

## A Complication After Percutaneous Nephrolithotomy

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### CASE PRESENTATION

A 24-year-old woman with left renal pelvis and lower calyceal stones was admitted for percutaneous nephrolithotomy (PCNL) (Figure 1).

The surgery was uneventful. Nephrostomy tube and ureteral stent were removed on the 2<sup>nd</sup> postoperative day. Soon after, urine leakage from the site of the nephrostomy tube and fever developed. Temperature was as high as 39° C and leukocytosis up to 20 000/mm<sup>3</sup>, with neutrophils as the dominant part (80%), was reported.

Double J stent was inserted through ureteroscope. On the

3<sup>rd</sup> postoperative day, the patient showed signs and symptoms of obstipation, vomiting, abdominal tenderness and rebound tenderness, and high fever. Plain abdominal x-ray at supine and upright position revealed air fluid level and no evidence of gas pattern in the pelvis (rectum) and sentinel loop in the left upper quadrant (Figure 2). Chest x-ray revealed pleural effusion in both sides (Figure 3).

### QUIZ

What could be the possible cause of the abdominal pain and obstipation?

What is your suggestion as the next step of diagnosis and treatment?

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**Figure 1.** Intravenous urography demonstrates a 3-cm stone in the left kidney.



**Figure 2.** Plain Abdominal radiography shows multiple air fluid level patterns and empty pelvic cavity.



**Figure 3.** Chest x-ray reveals bilateral pleural effusion.

## Answers:

Conservative treatment with potassium chloride (KCl) 30 mEq /day, ceftriaxone 1 gr twice/ day, and metronidazole 500 mg three times/day was started. The patient was under close follow-up. Abdominopelvic computed tomography scan with contrast medium showed a huge retroperitoneal urinoma, which extended from the lower pole of the left kidney to the ipsilateral pelvic cavity. A massive pleural effusion was also seen in both sides (Figure 1).

Indwelling urethral catheter was placed into the bladder and the patient was kept nil per os (NPO) until the 7<sup>th</sup> postoperative day. On the 7<sup>th</sup> postoperative day, the patient showed signs of bowel movement, defecation, and gas passage. Vomiting stopped and the temperature became normal (37.1°C). Repeated ultrasonography and chest x-ray on the 7<sup>th</sup> postoperative day revealed a normal kidney without any evidence of urinoma or pleural effusion (Figure 2). The

patient was discharged thereafter.

Differential diagnoses for this patient are as follows:

- 1- Bowel injury: That may mimic signs and symptoms of urinoma. But by the bladder drainage and placement of double-J ureteral stent, patient's symptoms will not disappear and will deteriorate continuously.
- 2- Splenic and liver injury: In which, the serum level of hemoglobin decreases. There is a distention of abdominal cavity, and the patient suffers from signs and symptoms of shock.
- 3- Pleural effusion: Patient complains from fever and dyspnea. Chest x-ray reveals a blunted costovertebral angle. The bowel movement decreases; thus, the patient may have vomiting in absence of obstipation. Plain abdominal x-ray reveals air fluid pattern level.

4- Ileus: It is usually related to decreased serum level of potassium, and mimics all signs and symptoms of urinoma formation.

This case highlights that urinary leakage and urinoma formation may mimic the signs and symptoms of iatrogenic bowel injury, and conservative treatment is successful in management of this condition.



**Figure 1.** Abdominopelvic computed tomography demonstrates a huge urinoma extending to the ipsilateral pelvic cavity.



**Figure 2.** Normal chest x-ray after conservative treatment.