



**UROLOGICAL MANAGEMENT OF URETEROPELVIC JUNCTION OBSTRUCTION:
SINGLE CENTRE ANALYSIS**

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ABSTRACT

Introduction

Pelviureteric junction obstruction (PUJO) describes a functionally significant impairment of urinary transport from the renal pelvis to the ureter. Although most cases are congenital, the problem may not become clinically apparent until much later in life. Acquired conditions such as stone disease, postoperative or inflammatory stricture, or urothelial neoplasm may also manifest clinically with symptoms and signs of obstruction at the level of the UPJ. Open and laparoscopic approaches are available for treatment of PUJO, both have their own advantage and disadvantage

Aim of study: To compare the Technical difficulties, Operative duration, Post op complications, duration of hospital stay, and long term outcomes.

Material method

Retrospective and prospective data analysis done for patient admitted with PUJO to whom transperitoneal laparoscopic or ANDERSON HYNE Dismembered pyeloplasty done in dept. of urology Govt ROYPETTAH hospital in last 3 years, data is compared on basis of age group, post-operative complication, drain removal, duration of stay in hospital. Total no of cases were 18 for open pyeloplasty and laparoscopic pyeloplasty was 10. Inclusion criteria for open and lap pyeloplasty were decided. Assessment of success rate Based on pt. symptom score, follow up USG, and follow up DTPA /IVU renal function are assessed on basis of DPTA /DMSA scan and biochemical parameter. All patients were adult.

Results

Males are commonly affected than females. No redo plasty done for both group, success rate is equal in both group, the postoperative analgesic requirement was significantly less in Laparoscopic group compared to open group. The postoperative hospital stay in LP was mean 10.4 Days in open group compare to laparoscopic group 7.4 days which is significantly less than open group mean There was minimal or no scarring of the wound site in patients in the laparoscopic group compared to open. The success rate of laparoscopic pyeloplasty and open group is equal, the only disadvantage seems to be longer operative time and require high learning curve in laparoscopic series.

Conclusion

Laparoscopic pyeloplasty is a technically sound operation which uses well established principles. The advantages of open pyeloplasty are lesser operating times. Success rate are favourable in both group, the only disadvantage of Laparoscopic pyeloplasty is longer operative time and requires significant skill of intracorporeal knotting. Laparoscopic pyeloplasty procedure has a minimal level of morbidity, short hospital stay, better cosmetics compared to open approach. Laparoscopic pyeloplasty has emerged as the standard of care for all pyeloplasty

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INTRODUCTION

Pelviureteric junction obstruction (PUJO) describes a functionally significant impairment of urinary transport from the renal pelvis to the ureter. Although most cases are congenital, the problem may not become clinically apparent until much later in life. Acquired conditions such as stone disease, postoperative or inflammatory stricture, or urothelial

neoplasm may also manifest clinically with symptoms and signs of obstruction at the level of the UPJ. Similarly, extrinsic obstruction can occur at this level as well. Pelviureteric junction obstruction (PUJO) of the kidney can cause pain, recurrent urinary tract infections, hydronephrosis and loss of renal unit function. Surgical intervention is often required and numerous treatment strategies have been employed.¹ Open approaches available for treatment of pyeloplast are Standard Pyeloplasty And Ureterocalycostomy, Auto transplantation, Transposition of renal vein (right) (Nephrectomy). Minimally invasive surgery are Endoscopic Ante grade endopyelotomy Retrograde endopyelotomy, Laparoscopic ± robotically

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assisted (Intraperitoneal or Extra peritoneal).² Laparoscopic pyeloplasty combines the advantages of minimally invasive surgery (reduced morbidity) and of open surgery (possibility to correct anatomic factors such as extrinsic obstruction, crossing vessels, and renal pelvis redundancy), and for many has become the new gold standard. Both intraperitoneal and extra peritoneal approaches have been successful in achieving this goal.³

Aims and objective

To compare the Technical difficulties, Operative duration, Post op complications, duration of hospital stay, and long term outcomes.

MATERIAL METHOD

Retrospective and prospective data analysis done for patient admitted with PUJO to whom transperitoneal laparoscopic or ANDERSON HYNE Dismembered pyeloplasty done in dept. of urology Govt ROYPETTAH hospital in last 3 years, data is compared on basis of age group, post-operative complication, drain removal, duration of stay in hospital. Total no of cases were 18 for open pyeloplasty and laparoscopic pyeloplasty was 10. Open pyeloplasty group was named as A and laparoscopic group as B, inclusion criteria for Open Pyeloplasty: 1. Small nondilated renal pelvis 2. High insertion of Ureter 3, bifid renal pelvis 4. Crossing vessels 5. Secondary calculi 6. High BMI of patient 7. Redo pyeloplasty 8. Salvage pyeloplasty inclusion criteria for Lap Pyeloplasty: 1. Large dilated Extra renal Pelvis 2. low BMI of patient 3. No previous abdominal surgery 4. No secondary renal calculi. Assessment of success rate Based on pt. symptom score, follow up USG, and follow up DTPA /IVU renal function are assessed on basis of DPTA /DMSA scan and biochemical parameter. All patients were adult.

Open pyeloplasty

Anterior Subcostal Approach 5-6 cm incision, planned on basis of preop IVU. Expose PUJ, we do not skeletonise ureter, minimal dissection of peripelvic adventitia, repositioning of crossing vessels in vessel loops. We took Stay sutures to minimise tissue handling and enable good anastomosis without tension .anastomosis closed over internal stent and flank Drain placement.

We remove urethral Foley on pod 4 if there is no leak and DT to be removed on pod 6 if no leak. DJ stent removal after 4 weeks

Laparoscopic pyeloplasty

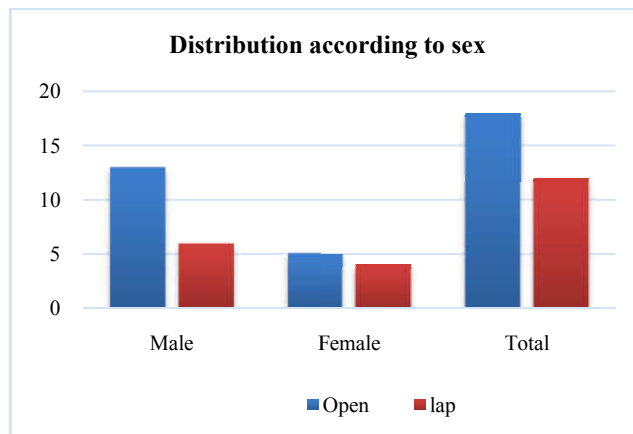
Preplacement of DJ stent cystoscopically prior to Lap pyeloplasty. Standard port placements, approached retro colic through para colic reflection. We use dismembered technique, preplaced stent helps us to align the ureter and pelvis precisely for anastomosis .placement of stay sutures which were held by assistants with additional ports enabled faster repair. We used Continuous 4/0 or 5/0 prolene sutures for pyeloplasty. We never had any case where suture was placed through the DJ stent

Results

Parameter	Open	Lap
Case	18	10
Mean Age	35.6 years	43.5 years
Operative time	80-100 min (avg 93 min)	150-180 min (avg 168 min)
DURATION OF ANALGESIC	5.4 DAYS	3.3 DAYS
Fever	5	2
Chest complication	2	2
Drain removed POD	7.4	4.3
Stay IN DAYS	10.5	7.3
Result	Favourable	favourable

Distribution according to sex

	Open	lap
Male	13 (72 %)	6 (60 %)
Female	5 (28 %)	4 (40 %)
Total	18	12

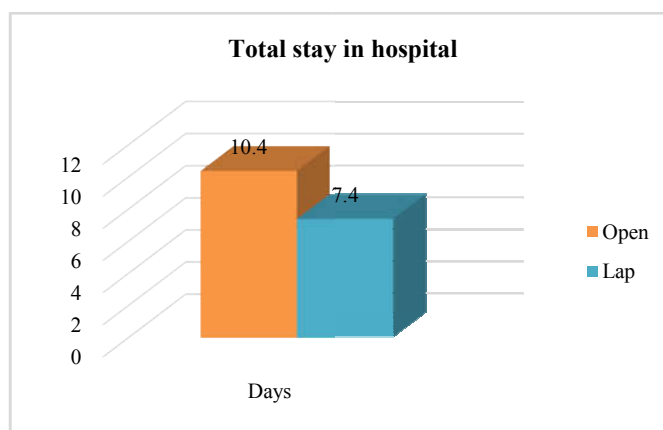


Distribution according to total operative time taken: Mean Total operative time with stent placement in LP group was 190.4 minutes compared to 150.6 minutes in open group. Total operative time did improve with experience for LP surgeon

Procedure	Time
Open	150.6 min
Lap	190.4 min

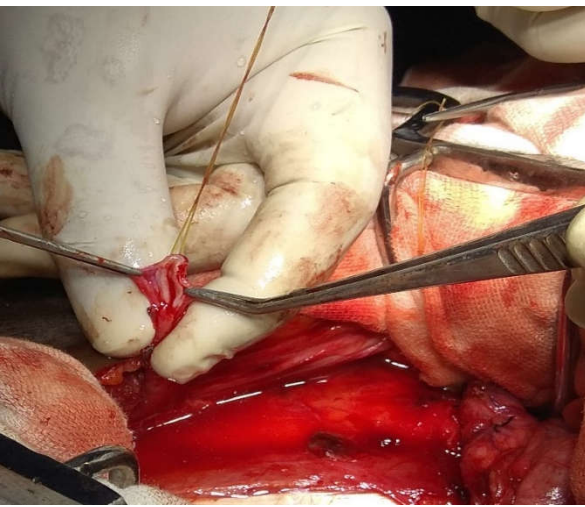
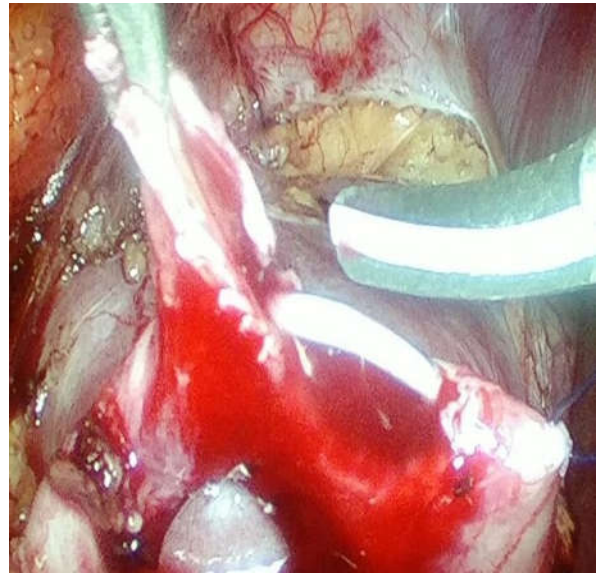
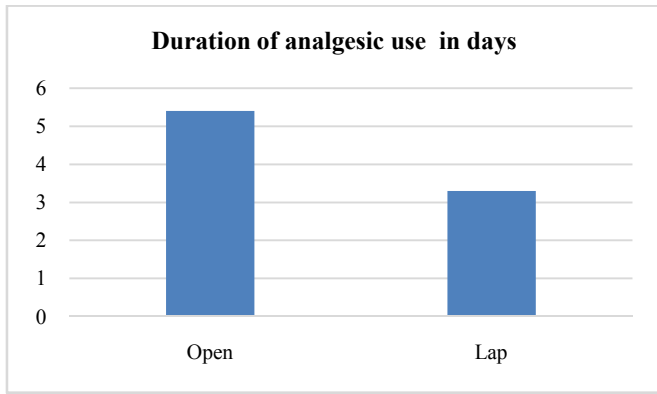
Total stay in hospital

Procedure	Days
Open	10.4
Lap	7.4

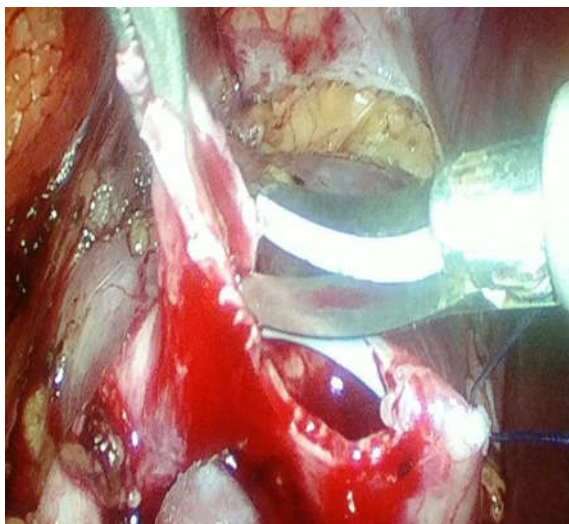
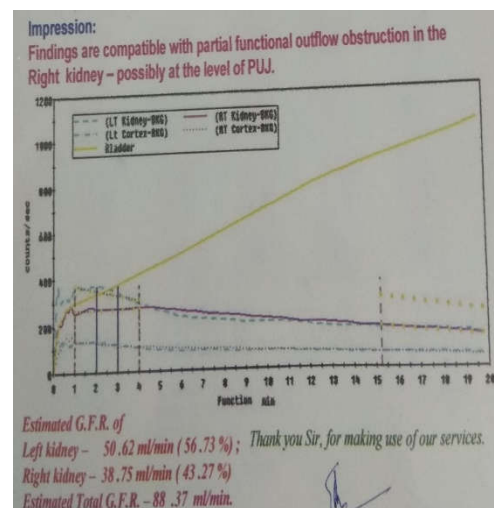


Duration of analgesic use

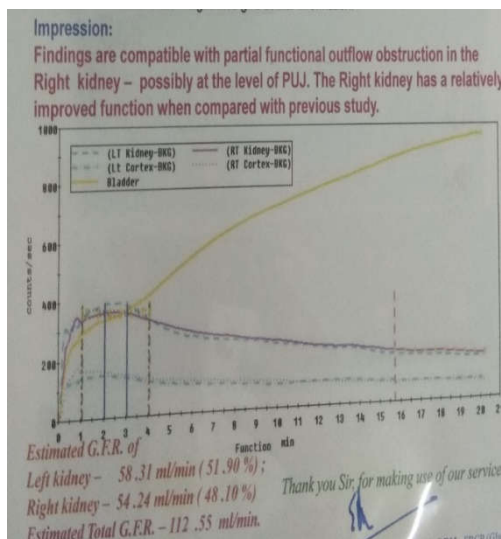
Procedure	Duration in days
Open	5.4
Lap	3.3



Preop DTPA SCAN



Post Op Dtpa Scan After 1 Month Shows Significant Improvement In Renal Function



Post OP after 1 month

DISCUSSION /RESULTS

Males are commonly affected than females, which correlates with the literature. There is no redo pyeloplasty done in both groups. Success rate is equal, the postoperative analgesic requirement was significantly less in the Laparoscopic group compared to the open group, which is favourable. The postoperative hospital stay in LP was mean 10.4 Days in the open group compared to the Laparoscopic group 7.4 days, which is significantly less than the open group mean, which is as per literature. There was minimal or no scarring of the wound site in patients in the Laparoscopic group compared to the open group. The success rate of Laparoscopic pyeloplasty and the open group is equal, the only disadvantage seems to be longer operative time and requires a high learning curve in the Laparoscopic series, and however, long operative time may be reduced by skill of intracorporeal knotting and practicing.

Conclusion

- Laparoscopic pyeloplasty is a technically sound operation which uses well established principles.
- The advantages of open pyeloplasty are lesser operating times.
- Success rates are favourable in both groups.
- The only disadvantage of Laparoscopic pyeloplasty is longer operative time and requires significant skill of intracorporeal knotting.
- Laparoscopic pyeloplasty procedure has a minimal level of morbidity, short hospital stay, better cosmetics compared to the open approach.
- Laparoscopic pyeloplasty has emerged as the standard of care for all pyeloplasty.

Abbreviation; PUJO – PELVIURETERIC JUNCTION OBSTRUCTION,

LP – LAPAROSCOPIC PYELOPLASTY

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