Spontaneous Rupture of Pyonephrosis into Peritoneal Cavity : Report of 2 Cases

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Two cases of spontaneous rupture of pyonephrosis into the peritoneal cavity were reported. The difficulty in diagnosis and treatment were stressed. A misdiagnosis invariably meant a fatal outcome.

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Spontaneous rupture of pyonephrosis into the peritoneal cavity is very rare and is not usually considered as one of the causes of peritonitis. We are reporting on two such cases. The pitfalls, difficulty in diagnosis, and management will be discussed.

CASE REPORTS

CASE 1 : A housewife, aged 28, four months post partum, was admitted to the hospital on January 8, 1976 complaining of right flank pain radiating to the suprapubic area for one week. She was treated at a provincial hospital without any improvement. There was no history of any injury.

When she was 3 months pregnant, she was found to have right staghorn calculi at Ramathibodi Hospital. Under the circumstances conservative treatment was recommended and she was advised to have regular check ups at her local hospital.

On admission, the patient was in acute distress. She had a high fever. Her abdomen was distended and silent with generalized tenderness especially more marked on the right side. Rectal examination revealed marked tenderness in the right iliac fossa.

The following investigations were carried out; Hemoglobin 13.5 gm/100 ml, WBC 14,500 per mm^3(PMN 78%, L 22%), BUN 36 mg/100 ml, WBC in urine 50/HPF, RBC 10-12/HPF. Plain film of the abdomen showed right staghorn calculi, marked intestinal dilatation and free fluid in the peritoneal cavity.

Abdominal tapping revealed foul smelling and purulent fluid. Culture showed Escherichia coli sensitive to several antibiotics. Exploratory laparotomy through a midline abdominal incision under general anesthesia revealed approximately 2,000 ml of purulent fluid in the peritoneal cavity. Examination of the abdominal organs showed no abnormality except for a thickened fibrotic area with coated fibrin on the retroperitoneum over the second part of the duodenum. There was no obvious connection between the intra and retroperitoneal spaces. No definite cause of peritonitis could be found. Several drains were placed in the peritoneal cavity.

Her postoperative course was eventful. Sepsis and electrolyte imbalance were the main problems. Despite all possible resuscitative efforts, she died on January 30, 1976.

Autopsy revealed generalized peritonitis. Staghorn calculi were found in the right kidney which also contained pus. There was perinephric abscess which had ruptured into the peritoneal cavity through a hole which was plugged with a fibrin clot.

CASE 2 : A 48 year old married Thai male was admitted to the hospital on March, 22, 1980 complaining of left-sided abdominal pain with fever and chill for 10 days. Physical examination showed the patient to be in acute distress. The temperature was 38.5° C. There was guarding and rigidity in the left upper quadrant of the abdomen. There was also some tenderness over the left costovertebral angle. The abdomen was distended and silent.

The following investigations were carried out : Hemoglobin 6.5 gm/100 ml, WBC 21,000 cells/mm^3 (PMN 88%, band 2%, L 6%, M 4%), BUN 24 mg/100 ml. The white blood cells in the

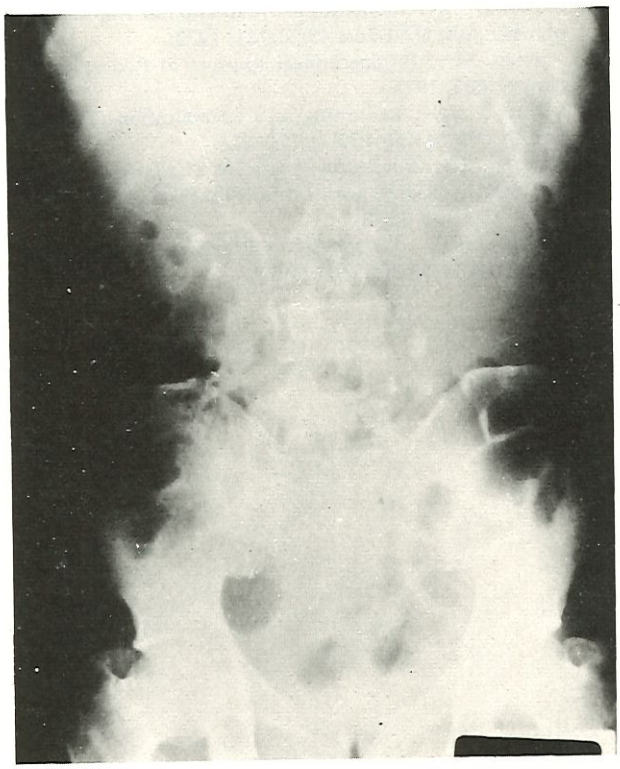

Fig. 1 Stone in the left ureter at the level of 4th lumbar vertebra.

urine were too numerous to count. The IVP showed a 1 x 1.5 cm stone in the left ureter at the level of the fourth lumbar spine (Fig. 1). The left kidney showed no function. The right kidney was normal. There was generalized intestinal dilatation.

Exploration was carried out through a left lumbar incision. There were marked adhesions and inflammatory changes in the perirenal space. The ureter could not be identified. The left kidney was enlarged and filled with a large amount of sanguinous purulent fluid. It was impossible to perform a nephrectomy, therefore nephrostomy was carried out. Suspecting intraperitoneal rupture of pyonephrosis, the peritoneum was opened only to find sanguinous purulent fluid, an organized clots and fibrin coated small intestine and omentum. There were no ruptures of any other hollow viscera. Peritoneal lavage was carried out. Multiple drains were placed in the abdominal cavities. Pus culture showed Escherichia coli sensitive to Gentamycin, Kanamycin and Trobamycin.

The immediate post operative course was uneventful until the second week when the patient became pyrexic. Only a small amount of cloudy urine was drained via the nephrostomy tube. He developed tenderness in the left upper abdominal quadrant. A further collection of pus was suspected. Through a midline abdominal incision, a collection of pus was found extraperitoneally tracking from the perinephric space. Nephrectomy was found to be impossible, so only drainage of the retroperitoneal space was carried out. The postoperative course was uneventful. The fever subsided. The wound healed per primum. The nephrostomy tube was removed and the patient was discharged after 32 days in the hospital.

At the follow up 2 months later, his condition was satisfactory. We considered that nephrectomy would be hazardous, therefore we decided to observe his progress only.

DISCUSSION

Spontaneous rupture of various pathologic kidneys into the retroperitoneal cavity is uncommon[1] and most of them cause retroperitoneal bleeding. A rare condition of rupture of the pyonephrotic kidney spontaneously could be the cause of retroperitoneal abscess[2,3]. However, the spontaneous rupture of the pyonephrosis into the peritoneal cavity is extremely rare. Less than 30 cases of intraperitoneal rupture of pyonephrosis have been documented[4-19]. Some were treated successfully. Though this condition is rare, it should be suspected as a cause of peritonitis especially when the kidney is enlarged or there is calculus in the urinary system. Our first case illustrated the difficulty of diagnosis and management. Had drainage of perinephric abscess and nephrostomy or possible nephrectomy been included in the procedure, the fatal outcome might have been averted. The tragedy of the first case made us aware of the condition and was responsible for the successful outcome in the second case.

In the first patient, we might have treated her with a course of antibiotics on her first visit to the hospital. If her symptoms had not subsided, we would have had to consider terminating her pregnancy and remove her renal stone. This report also stresses the importance of a more careful follow up of any renal pathology during pregnancy.

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