

Brucella aortitis with aortoduodenal fistula - case report

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ABSTRACT

Aim: The aim of this rare case report is to present primary aortoduodenal fistula (PADF) as result of the brucella aortitis.

Methods: The patient was admitted with signs of gastrointestinal bleeding and during surgery the aortoduodenal fistula has been identified. The postoperative recovery was normal and at the seventh post-operative day a fully recovered patient was transferred to regional hospital for further brucellosis evaluation and treatment.

Conclusion: The primary aortoduodenal fistula is a rare complication of abdominal aortic aneurysm (AAA) and a rare cause of gastrointestinal bleeding and maybe overlooked. Therefore, detailed anamneses, physical examination, early recognition of AAA rupture with CT angiography and emergency surgery are an algorithm for successfully resolving this life-threatening disease.

Keywords: Abdominal aortic aneurysm, Aortoduodenal fistula, Brucella aortitis

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INTRODUCTION

Aortoduodenal fistula is a rare complication of the abdominal aortic aneurysm (AAA). It may be the primary aortoduodenal (PADF) in the absence of previous aortic aneurysm surgery and secondary which occurs as a consequence of aortic aneurysm grafting. In both cases there is gastrointestinal bleeding which may be the first symptom of AAA rupture. The incidence at autopsy ranges from 0.04% to 0,07% while the incidence of secondary aortoduodenal fistula is somewhat higher, 0.5-2.3% (1). Without treatment mortality is almost 100%. With surgical intervention, survival ranges is from 18 to 93%. Out of total operated cases, 40% develop complications with postoperative mortality of over 30% (2). The causes of aortoduodenal fistula are atherosclerosis (for more than two-thirds of the cases in the literature) and chronic infective diseases such as syphilis, salmonellosis, brucellosis and tuberculosis. Brucellosis has high tendency to tissue ulceration leading to severe injury of heart valves, and large vegetations which are accompanied by tissue degradation and fistula formation on the aorta (3,4).

CASE PRESENTATION

A 40-year-old patient was transferred as urgent case from regional hospital with signs of gastrointestinal bleeding (abundant melena) and lumbosciatic pain. Patients had a history of fever, weight loss and arthralgia for the last two months but had not made an office visit to a doctor. During the examination, bleeding episode and collapse occurred. The patient was taken to the CT angiography which confirmed ruptured infrarenal aneurysm of the abdominal aorta, dimension 11 x 7.5 cm with hematoma (Figure 1,2). An emergency surgery was performed. The significant amount of fresh blood was aspirated through the nasogastric tube during anaesthetic preparation. During the surgical procedure, an aortoduodenal fistula was identified

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between aneurysmal sac and part distalis of duodenum with fresh callous lesion 3-5 mm in diameter, from which scarring bleeding and fresh lesion on the duodenum with duodenal fluid flows (Figure 3). The duodenal wall was sutured, aorta was repaired by *resectio* aneurysmae and *reconstructio* aorto-aortalis cum prosthetic 22 mm tubular graft. The peritoneal cavity was irrigated with antibiotic solution. In perioperative period patient received large amounts of liquid, blood and blood products and on the end of surgical procedure hemogram was in normal range.

Postoperative treatment: After surgical procedure patient was transferred to ICU and according to protocol, blood and urin cultures has to be checked. An infusion, triple antibiotic and analgesic therapy with prophylaxis of thromboembolism was performed. The first postoperative day patient was hemodynamically stable, complete blood count (CBC) test was regular - and patient was disconnected from mechanical ventilation.

The second postoperative day, patient was clinically symptomless with regular laboratory analysis. After mobilization, abdominal drain was removed. The third postoperative day onset of peristaltic, blood analysis was stable. Laboratory results were positive on brucellosis and after serology test, Rose Bengal (RBT) brucellosis was confirmed. After consultation with infectologist, doxycycline was added in therapy. The fourth postoperative day nasogastric tubes removed and oral insertion of small amounts of fluid began. The patient was transferred to standard care ward. The further postoperative recovery was regular and at the seventh postoperative day a fully recovered patient was transferred to the regional hospital for further brucellosis evaluation and treatment.

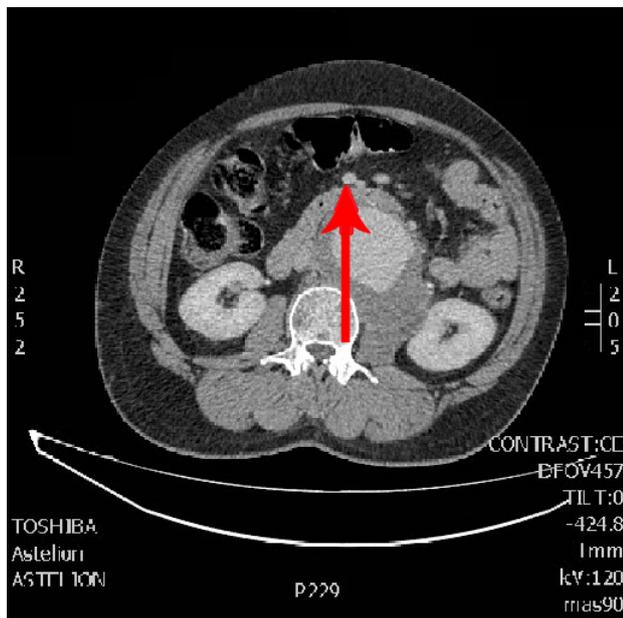


Figure 2. Perforatio duodeni

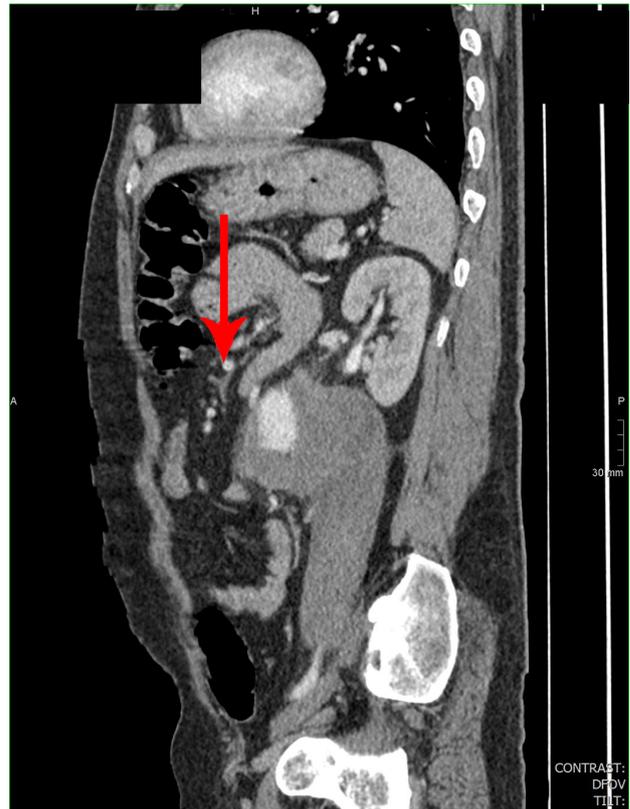


Figure 1. The lesion of the aorta abdominalis on CT-Angiography

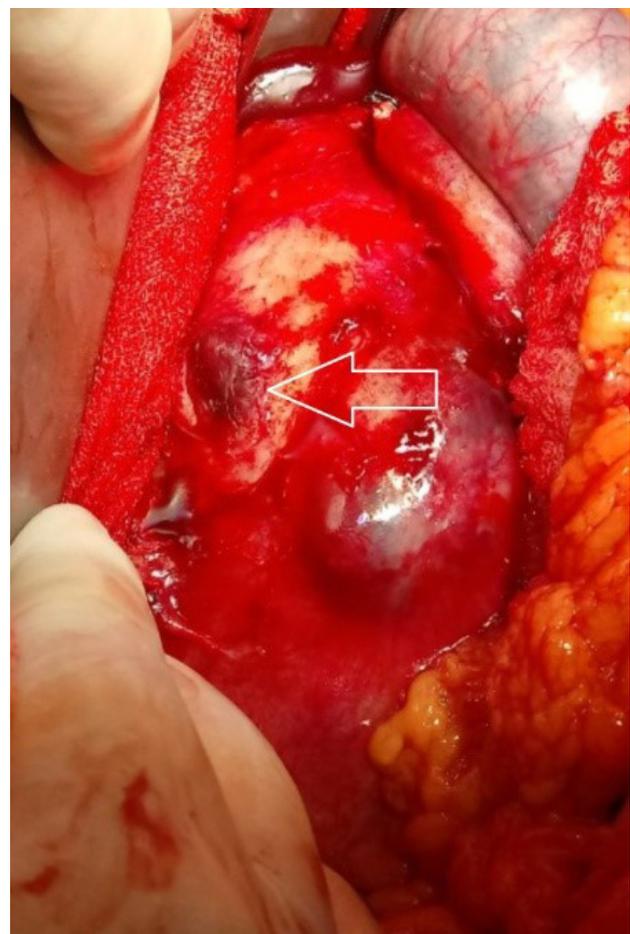


Figure 3. The lesion on the aorta abdominalis.

DISCUSSION

Brucellosis is a systemic infective disease. The incubation period varies between 1 and 5 weeks, and brucella infection may be asymptomatic or symptomatic. Cardiovascular complications of brucellosis like endocarditis, myocarditis and pericarditis are rare, less than 2%. However, brucella can also cause endarteritis, leading to peripheral and cerebrovascular aneurysms. The bacteria can directly infect endothelial cells and cause a sustained pro-inflammatory response (4,5). Brucella aortitis is complication with major morbidity and mortality potential because underdiagnosed on the time (5). In this case, we received patient with gastrointestinal bleeding and lumbosciatic pain. CT angiography confirmed ruptured infrarenal aneurysms of the abdominal aorta. During the surgical procedure aortoduodenal fistula has been identified. Patient was strongly positive for brucellosis by serological reaction and conventional microbiological blood cultures. The brucellosis aortitis with rare complication of aortoduodenal fistula was confirmed. Wu SJ et al published brucella aortitis associated with development of thoracic aortic aneurysm and aortobronchial fistula (4). Sabzi F et al published silent fistula of the ascending aorta to pericardium by brucella endocarditis (5). Appropriate diagnostic workup based on a high level of suspicion can offer a chance of survival in patients with aortoduodenal fistulas (6).

CONCLUSION

The primary aortoduodenal fistula is a rare complication of aneurysm of the abdominal aorta and a rare cause of gastrointestinal bleeding. Therefore, detailed anamneses, physical examination, early recognition of abdominal aneurysm rupture with CT angiography and emergency surgery are an algorithm for successfully resolving this life-threatening disease.

DECLARATION OF INTEREST

The authors declare no conflicts of interest.

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