



## Retroperitoneal Urinoma after Percutaneous Nephrolithotomy

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### Abstract

*Percutaneous nephrolithotomy is the standart treatment for large,multiple renal Stones. Although this surgical technique was defined in 1979, the overall complication rate is approximetely 83%. The complications are divided into 2 groups; major and minor. Pain, fever, urinary tract infection and renal colic are minor complications. Septicemia and severe hemorrhage requiring blood transfusion are the most common major complications. Urinoma is one of the uncommon complications of percutaneous nephrolithotomy with an incidence of 0.1%. We report a case of retroperitoneal urinoma after percutan renal surgery.*

**Keywords:** Complication, percutaneous nephrolithotomy, urinoma

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## Introduction

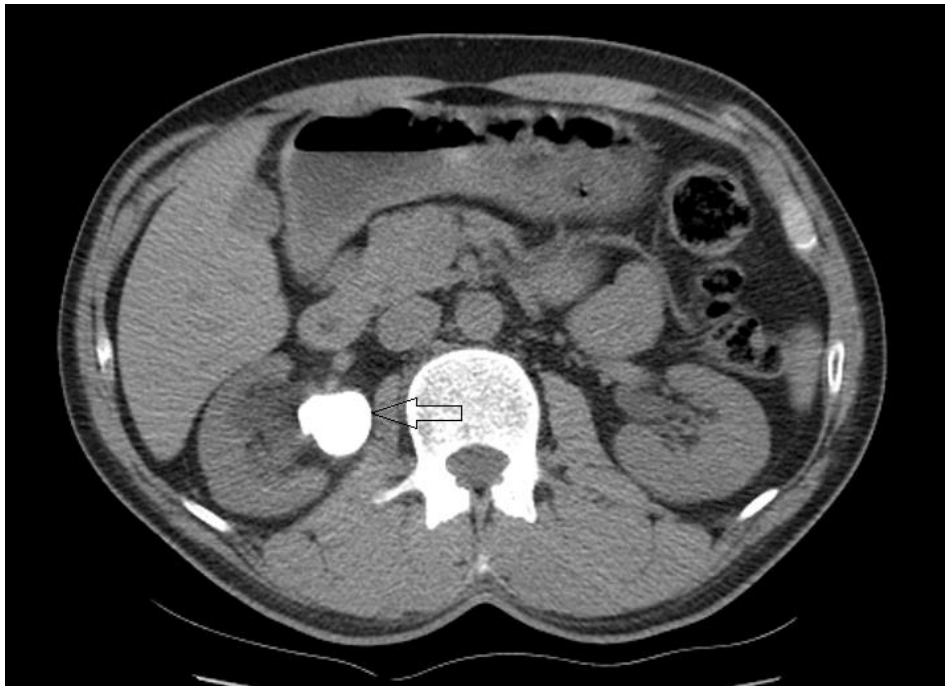
Percutaneous nephrolithotomy (PNL) was defined for surgical treatment of the renal Stones in 1970 [1]. This operation is the first option for treatment of large or multiple renal stones. According to the literature, complications of PCNL may occur with an overall complication rate up to 83%. The complications are divided into 2 groups; major and minor. Pain, fever, urinary tract infection and renal colic are minor complications. Septicemia and severe hemorrhage requiring blood transfusion are the most common major complications. Urinoma is a very rare complication with an incidence of 0.1% and Grade 3a complication according to the modified Clavien system [2].

## The Case

A 42 year-old man presented with right flank pain during the last three months. Kidney ureter bladder (KUB) and computerized tomography (CT) revealed 4.5 cm sized stone in right kidney (Figure 1 and 2). The patient was treated with percutaneous nephrolithotomy (PCNL) under general anesthesia. The patient was discharged with a few 5-6mm residual renal stones on postoperative fourth day. After two weeks the patient was applied to our clinic with routine follow up. KUB revealed upper urinary stone and CT showed huge urinoma with upper ureter stone (Figure 3). Laboratory results were within normal limits. Firstly the ureteroscopic removal of stone in upper urinary tract was done with rigid ureterorenoscopy and double j stent was inserted. Open surgical exploration was performed for drainage of urinoma. The wall of the urinoma was excised. The patient has no complaint during the 1 year follow-up period.



**Figure 1.** KUB showed the renal stone



**Figure 2.** CT image of the renal stone



**Figure 3.** Retroperitoneal urinoma after the operation

## Discussion

PNL is the standart treatment for staghorn and complex renal calcules [3]. Complications after or during PNL operation may ocur with an overall rate of up to 83% that include urinary extravasation, postoperative fever, bleeding and major complications such as septicemia, colonic and pleural injury are rare [2].

Urinoma is defined as a collection of urine formed outside the urinary system[4]. The most common causes of urinoma formation are trauma and obstruction. According to the modified Clavien system, there are 5 grade complications of PNL. Urinoma is one of the grade 3a complications with an incidence of 0.1% [2]. Lee et al reported the urinoma formation with 0.3% of the 582 patients [5]. In an another study of Bahar et al, they reported that there was not any case of urinoma in analysis of 671 patients [1].

We report a case of retroperitoneal urinoma after PNL operation. We think that, urinoma devoleped after the PCNL operation, because of residuel stone migrated from kidney to the upper ureter. We suggest that if any residual stone after PCNL, inserting double j stent is necessary to prevent urinoma formation and urologist should be aware of the urinoma development risk after PNL operation.

## References

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