Fatal superior mesenteric vein thrombosis due to acute Appendicitis in an elderly patient

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Abstract

Superior mesenteric vein thrombosis (SMVT) is a rare complication of acute appendicitis. It has no specific clinic manifestation. Anticoagulation, antibiotics and surgery are the main treatment pillars. We report herein a case of an 86-years-old women treated for acute appendicitis complicated with SMVT and massive pulmonary embolism.

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Abstract:

Superior mesenteric vein thrombosis (SMVT) is a rare complication of acute appendicitis. It has no specific clinic manifestation. Anticoagulation, antibiotics and surgery are the main treatment pillars. We report herein a case of an 86-years-old women treated for acute appendicitis complicated with SMVT and massive pulmonary embolism.

Manuscript

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INTRODUCTION

Superior mesenteric vein thrombosis (SMVT) caused by acute appendicitis is a very rare

entity. It may cause varying degrees of intestinal wall lesions as oedema, congestion,

and eventually necrosis. It is essential to make an early diagnosis, although its non-specific

clinical presentation, so as to initiate specific treatment as soon as possible to avoid fatal

outcome. Indeed, the mortality rate of SMVT associated with intra-abdominal infection is relatively high and ranges from 30 to 50% [1].

CASE REPORT

An 86 years old woman, with history of hypertension, diabetes and dyslipidaemia, was operated for acute appendicitis confirmed by abdominal ultra-sound. Intraoperative exploration (through a McBurney incision) revealed a gangrenous appendix with oedematous and slightly cyanotic ileo-caecal junction. The unusual aspect of the latter was assigned to local inflammation and usual appendectomy was performed. Three days later, she presented

dyspnea and hypoxemia. Abdomino-thoracic angioscan showed a proximal pulmonary

embolism with a circumferential thickening of the caecum and terminal ileum without any

local collection. Heparin therapy was started and antibiotics were prescribed. Seven days later, she had a new abdominal scan because of abdominal distension with diffuse abdominal

tenderness, fever and hyper leucocytosis. It suggested a mesenteric venous infarction as it

showed superior mesenteric vein thrombosis (Figures 1 and 2) associated to circumferential

thickening and default enhancement of the caecum and terminal ileum (Figure 1). The patient

had a respiratory failure and died before we could perform intestinal resection.

DISCUSSION

Pylephlebitis is defined as a septic thrombosis of the portal vein. It may be caused by infection of organs that drains into the portal venous system. This physio pathologic mechanism was proven in the 70s. The most common involved abdominal infection is colonic diverticulitis, then appendicitis and cholecystitis [2]. The incidence of septic thrombophlebitis of the porto-mesenteric veins due to acute appendicitis was close to 0.4% before 1950. With

improvements of antibiotics and surgery, it has become nowadays much rarer [3].

Symptoms of pylephlebitis are non-specific. Abdominal signs like abdominal tenderness or

distention and ascites may occur with increasing ischemia. In severe cases with trans mural

infarction and bowel gangrene, peritoneal signs such as rebound tenderness or rigidity should

be observed [4].

Abdominal computed tomography (ACT) is the most reliable diagnostic imagery. It could find out the primary source of infection, the extent of pylephlebitis, and eventually liver abscesses. Color flow Doppler ultrasound is also a sensitive test for studying the patency of the portal venous system [5, 6].

During acute appendicitis with SMVT, thrombi are formed rapidly with increasing

inflammation, possibly leading to intestinal oedema, congestion, and eventually necrosis.

Consequently, SMVT should be suggested in case of acute appendicitis with functional

occlusion and unusual appearance of the ileo-cecal junction during appendectomy particularly

in elderly and debilitated patients like in our case.

SMVT can be managed either surgically or by nonoperative approaches. Patients with signs of peritoneal irritation need often surgery for intestinal resection and eventually a thrombectomy. Nonoperative management of SMVT includes both invasive (pharmacologic thrombolysis) and non-invasive procedures.

When SMVT is slowly progressing, the intestinal blood flow remains almost intact thanks to

the development of collaterals so that intestinal necrosis could be avoided. Therefore,

conservative treatment using anticoagulants should be attempted first.

Anticoagulation therapy for pylephlebitis may reduce septic embolization to the liver from

infected portal thrombi and thus would prevent liver abscess formation. However, its use

remains a controversial issue, as its benefit has not been clearly demonstrated. Some authors

[7] reported that heparin adjunction is not necessary for pylephlebitis when the primary disease such as appendicitis or diverticulities is well controlled. In this case, anticoagulation therapy should not be started initially.

Some authors recommended systematic anticoagulation on the presumption of an

hypercoagulable state in addition to the risk of process extension which could lead to an enteric ischemia [8]. In fact, our patient had probably a hypercoagulable state as she presented a postoperative pulmonary embolism and she had a SMVT most likely from the beginning but unfortunately, misdiagnosed. Furthermore, as heparin therapy was started lately (3 days after appendectomy) she presented fatal intestinal infarction.

Nevertheless, there is still lack of data concerning the optimum duration of anticoagulation. A

short duration seems reasonable in case of septic SMVT without any intestinal infarction or

embolization [9].

Some authors suggested that interval laparoscopic appendectomy must be performed 2-3 months after treatment with antibiotics and anticoagulants [10, 11]. However, if the inflammation cannot be

controlled by conservative treatment, surgical removal of the primary lesion is mandatory even without signs of intestinal necrosis.

Despite anticoagulation proven efficiency, intravascular infusion of thrombolytics seems efficient with higher rate of recanalization. Furthermore, pharmacologic thrombolysis of clot would facilitate a possible thrombectomy [12].

In conclusion, septic pylephlebitis is rarely reported as a complication of acute appendicitis.

Due to its uncommon and non-specific symptoms, it is often misdiagnosed and thus still

associated with high mortality rate. Old patients with pain in the right iliac fossa, rarely related to acute appendicitis, should be explored by an abdominal angioscan not only because of possible abscessed caecal tumor but also to look for pylephlebitis and SMVT that is more common in elderly patient [13]. The role of anticoagulation therapy remains controverted but it seems mandatory in case of elderly or debilitated patients who are at high risk of thrombosis

extension and intestinal infarction.

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Figures legends

Figure 1: Coronal view of CT scan showing a 51mm superior mesenteric vein thrombosis (yellow arrow) with circumferential thickening and default enhancement of the caecum (black arrow heads). There is also a surrounding (peri-colic) fat infiltration in the right iliac fossa (white arrow heads)

Figure 2: Sagittal view of CT scan showing superior mesenteric vein extensive thrombosis yellow arrow).



