Spontaneous Aortocaval Fistula Presenting with Fever, Low Back Pain and Progressive Jaundice: A Case Report

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Abstract

A case of aortocaval fistula caused by mycotic abdominal aortic aneurysm was reported. A 56-year-old man was admitted to our hospital with the complaints of low back pain, easily fatique for 2 weeks. On physical examination, he had deep jaundice with abdominal mass. Enhanced computerized tomography scans showed aortocaval fistula. The patient exhibited high output failure and progressive jaundice. Urgency aneurysmorrhaphy and inferior vena cava repair were performed. Postoperative examination revealed no leakage from the aorta to the vena cava. Conventional surgery for aortocaval fistula still efficacious and reliable for patients and surgeons.

บทคัดย่อ: Spontaneous Aortocaval Fistula ที่มาด้วยไข้ ปวดหลังส่วนล่างและตาเหลืองตัวเหลือง รายงานผู้ป่วย 1 ราย

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บทคัดย่อ

รายงานผู้ป่วย aortocaval fistula ในโรงพยาบาลมหาราชนครราชสีมา ซึ่งมีสาเหตุมาจากการติดเชื้อของเส้นเลือดแดงใหญ่ในช่องท้องโป่งพองซึ่งพบได้น้อยมาก โดยพบได้ประมาณร้อยละ 1 ของผู้ป่วย เส้นเลือดแดงใหญ่ในช่องท้องโป่งพองทั้งหมด เป็นผู้ป่วยชายอายุ 56 ปีมานอนโรงพยาบาลด้วยอาการปวดหลังและอ่อนเพลีย 2 สัปดาห์ ก่อนมาโรงพยาบาล จากการตรวจร่างกายพบว่ามีอาการตัวเหลือง ตาเหลืองและคลำก้อนบริเวณกลางท้องได้ หลังจากนั้นเริ่มมีอาการของอืดแน่นท้อง เหนื่อยมากขึ้น ท้องอืด มีน้ำในช่องท้อง ขาบวม จึงได้ส่งตรวจเอกซเรย์คอมพิวเตอร์ (Enhanced computerized tomography scan) จึงพบว่ามีภาวะ aortocaval fistula ได้ทำผ่าตัด aneurysmorrhaphy และทำการเย็บซ่อมแซม inferior venacava หลังการทำผ่าตัดผู้ป่วยอาการดีขึ้นตามลำดับ และได้ทำการส่งตรวจเอกซเรย์คอมพิวเตอร์อีกครั้ง2 สัปดาห์ต่อมาได้ผลดีไม่พบร่องรอยของการติดต่อของ aorta และ inferior vena cava อีก จึงสรุปได้ว่าการทำผ่าตัด Conventional surgery สำหรับการรักษาภาวะaortocaval fistula ยังคงมีประสิทธิภาพสูงและปลอดภัยสำหรับผู้ป่วยที่มารับการรักษา และสำหรับศัลยแพทย์โดยไม่ต้องใช้เครื่องมือที่มีราคาแพงและซับซ้อน

Introduction

Spontaneous aortocaval fistula is rare, accounting for 1% of all operations for an abdominal aortic aneurysm and 4% of operations for ruptured aneurysm[1]. A definite diagnosis of aortocaval fistula is rather difficult, as the classic diagnostic signs (pulsatile abdominal mass with bruit, high output heart failure and acute dyspnea) are present only in 20%-50% of all such cases[2]. Pre-operative diagnosis is crucial, as adequate preparation has to be made for the massive bleeding expected at the operation. Surgical repair is still the standard treatment while endovascular therapy becoming popularized according to its less invasive. We report herein a case of spontaneous aortocaval fistula, which presented with fever, low back pain and progressive jaundice.

Case Report

A 56-year-old man was admitted to our hospital with the complaints of low back pain, easy fatique for 2 weeks. His medical history was unremarkable. He has a history of alcohol and smoking for a period of times. On examination, he was in discomfort, marked jaundice, feverish with the body temperature of 38.5 degree of Celsius, heart rate of 110 beats/min, blood pressure 100/70 mmHg and repiratory rate of 22/min. Auscultation findings of heart and lungs were normal. On palpation, no evidence of hepato-splenomegaly, while pulsatile abdominal mass just above and lateral to the right of the umbilicus with mild tenderness was obtained. Mottled skin both thighs and pitting edema grade 3 of both legs were observed. Peripheral pulses were intact. The laboratory analysis yielded hemoglobin (Hb) 9.2 g/dL(12-16), white blood cells 23,800 cells/mm^3 (4,500-11,00) with 73% neutrophils with toxic granules in cytoplasm, C-reactive protein (CRP) 53 mg/dL (0-6), urinalysis is normal, coagulogram was intact, electrocardiogram was normal, chest x-ray showed mild cardiomegaly with increased pulmonary blood flow, Laboratory tests were follows: blood urea nitrogen (BUN) 19 mg/dL (10-20), cholesterol 295 mg/dL (150-200), direct bilirubin 5.4 mg/dL (0-0.5), total bilirubin

9.6 mg/dL (0.0-1.5), SGOT(AST) 40 U/L(8-50), SGPT(ALT) 112 U/L (8-50), alkaline phosphatase (ALP) 895 U/L(35-110), normal serum electrolytes, creatinine 1.25 mg/dL (1-2), total protein 8.5 g/dL (6.6-8.3), albumin 2.9 g/dL (3.8-5.1), globulin 5.6 g/dL (3.2-4.5). An urgent computerized tomography (CT) angiogram showed an infrarenal abdominal aortic aneurysm, saccular type, starting 4 cm distal to renal arteries and ending at just above common iliac bifurcation-5 cm in transverse diameter, with the early detection of the contrast media in the inferior vena cava (IVC) suggestive of an aortocaval fistula (ACF) and the study showed normal size of liver with diffuse coarse parenchyma, no bile duct dilatation, gallbladder is thin and distended without detectable stone (figure 1). Due to simultaneous fever and elevated C-reactive protein (CRP) and white blood cells with toxic granule-contaning neutrophils, we started a empirical antibiotic regimen of cloxacillin and ceftriaxone until hemocultures had been obtained. The patient underwent an emergency operation with standard long midline abdominal incision. A huge and inflamed mass at retroperitoneum was encountered. The aorta was clamped proximally just below left renal vein and distally at both common iliac arteries after 0.5 mg/kg of heparin was given. Aneurysmotomy was made and the sticky turbid fluid within the aneurysmal wall was sent for culture and the result came back as Salmonella type D infection. A massive venous bleeding from ACF was encountered and it was oversewn from the aneurysm sac with 4/0 prolene and the same procedure was performed at the lumbar branches, and the aneurysm was replaced with Dacron Y-graft (no.20) interposition. The operation was performed uneventfully. The patient recovered dramatically while fever and pitting edema and jaundice disappeared.

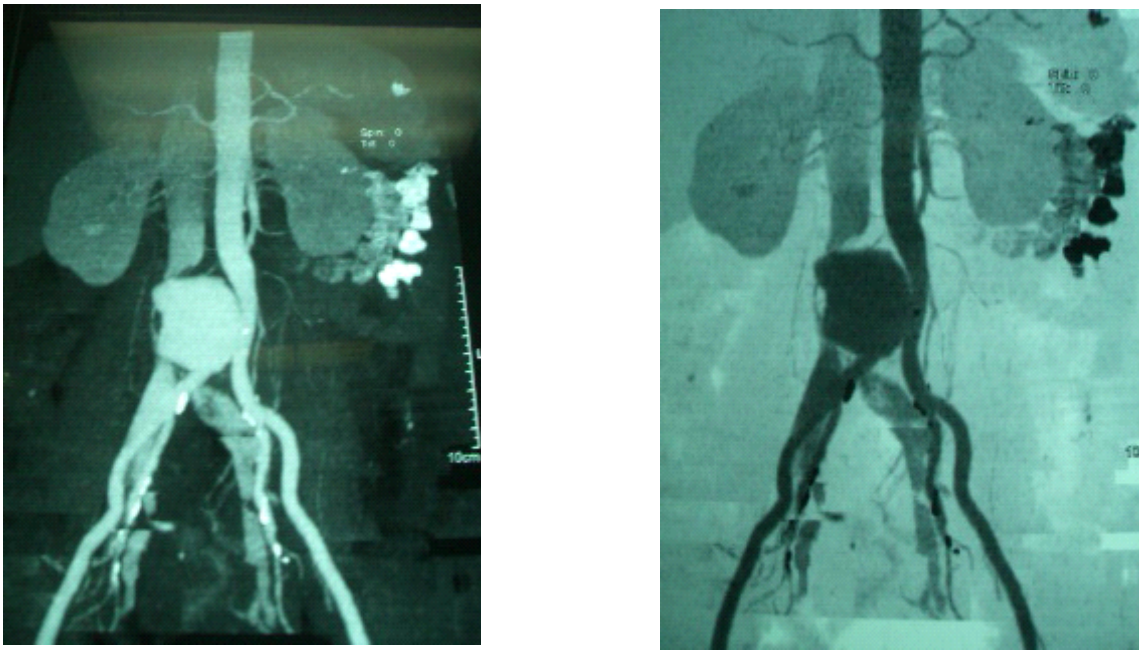

Figure 1 Preoperative abdominal computed tomography angiogram showing large saccular abdominal aortic aneurysm and aortocaval fistula

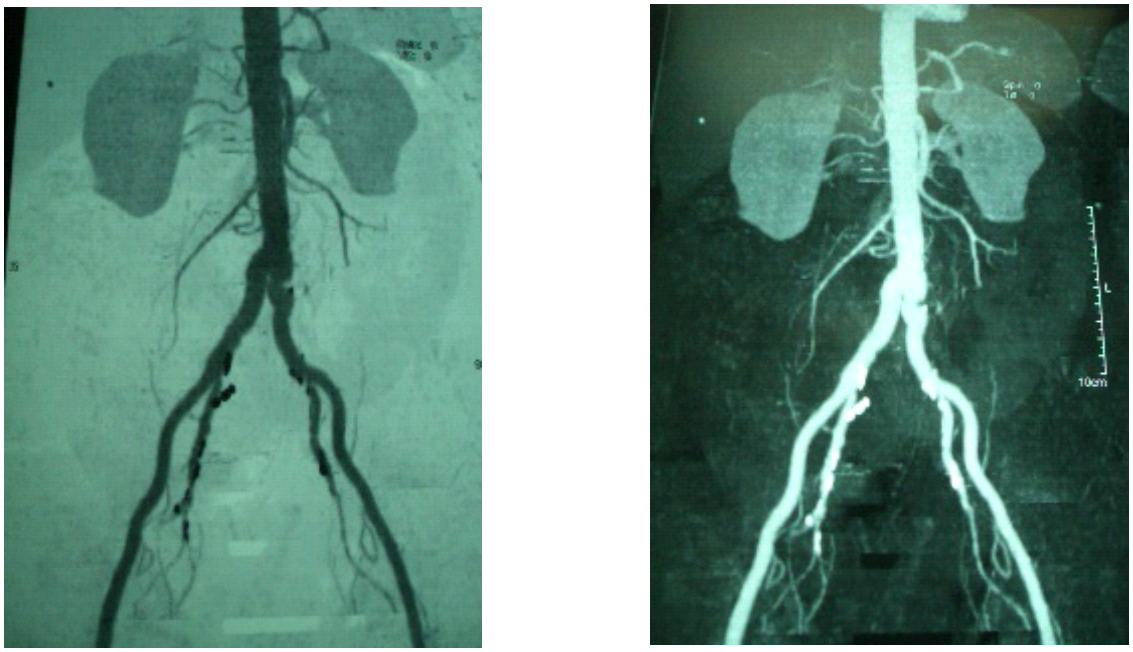

Figure 2 Postoperative abdominal computed tomography angiogram showing the result after Y-Dacron graft interposition and IVC Repair

Discussion

Pre-operative diagnosis of ACF is helpful in planning operative strategy; however, a definite diagnosis is rather difficult because classic diagnostic signs (pulsatile abdominal mass with bruit, high output heart failure, acute dyspnea and low back pain) are presented only in 20%-50% of all such cases [3]. We could not note abdominal bruit in our case which could be due to large thrombus of the aneurysm sac which caused partial obstruction of the fistula and oblished the typical continuous bruit. High output heart failure due to increased venous return and jaundice from hepatic congestion were presented. A definite diagnosis offers advantages in surgical management. CT Angiogram is often the initial imaging method when evaluating abdominal aortic aneurysm. A enhancing of the IVC is a direct clue for the diagnosis of ACF. Angiogram, duplex scanning and magnetic resonance imaging (MRI) can also be use for the diagnosis [2]. The important problem; firstly in this case were dissection during proximal and distal control of the aneurysm due to the thick periaortic adventitial inflammatory reaction and abnormally large and friable iliac vein and IVC [4], secondly the control of venous bleeding from the fistula which was helped by finger tamponade alone, and if this maneuver failed, our strategy was to insert Foley catheter and balloon-inflated proximal and distally. However, this patient went well after the operation significantly.

Conclusion

Spontaneous aortocaval fistula (ACF) is rare. High degree of suspicion is required. Pre-operative detection is crucial for proper surgical management. Modern less invasive imaging provides accurate road map for the surgeon, at the old fashion invasive angiography does. Demonstration of direct communi-

cation is possible with CT angiogram, MR angiogram and Duplex scan. Stent-graft placement for ACF is becoming an effective option to avoid catastrophic bleeding or hemodynamic deterioration during an operation in some advanced and well equipped and trained units.

We wish to alert doctors to the importance of the early recognition and treatment of ACF, which is essential in reducing the mortality and complication of this disorder.

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