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Introduction & Objectives: The use of extracorporeal shock wave lithotripsy (ESWL), percutaneous nephrolithotripsy (NLPC), ureteroscopy (URS) and flexible retrograde ureterorenoscopy (RIRS), has nearly eliminated the need for open (OS) or laparoscopic (LapS) surgery to remove stones. Sometimes there are patients with very complex stones. The Objective is to describe the indications of those patients who presented renal or ureteral stones were operated by OS or LapS. Describe the associated complications.

Materials & Methods: During the period between January 2011 and December 2018 we have made a total of 5433 procedures. Of which 4306 corresponds to LEOC, 549 URS, 415 RIRS and 146 NLPC, and finally 13 LapS and 4 OS. These surgeries account for 0.3% of all treatments. We define success: Ureteral and renal lithiasis: stone free - staghorn lithiasis: stone free or that only residual stones of less than 5 mm. If there are malformations in the urinary tract, repair it in the same surgery. The indications and type of surgery are summarized in Table 1.

Patient	Surgery	Indications	Previous Treatment
1	Laparoscopic diverticulectomy	Calyceal diverticulum	RIRS
2	LP	RL	LEOC
3	LP	RL	No
4	LP	RL	No
5	LP	RL	No
6	LP	Staghorn stone	No
7	LP	RL+Horseshoe kidney	No
8	LPPE	RL+UPJ O	NLPC
9	LPPE	RL+UPJ O	No
10	LPPE	RL(3)+UPJ O	RIRS
11	LPPE	RL(8)+UPJ O	RIRS
12	LPPE	RL(3)+UPJ O	No
13	LPPE	RL(4)+UPJ O	No
14	OU	Ureteral stricture+stone(4)	LEOC+URS
15	OU	Ureteral stricture	URS
16	OP	RL	LEOC
17	OP	Staghorn stone	LEOC

LP:Laparoscopic pyelolithotomy

LPPE:Laparoscopic Pyeloplasty+Extraction

OU:Open Ureterolithotomy

OP:Open pyelolithotomy

RL:Renal lithiasis

RL+UPJ O:Renal Lithiasis (n)+Ureteropelvic Junction Obstruction

Results: The success was reached in 14 patients. In 3 laparoscopic pyelolithomies failed. 2 of these patients do not have stones, but they have strictures of the urinary tract, for this reason they have CDJ always. In one case it was due to age and comorbidity and in the other case because the patient did not want more surgeries. The only intraoperative complication was an opening of the parietal pleura in an open pyelolithotomy that resolved with its suture. 3 patients (laparoscopic pyelolithectomy) presented Clavien III complications, which were: vomiting requiring upper digestive endoscopy. Another one was a migration from the CDJ that required a ureteroscopy. The third patient had a urinary fistula that required a change of CDJ. One patient had a Clavien IV complication (laparoscopic diverticulectomy) that was an urinary sepsis, resolving with antibiotic treatment. The overall complication rate was 29%.

Conclusions: Almost all patients with lithiasis have resolved with ESWL or endourological techniques. We should take into account OS or LapS when there are anatomical anomalies in the urinary tract, staghorn stones with extrarenal renal pelvis and in those cases in which ESWL or endourology have failed.