RUPTURED SPLENIC ARTERY ANEURYSM (SAA) AS A COMPLICATION OF ACUTE PANCREATITIS – CASE REPORT

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The study presented a case of a 29 year-old male patient with a pseudoaneurysm of the splenic artery as a complication of acute pancreatitis. The pseudoaneurysm was incidentally diagnosed during control angio-CT. The patient underwent immediate surgery due to deterioration of his clinical condition. During laparotomy the pseudoaneurysm, spleen and part of the pancreatic tail were excised. The postoperative course proved uneventful and the patient was discharged from the hospital after seven days.

**Key words:** ruptured pseudoaneurysm, splenic artery aneurysm (SAA), splenectomy

The splenic artery aneurysm is a very rare complication of acute or chronic pancreatitis, and abdominal trauma (1, 2). Considering clinical practice the above-mentioned is a relatively rare condition, although remains a significant problem in general and vascular surgery. The main threat for the patient is the possibility of aneurysmal rupture, which in short time might lead towards massive abdominal cavity bleeding, and ensuing hypovolemic shock (3). Mortality in the above-mentioned case amounts to 70% (4, 5).

**CASE REPORT**

A 29 year-old male patient who was treated for acute pancreatitis the previous month was admitted to the Department of Surgery with suspicion of gastrointestinal bleeding. Gastroscopy was performed twice and no signs of bleeding were observed. Abdominal ultrasound showed an enlarged spleen and fluid in the peri-splenic area. The remaining abdominal cavity organs were free of pathology. During hospitalization the patient presented with significant fever (40°C), and severe epigastric pain. Laboratory results were as follows: WBC – 16,000, amylase – 300 IU/l, ALP – 250 IU/l. Abdominal computer tomography confirmed the presence of chronic pancreatitis during exacerbation, free fluid compartments, numerous pancreatic cysts (the largest was 7x3 cm in size), as well as features of splenic vein thrombosis with marked collateral circulation. Imaging diagnostics was supplemented by angio-CT, which demonstrated a ruptured splenic aneurysm, 35x27 mm in size, with bloody or purulent content fluid compartments in the peri-splenic and peripancreatic areas (fig. 1-4). In view of the rapidly deteriorating condition of the patient emergency laparotomy was performed. The abdominal cavity was opened by means of the transverse incision under the left costal arch. Intraoperatively, we observed the presence of a large splenic artery aneurysm, 3x4 cm in size, with a massive hematoma and bleeding to the peritoneal cavity. The splenic vessels were ligated, and the aneurysm and spleen...
excised. The histopathological examination result confirmed the presence of a splenic artery pseudoaneurysm. The postoperative course proved uneventful. The patient was discharged from the hospital seven days after the operation.

**DISCUSSION**

Splenic artery aneurysm was first described during autopsy by Beaussier in 1770 (6). It is the most common vascular anomaly of the visceral vessels (60%), and third most common aneurysm after aortic and iliac artery aneurysms (5, 7, 8). Contrary to the other aneurysms it is more commonly diagnosed in female patients (four-fold). The etiology and pathophysiology of the above-mentioned condition is not fully understood. Presumably, the main predisposing factors for the development of splenic aneurysms are as follows: history of pregnancy, arterial hypertension, liver cirrhosis, portal hypertension, acute and chronic pancreatitis, and abdominal cavity injuries (6, 7, 9).

Due to the morphological picture, splenic artery aneurysms may be divided into true aneurysms with preserved wall continuity (saccular or spindle-shaped) of the enlarged vessel, and pseudoaneurysms with disturbed wall continuity surrounded by muscles, fascia, and connective tissue. The splenic artery pseudoaneurysm is a rare complication of acute and chronic pancreatitis, or less frequently, abdominal trauma. In most cases it is asymptomatic. Diagnosis is incidental,
mainly during angiography or after its rupture (intraoperatively) (10).

Rarely does one observe unspecific right epigastric or subcostal pain, radiating towards the back and left upper extremity (Kehr’s sign). The above-mentioned are a consequence of aneurysmal delamination. Pain may be accompanied by nausea and vomiting. The main threat to the patient is aneurysmal rupture, which is manifested by sudden severe epigastric pain with symptoms of rapidly arising hypovolemic shock. Blood from the ruptured aneurysm flows to the peritoneal cavity, retroperitoneal space, surrounding organs, and gastrointestinal tract. In such cases, acute abdominal symptoms progressively subside. Bleeding that is stopped as a consequence of pressure equalization stabilizes the hemodynamic condition of the patient. Usually, after 48 hours recurrent bleeding is observed which is threatened by patient death in 90% of cases. The risk associated with aneurysmal rupture increases with its size, and the main predisposing factors are as follows: pregnancy, diameter of the aneurysm >2 cm, symptomatic aneurysm, enlarging aneurysm observed during imaging examinations, as well as liver diseases with coexisting portal hypertension. Splenic artery pseudoaneurysms are rarely observed, accounting for 4% of all aneurysms. Due to the small number of patients with the above-mentioned condition standard management guidelines do not exist.

It is believed that surgical treatment should be performed in case of clinical symptoms. Due to the small risk of rupture, asymptomatic aneurysms <2 cm should be subject to observation (5, 6, 7). In the remaining cases surgical intervention is recommended during which the aneurysm is excised, sometimes with the spleen and part of the pancreas. The type of surgical procedure depends on the localization of the aneurysm (proximal or distal part of the artery). It is now believed that the most advantageous to the patient during such surgery is the simultaneous reconstruction of the splenic artery, in order to prevent future complications associated with splenectomy. Alternative methods of splenic artery pseudoaneurysm treatment in high-risk patients are as follows: intravascular embolization, stent-graft implantation, and less frequently used, percutaneous thrombin injections (5, 6, 11-14). The above-mentioned is burdened with many complications, such as fever, epigastric pain, and splenic infarction associated with thrombus recanalization.

CONCLUSIONS

Splenic artery aneurysms as a complication of acute and chronic pancreatitis are rarely observed disease entities. Due to high mortality associated with aneurysmal rupture diagnostics and treatment should be immediately implemented. Surgical management is an effective and safe method having an advantage over percutaneous endovascular procedures in selected cases. We believe that every patient after acute or chronic pancreatitis should be subject to Doppler ultrasound or angio-CT, in order to exclude splenic artery pseudoaneurysm presence.

REFERENCES


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