

Giant Subphrenic Abscess: A Rare Complication of Laparoscopic-assisted Vaginal Hysterectomy

Dear Editor,

Our emergency department admitted a 43-year-old woman because she was suffering from intermittent fevers and pain in her right flank. One month earlier, a laparoscopy-assisted vaginal hysterectomy had been performed to treat leiomyomas. Under general anaesthesia, the patient was placed in the modified lithotomy position. Three trocars were introduced into the pelvic cavity where the uterus was sectioned and removed. Seven fibroids were found in the uterine walls, one of them measuring up to 3.5 cm. The operation went relatively smoothly with no complications arising. The total operation time was 3 hours. Estimated blood loss from the surgery was 350 ml. Cephalexin (1000 mg every 8 hours) was administered intravenously preoperatively as well as postoperatively, and Gentamicin (80 mg every 8 hours) was added after the surgery. The patient was discharged from the hospital after 5 days.

At follow-up visits, she reported fever, nausea, dysuria and pain in her right flank. Urinalysis showed 10 red cells, 10 white cells per high-power field and also tested positive for bacteria. Kidney-ureter-bladder (KUB) x-ray revealed 3

small right lower renal calyceal stones (Fig. 1). Therefore, she was referred to an urologist for extracorporeal shock wave lithotripsy. In the following 2 weeks, both the urologist and gynecologist evaluated her more than once. However, her symptoms persisted. She came to the emergency room on post-surgery day 19.

The patient exhibited diaphoresis and rigors and also appeared uncomfortable. Her temperature was 38.5°C, the pulse 132 beats per minute, the blood pressure 104/73 mmHg, the respiration rate was 18 breaths per minute, and the oxygen saturation 100% while the patient was breathing ambient air. The abdomen was flat, with active bowel sounds, but there was tenderness and mild guarding to deep palpation in the right upper quadrant. In the right flank, knocking pain could be elicited. The remainder of the examination was normal.

Laboratory evaluation showed a white cell count of 33800/uL, and a haemoglobin level of 9.6 g/dL. Levels of electrolytes, tests of renal function, and urinalysis were normal. Computed tomography (CT) scanning of



Fig. 1. KUB radiography revealed three small right lower renal calyceal stones. (arrows).



Fig. 2. Computed tomography revealed a huge, solitary right subphrenic abscess.

the abdomen and pelvic revealed a giant encapsulated subphrenic abscess, which measured 21 x 12 x 6.3 cm³. The abscess displaced the liver to the left (Fig. 2). Specimens of blood and urine were obtained for culture. We began intravenously administering Ceftriaxone (2000 mg every 12 hours), and Metronidazole (500 mg every 8 hours). Two litres of normal saline were administered until the vital signs returned to normal. The patient was then admitted to the gastroenterology ward.

Under sonography guidance, a 15-G pigtail catheter performed percutaneous drainage of the abscess. About 500 ml of pus was initially drained. A culture of the pus grew abundant mixed aerobic and facultative anaerobic bacteria, such as *enterococcus species*, *enterobacter cloacae*, *citrobacter freundii*, and *staphylococcus lugdunensis*. The cultures of blood and urine were sterile. Follow-up sonography showed a reduction in the abscess size to 2 cm (Fig. 3). The pigtail catheter was removed after 8 days. The hospital was able to discharge the patient after 13 days.

Discussion

Subphrenic abscesses continue to be associated with high mortality, even in today's era of broad spectrum antibiotics and sophisticated surgical techniques. Overall mortality is 31 %, but higher mortality rates occur when there is multiple space involvement (39 %) or if the abscesses develop after emergency procedures (35 %).¹ They may occur after the rupture of any organ in the abdomen or following any diagnostic or surgical procedures in the abdomen. Although multiple causes of intra-abdominal abscesses exist, the following are the most common: (i) perforation of a diseased

viscus including peptic ulcer perforation; (ii) perforated appendicitis and diverticulitis; (iii) gangrenous cholecystitis; (iv) mesenteric ischaemia with bowel infarction; and (v) pancreatitis or pancreatic necrosis progressing to pancreatic abscess. Other causes include untreated penetrating trauma to the abdominal viscera and postoperative complications, such as an anastomotic leak or missed gallstones during laparoscopic cholecystectomy.

Sinha reported on a case of subphrenic abscess that was an unusual complication of a vaginal hysterectomy.² Bufalari found that percutaneous drainage and surgical drainage are equally efficacious treatments for postoperative intra-abdominal abscesses in terms of mortality, morbidity and duration of drain tube placement.³ However, percutaneous drainage should be the treatment of choice because it is less invasive and more cost effective. The results are very good for simple, unilocular abscesses but less so for complex ones. Lam et al⁴ described a case in which a large multiloculated subphrenic abscess was successfully drained laparoscopically without contaminating the general peritoneal cavity.

This case is interesting because the initial symptoms of the patient right after the surgery: fever, nausea, dysuria, flank pain accompanied with evidence of right renal stones found by KUB, masqueraded the abscess as complicated acute pyelonephritis. This allowed the abscess to grow gradually to a size of about 21 x 12 x 6.3 cm³. Amazingly, a pigtail catheter was able to drain such a giant abscess successfully. Due to high mortality associated with subphrenic abscesses, a prudent physician examination and high clinical alert to surgical complications are required to minimise morbidity and prevent mortality.

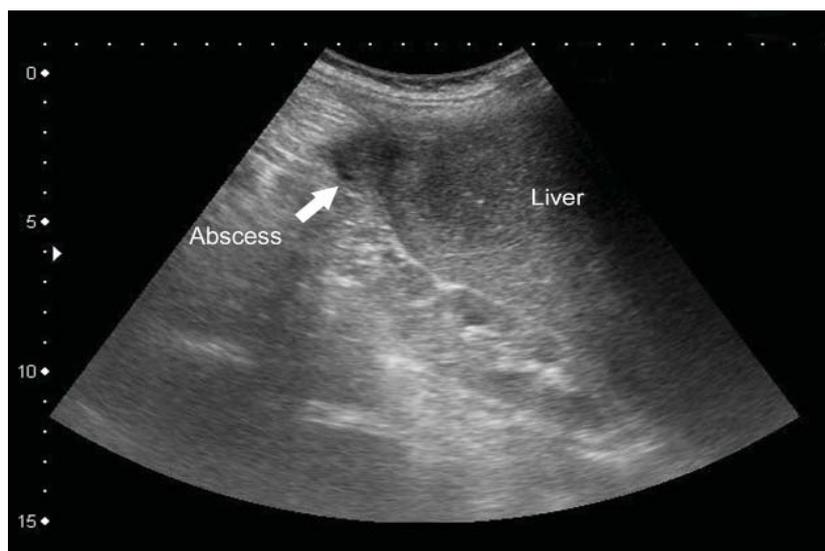


Fig. 3: Follow-up abdominal ultrasound showed a reduction in the abscess size to 2 cm.

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