

GIANT RETROPERITONEAL AND MEDIASTINAL ABSCESS FOLLOWING ACUTE PANCREATITIS - A CASE REPORT AND REVIEW OF THE LITERATURE

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ABSTRACT

The infection of the retroperitoneal area (retroperitoneal abscess) is a relatively rare but serious infection, leading to considerable mortality. Most commonly, cases with retroperitoneal infection reported in the medical literature are as a complication of a local abdominal pathology. Retroperitoneal abscesses may be complicated with extension of infection into the peritoneal cavity, the pleural cavity, the mediastinum and with progressive dissection of the abscess into the anterior abdominal wall, hip or thigh. The aim of this study is to present an illustrative case of huge retroperitoneal abscess following acute pancreatitis. Review of the medical literature about the diagnosis and treatment of this surgical infection is made on the base of the presented case.

Key words: *retroperitoneal abscess, mediastinal abscess, lung abscess.*

Introduction

The retroperitoneal area is a potential space between the peritoneum and transversalis fascia lining the posterior portion of abdominal cavity. The infection of the retroperitoneal area (retroperitoneal abscess) is a relatively rare but serious infection, leading to considerable mortality. Retroperitoneal abscesses can occur as a complication of a known local abdominal pathology, as a result of bacterial infection from a distant septic focus, or as a type of infection with an unknown primary focus. Numerous abdominal organs (kidneys, ureters, pancreas, ascending colon, descending colon) can be source of bacterial infections that affect the retroperitoneal space with abscess formation [1,6,7,13,10].

The aim of this study is to present an illustrative case of huge retroperitoneal abscess following acute pancreatitis. Review of the medical literature about the diagnosis and treatment of this surgical infection is made on the base of the presented case.

Case Report

A 67 - year old male was admitted for diagnosis and treatment in our Department of Thoracic and Abdominal Surgery. The patient reported a two-week history of: intermittent abdominal pain (mild to moderate), chest pain (right hemithorax), fever (up to 38,6 °C), productive cough (putrid sputum), and weight loss (10 kg). A two months before his admission, the patient underwent an emergency laparotomy because of acute abdomen as a result of acute pancreatitis. Drainage of lesser omental sac and drainage of free peritoneal cavity was performed, according to the medical documentation presented by the patient.

Physical examination at admission established: reduced breath sound on the right side with crepitations; distended abdomen with a scar of median laparotomy; tender to palpation over the upper abdomen — more pronounced in the right hypochondrium.

Computed tomographic scan (CT) of the thorax and abdomen was performed and showed a mass of liquid collection in the retroperitoneal area and mediastinum — a huge abscess that is extended inferiorly from the pelvic brim, through right lateral division of the retroperitoneal space and superiorly into the posterior mediastinum - 10 cm above the diaphragm (fig. 1, fig. 2). It was established that from posterior mediastinum the abscess had broken through lower lobe of the right lung (lung abscess) / (fig. 3).

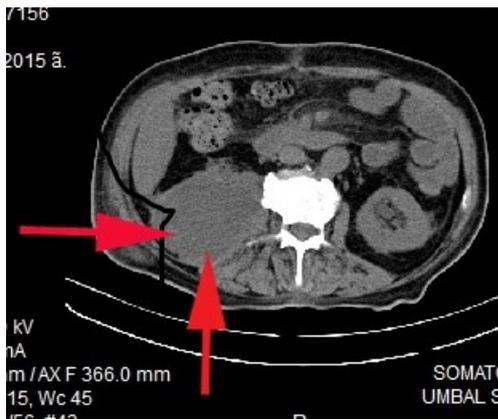


Figure 1. CT image of the retroperitoneal abscess: the red arrows indicate boundaries of the pus collection.

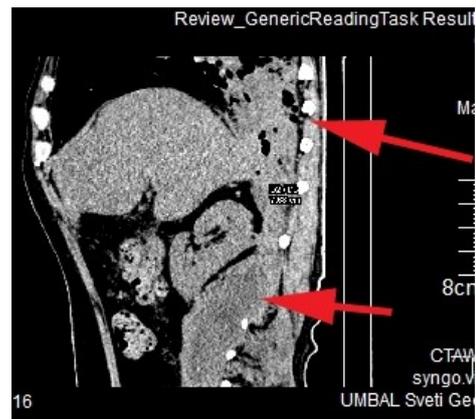


Figure 2. CT image of the extension of the retroperitoneal abscess into posterior mediastinum: red arrows indicate pus collection.

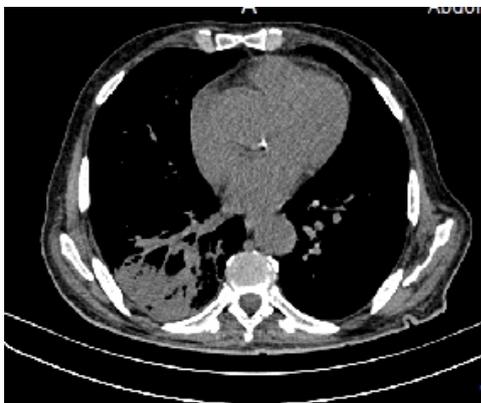


Figure 3. CT image of the right lower lobe abscess.



Figure 4. CT scan – 3D reconstruction shows the tube drainage of the retroperitoneum and posterior mediastinum.

Median relaparotomy was performed. Through the exploration of the abdominal cavity, focuses of peritoneal steatonecrosis, edematous pancreas and retroperitoneal abscess were established. A wide incision of the posterior parietal peritoneum (through the right lateral canal) was performed with aspiration of more than 1700 ml pus collection from the retroperitoneal space. The posterior mediastinum was drained through the retroperitoneal approach — by a tube drainage Fr. 32 (simultaneously draining of the retroperitoneum and the mediastinum). Hypogastrium (pelvic area) was also drained by two drainages (Fr. 30).

In the postoperative period bronchoscopy was performed (to facilitate bronchial toilet) — every day for a period of ten days.

On the 7th postoperative day controlled CT scan of the abdomen and thorax established significant resolving of the inflammation of the retroperitoneum, the mediastinum and the right lung (fig. 4, fig. 5). On the 20th postoperative day the patient was discharged from the hospital in a good health and with lung abscess radiographically fully resolved (fig. 6). During the first and second month of follow-up, the patient presented no abdominal and thoracic complaints.

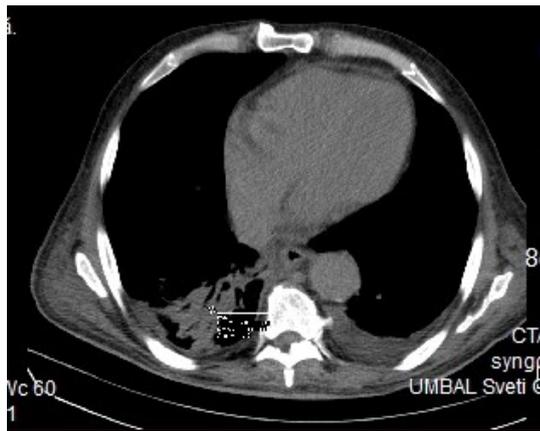


Figure 5. CT image shows significant resolving of the inflammation the right lung abscess.

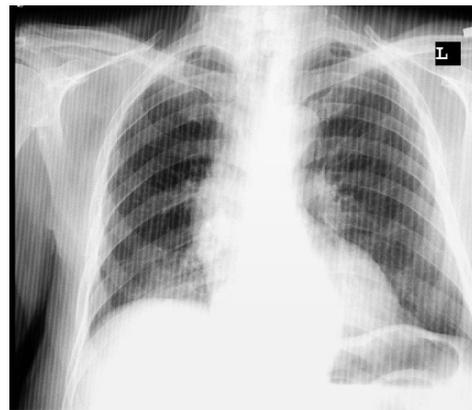


Figure 6. Thoracic X-ray at 20th postoperative day: fully resolved lung abscess.

Discussion

The retroperitoneal abscesses are relatively rare type of surgical infection. There is a paucity of medical literature on this infection. This fact explains why the most of publication onto this topic in periodical medical literature are mainly as “case reports”. This publication was also set up on the base of a case with retroperitoneal infection. On the base of this case, the review of the literature on this surgical problem was made.

Bacterial infection of the retroperitoneal space can occur as a complication of a known local abdominal pathology, as a result of bacterial infection from a distant septic focus, or as a type of infection with an unknown primary focus. Most commonly, cases with retroperitoneal infection reported in the medical literature are as a complication of a local abdominal pathology [3,4,5]. The most common causes of isolated retroperitoneal infection (abscess) are renal diseases. The retroperitoneal abscesses of renal origin as a rule are confined to Gerota’s fascia and are considered as a separately type of retroperitoneal infections. Known causes of retroperitoneal abscesses, as a complication of abdominal pathology, include pancreatitis, diverticulitis, retroperitoneal appendicitis, biliary tract disease, perforated colon carcinoma, peptic ulcer disease (ulcer perforation), and pancreatic cancer [3,4,5,11,12,15,16].

There is a risk of spreading the inflammation from the pancreas in the retroperitoneal space in patients with acute pancreatitis. Two ways of spreading the inflammation from the pancreas into the retroperitoneal space are possible — diffuse, with formation of a severe retroperitoneal phlegmon and limitation of the inflammatory process with formation of retroperitoneal abscess. Retroperitoneal abscesses have much better outcome than phlegmonas that was confirmed by the presented case report.

Being complication of a local abdominal pathology (most commonly), retroperitoneal abscesses may be complicated with extension of infection into the peritoneal cavity, the pleural cavity, the mediastinum and with progressive dissection of the abscess into the anterior abdominal wall, hip or thigh. This publication presents a rare case of a huge retroperitoneal abscess that is complicated with spreading of the infection from retroperitoneal space into the mediastinum and the lower lobe of the right lung with mediastinal and lung abscess formation.

The review of the literature established that the extension of the infection from the retroperitoneal space appears when the diagnosis is delayed. The presented case confirms this standpoint — it was a period of two months from the onset of the acute pancreatitis to the CT-scan confirmation of the retroperitoneal abscess. The retroperitoneal compartment is relatively “hidden” to the examiner and retroperitoneal tissues may demonstrate little visible reaction to bacterial

infection — these are the main causes of delaying the diagnosis of retroperitoneal infections [6,8,10,14]. The high index of suspicion and computed tomography studies is considered as a cornerstone for the accuracy of the diagnosis of retroperitoneal infections, which was confirmed by the presented case.

Optimal treatment of retroperitoneal abscess is surgical drainage. Successful drainage hasn't contaminate additionally retroperitoneal space and peritoneal cavity. In some cases the best approach is trough a flank and in the other cases by a presacral approach. There are reports in the literature describing pigtail catheter drainage of retroperitoneal abscesses trough the peritoneal cavity. In this case s surgical drainage can always be instituted later if resolution of abscess doesn't occur by pigtail drainage [2,6,9,14,17].

Surgical drainage trough peritoneal cavity was used for the presented case. The decision of this approach to the retroperitoneal space was made on the base of cause of the retroperitoneal abscess and spreading of the inflammatory process. At first, using median laparotomy the whole peritoneal cavity was revised, especially pancreas. On the second, a wide incision of the parietal peritoneum was possible to perform with successful drainage of the retroperitoneal space. The posterior mediastinum was also successfully drained by abdominal approach to the retroperitoneal space.

The presented case is very rare because of spreading of the retroperitoneal inflammatory process into the right lung trough the mediastinum. At the time of patient's admission it was established perforation of the lung abscess into the bronchial tree — the lung abscess was drained spontaneously. The treatment of the lung abscess was successful by conservative approach — antibiotic therapy with repeated bronchoscopy. Bronchoscopy, using in the postoperative period, facilitated bronchial toilet with fully resolve of the lung abscess.

Conclusion

This publication presents a case of 67 - year old patient with a giant retroperitoneal abscess following acute pancreatitis. This retroperitoneal abscess was complicated with spreading of the infection into the posterior mediastinum and the lower lobe of the right lung. The extension of inflammatory process was established by computed tomographic scan. The retroperitoneal, mediastinal and lung infection was successfully treated by surgical drainage coupled with conservative approach (antibiotics therapy and toilet bronchoscopy).

Review of the literature reveals that retroperitoneal abscess most commonly appears as a complication of a known local abdominal pathology. The computed tomographic scan is a cornerstone for the accuracy of the diagnosis of retroperitoneal abscesses with surgical drainage as a form of optimal treatment.

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