

MANAGEMENT OF LITHIASIS IN PELVIC KIDNEY THROUGH LAPAROSCOPY-GUIDED PERCUTANEOUS TRANSPERITONEAL NEPHROLITHOTRIPSY

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ABSTRACT

We report the case of a patient with pain and an abdominal palpable mass whose tests showed a left pelvic kidney with a 1.5-cm stone in the renal pelvis. We describe the successful management through videolaparoscopy-guided percutaneous transperitoneal nephrolithotripsy, stressing that this method is a therapeutic option in such cases.

Key words: kidney; pelvic region; lithiasis; percutaneous nephrostomy; lithotripsy; laparoscopy
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INTRODUCTION

The treatment of renal lithiasis has undergone a great advance with the advent of extracorporeal lithotripsy and endourology. The presence of anatomical anomalies, such as the pelvic kidney, imposes limitations to such therapeutic procedures (1).

We describe a case of lithiasis in a pelvic kidney that was successfully treated through videolaparoscopy-guided percutaneous transperitoneal nephrolithotripsy.

CASE REPORT

Male, 35 year old patient, with abdominal pain for several months and palpable abdominal mass. Abdominal ultrasonography evidenced left pelvic kidney with a 1.5-cm stone in renal pelvis. Excretory urography demonstrated a functional left pelvic kidney with a delay in excretion of 15 minutes (Figure-1). The patient underwent transperitoneal videolaparoscopy, with optics in the right paraumbilical region, after transcystoscopic insertion of an ureteral catheter. A 5-mm auxiliary trocar was placed

in the left paraumbilical region in order to displace the intestine until the kidney had been identified. Next, a videolaparoscopy-guided renal puncture and fluoroscopy with retrograde pyelography were performed, and then followed by the insertion of a guide wire, dilation of the tract until the insertion of an Amplatz sheath. A nephroscopy was performed, with identification of renal stone that was fragmented and removed with ultrasonic lithotripter, and the kidney was drained through nephrostomy with a Foley catheter (Figure-2). The surgical time was 90 minutes. The nephrostomy was removed in the fifth post-operative day with subsequent discharge from the hospital.

COMMENTS

The pelvic kidney is the most common form of renal ectopy. Its incidence is estimated from 1 in 2,200 to 1 in 3,000 in casuistry from necropsies. The association with lithiasis is small when there is no impairment of urinary drainage (2).

The renal lithiasis in pelvic kidney can be managed by means of open surgery, extracorporeal



Figure 1 – Excretory urography showing an ectopic (pelvic) left kidney with a stone in the renal pelvis.

lithotripsy or percutaneous nephrolithotripsy. Open surgery presents higher morbidity, is less esthetic due to the incision, and causes more pain post-operatively. Extracorporeal lithotripsy presents only 54% of success in such cases (2). Percutaneous surgery has also been proposed, but it is not conducted in a conventional way (3). It must be performed by anterior abdominal approach because the pelvic bone structures hinder the posterior access. Additionally, there is the need for renal puncture and dilation of the tract under direct viewing with the aid of videolaparoscopy. Thus, the puncture needle is oriented under direct viewing avoiding any damage to abdominal organs or major vessels (3). At the end, a nephrostomy is placed, which must be removed later, decreasing the potential of extravasation of urine to the peritoneal cavity (3).

In the case reported, the videolaparoscopy combined with fluoroscopy and retrograde pyelogra-

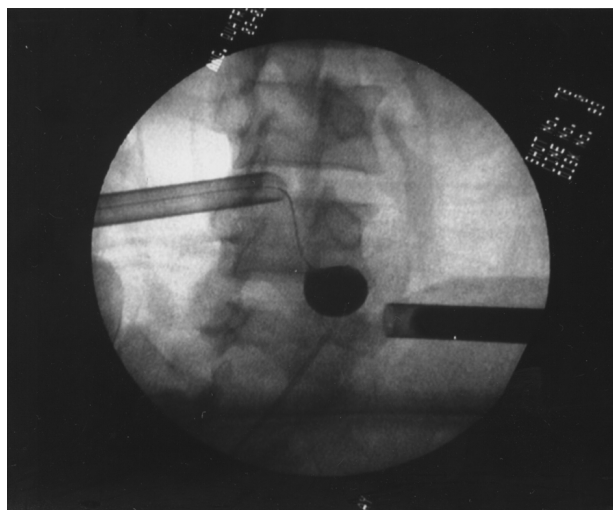


Figure 2 – Fluoroscopy showing percutaneous access through the Amplatz sheath, the trocar with the videolaparoscopy optics and the placement of a nephrostomy.

phy allowed a good percutaneous access to the renal stone, which was totally removed without surgical interferences and with no complications. This procedure can be proposed to patients who have stones in pelvic kidney by a team experienced in urologic laparoscopy and endourology.

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EDITORIAL COMMENT

The best treatment for stones in pelvic ectopic kidney has not been clearly established yet. Videolaparoscopy, in the case described above, enabled percutaneous surgery avoiding the risk of damage to the intestine that could be on the percutaneous tract.

The following question can be made: why not to continue with the laparoscopic method, performing a pyelolithotomy (laparoscopic), avoiding the association of procedures (percutaneous and laparoscopic)?

Those who have already performed a laparoscopic pyelolithotomy in a pelvic kidney know that it is usually a difficult and prolonged surgery for some reasons: 1) There is no standardization about the sites for placement of trocars and not always the optics and the working instruments are properly positioned; 2) Depending on the side and the ectopic

location of the kidney, the displacement and mobilization of the colon can be necessary; 3) Smaller working space compared to the upper portion of the abdomen; 4) The peripyelitis, frequent in such cases, can represent the greatest difficulty of all.

The renal pelvis is covered by a thick layer of inflamed fat tissue where the surgeon becomes uncertain about where to incise and is afraid to damage any vessel from the renal pedicle. The open surgery for the stone provides guidance on the incision of the fat tissue and the renal pelvis. The inflammatory reaction makes this perception difficult during laparoscopic surgery (palpation), as well as the exposition of the renal pelvis (inspection).

Therefore, even for those who are familiar with laparoscopic surgery, the association proposed in this work is an appealing alternative to open surgery.

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