

Laparoscopic-Assisted PCNL in a Patient with Ipsilateral Flank Hernia and Retrorenal Bowel – A Case Report

ABSTRACT

In recent times, laparoscopic-assisted percutaneous nephrolithotomy (PCNL) has been used for urolithiasis with abnormal renal anatomy and its indications have been expanding. We describe a case of a partial staghorn renal calculus, in a patient with previous open right pyelolithotomy procedure, with an ipsilateral flank (incisional) hernia and its management with laparoscopic-assisted PCNL.

Key words: Laparoscopic assisted PCNL, Flank hernia

INTRODUCTION

Transperitoneal laparoscopic-assisted percutaneous nephrolithotomy (PCNL) is now an established surgical technique to facilitate management of urinary stone disease in abnormal anatomical situations such as ectopic pelvic kidneys, Horseshoe kidneys, cross-fused ectopic kidneys, anterior calyceal diverticula, and musculoskeletal deformities, to avoid bowel injury during percutaneous access.^[1] We, herein, present a case, where laparoscopic assistance was needed to mobilize retrorenal bowel in a patient with a large ipsilateral loin (incisional) hernia with bowel as its content, to facilitate PCNL for a partial staghorn calculus.

CASE REPORT

A 50-year-old lady with a history of open right pyelolithotomy done 10 years ago presented with large flank (incisional) hernia and ipsilateral pain. On investigation, she was found to have a partial staghorn calculus in the lower calyx extending

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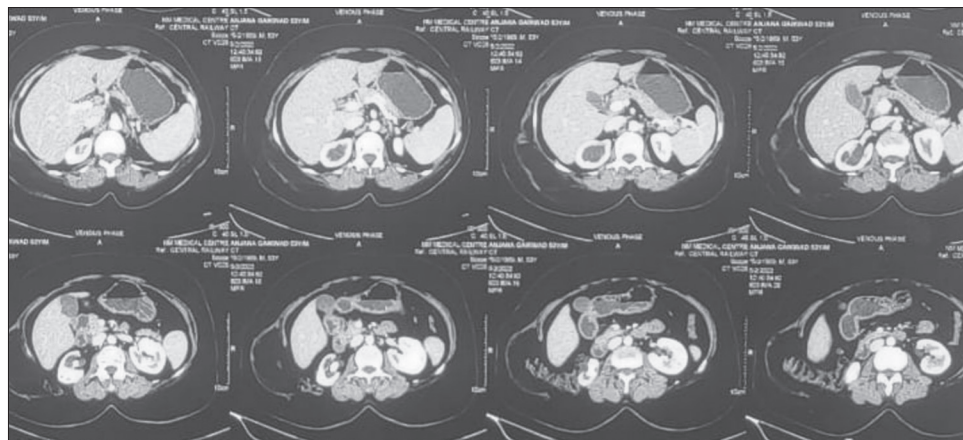
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into the pelvis, with bowel loops extending retrorenally in the incisional hernia sac, which extended posterior to the kidney.

To avoid bowel injury, instead of conventional prone PCNL, the patient was worked up for a laparoscopic-assisted Supine PCNL. The procedure was performed under general anesthesia, in a Galdakao-modified Valdivia position. First, a cystoscopy was done and a retrograde ureteric open-ended catheter was placed. Pneumoperitoneum was created



and laparoscopic ports were placed. Bowel loops were mobilized laparoscopically and dropped medially, away from the hernial sac and from the lateral and posterior aspect of the right kidney to allow percutaneous access. Retrograde pyelography was performed and supine PCNL was achieved. The pneumoperitoneal pressure was kept at 10 mm of Hg at the time of puncture and dilatation to avoid movement of kidney away from the puncture site. Two punctures were required to clear the partial staghorn calculus. A nephrostomy drain, a retroperitoneal drain (through lateral port site), a 6 F/26 cm ipsilateral DJ Stent and a Foley catheter were kept. Postoperatively, the patient did well and the surgery for the incisional hernia was suggested as a second stage, later.

DISCUSSION AND CONCLUSION

Adam *et al.* have advocated Mini PCNL in a patient with staghorn calculus with ipsilateral incisional hernia, with percutaneous access using ultrasound and fluoroscopic guidance, to avoid iatrogenic injury to the bowel.^[2] A flank incisional hernia, with subsequent ipsilateral large calculus needing a PCNL itself is a unique case scenario, especially with bowel as content of the hernia, extending retrorenally. Such unusual situations need innovation and combination of surgical techniques and the result of such team – work is often rewarding and satisfying.

There are a few points of technique from our senior author:

1. Open Hassan's technique of laparoscopic entry is better than closed versus technique

2. Multiple ports may be needed, to retract the liver, bowel, and even to fix the kidney (holding the Gerota's fascia) with grasper to avoid untoward or excessive movement during the puncture or dilatation
3. Y-ing of track, to make another puncture through the same skin incision helps clearing calculi from adjacent calyces
4. Combining PCNL with retrograde flexible ureterorenoscopy (Endoscopic combined intrarenal surgery) can help recover migrated fragments from the other calyces and deliver to the index puncture tract
5. A nephrostomy drain may be unnecessary if DJ Stent is placed and a peritoneal drain may be kept for a day.

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