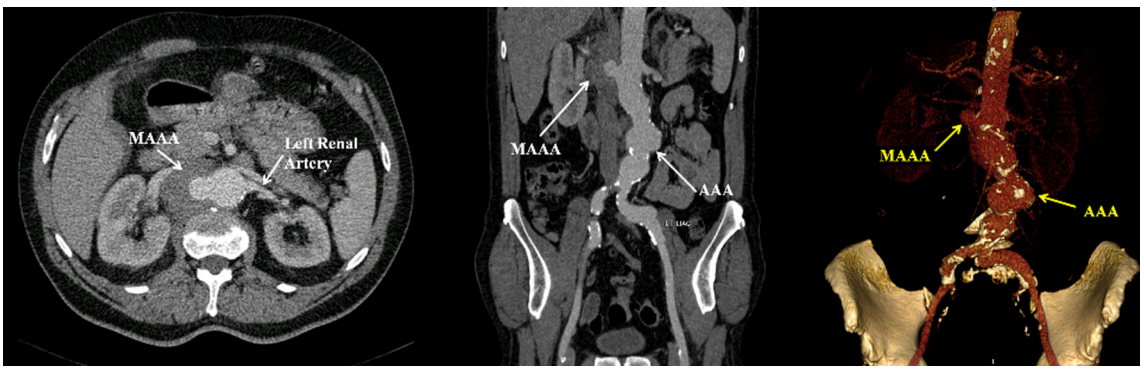

Fig. 1 A newly diagnosed 4.5 cm pararenal saccular aneurysm located in the right anterior abdominal aortic segment, including the right renal and the left renal artery ostia

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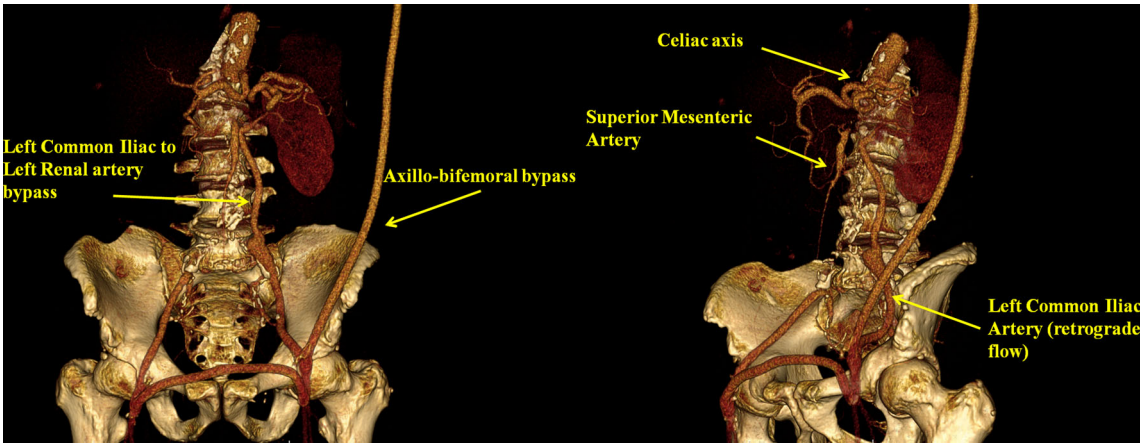

Fig. 2 CT imaging at 12 months revealed good graft patency

Initially, an extra-anatomic axillo-bifemoral bypass was performed (ePTFE 8 mm externally supported graft) insuring both distal perfusion of lower limbs and retrograde bilateral iliac blood flow. Since the aneurysmal sac involved the origin of the left and the entire length of the right renal artery, salvation of the right kidney was unfeasible whereas preservation of the left kidney function was attempted through a left common iliac to left renal artery bypass using a 6-mm Dacron silver graft. Subsequently, the AAA and the MAAA were resected with concomitant extensive surgical debridement and suprarenal aortic ligation. Post-surgically, the patient experienced intestinal ischemia undergoing left hemicolectomy and colostomy. He was discharged on the 58th post-operative day with normal renal function. The patient was clinically followed up at 3, 6, 12, and 18 months. He has been in good clinical status, having gained weight, retaining normal renal function. CT imaging was performed at 12 months (Fig. 2), revealing good graft patency.

MAAAs represent an infectious process often resulting in rupture and death if not properly treated since they are frequently associated with delayed diagnosis, rupture, sepsis, and paravisceral location [1–3]. Symptoms are not typical, and vague abdominal or back pain may or may not accompany pyrexia whereas leukocytosis although almost uniformly present represents a non-specific finding [4]. Surgery is considered the mainstay of treatment, and in the presence of visceral involvement, most authors advocate routine in situ aortic revascularization [5, 6]. Nevertheless, extra-anatomic reconstruction through uninfected tissue planes although technically challenging is feasible providing distal perfusion and preserving renal function in the presence of severe infection like in our case.

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