

## CASE REPORTS

# STONE FORMATION ON SUTURE MATERIAL FOLLOWING LAPAROSCOPIC PYELOPLASTY CAUSING RECURRENT PUJ OBSTRUCTION: A CASE REPORT

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### Abstract

Male patient 46 years of age presented with history of Laparoscopic A-H pyeloplasty with D-J stenting for left side hydronephrosis due to PUJ obstruction. After stent removed he experienced intermittent flank pain, discomfort with fullness sensation. On examination there was mild left renal angle tenderness. Urinalysis showed RBC. USG revealed moderate left hydronephrosis. CT urogram showed left side gross HDN with 5 mm PUJ stone. Tc-99m DTPA renal scan revealed partial obstruction. After counseled and exploration founded an impacted PUJ stone. During removal of PUJ stone, identified a suture material embedded by the stone. After removed the stone, PUJ still narrowed. Then A-H pyeloplasty done with placed a D-J stent in situ. The patient had a good post-operative recovery.

**Key word:** PUJ stone, suture material, recurrent PUJO

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### Introduction:

Urolithiasis is an recognized unusual phenomenon following surgery on the urinary tract. Non absorbable suture material acts as a nidus for stone formation, is a well known complication. A-H pyeloplasty always done with absorbable suture material. We present a case where laparoscopic pyeloplasty was done by nonabsorbable silk by another senior urologist 2 years back.

### Case report:

A 46 years old male patient presented with history of Laparoscopic A-H pyeloplasty with D-J stenting for left side hydronephrosis due to UPJ obstruction. He experienced intermittent left flank pain with fullness sensation after 9 months of stent removed. The stent was removed after 8 weeks of pyeloplasty. On examination mild left renal angle tenderness. Urinalysis showed RBC. Renal function and X-Ray KUB revealed normal. Renal sonography revealed moderate left hydronephrosis. CT urogram showed left side gross HDN with 5mm PUJ stone. DTPA renal scan revealed partial obstruction. S. calcium and Uric acid was normal. Patient was counseled and planed for exploration .

After exploration found an impacted PUJ stone. During removal of stone, identified one suture material protruded from the PUJ and was embedded by the stone. Then cut and removed the suture with impacted stone. A-H pyeloplasty done with D-J stent due to narrow PUJ. The patient had a good post operative recovery. 10 weeks after redopyeloplasty stent was removed. The patient was followed for 2 years with history, clinical examination and investigations including Urine analysis, USG and DTPA renogram. During followup period patient had no symptom, USG showed minimal dilated left pelvicaeceal system, DTPA renogram showed complete washout. Yet patient advised for followup upto 5 years.



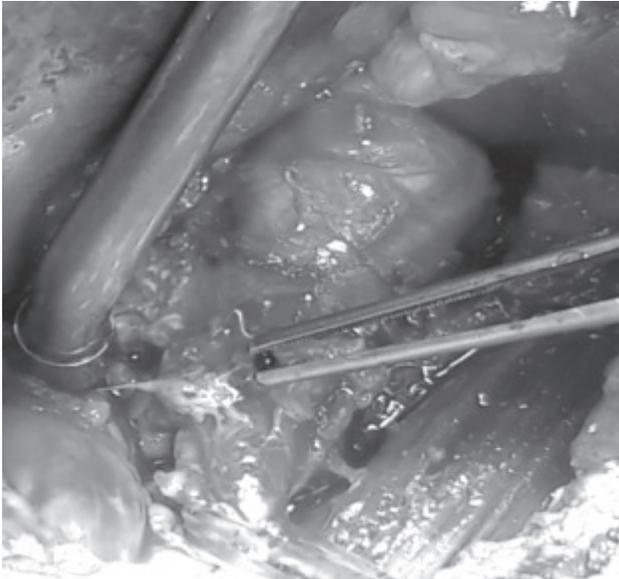
**Fig.-1:** Stone in situ at PUJ

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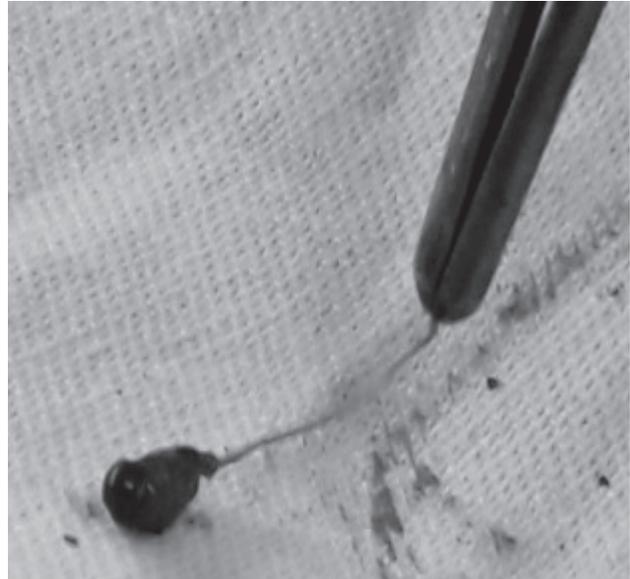
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**Fig.-2:** Removing PUJ stone

#### **Discussion:**

The most important complication which confirmed and evaluated in majority of research studies is suture induced stone formation<sup>1</sup>. D'silva and colleges think that suture acts as a nidus for stone formation regardless its physical and chemical structure and increases chance of UTI and infective stone formation. This susceptibility to stone formation depends to time of exposure of sutures with urine. So it can be said that nonabsorbable sutures have the greatest chance to be nidus<sup>2</sup>. Sutures are exposed to urine permanently so that urinary proteins and bacteria can affect function of suture and produce layering, stone formation, inflammatory reactions, scar formation and stenosis<sup>3</sup>. An optimal suture should have these characteristics in urinary system: conserve its resistance until wound healing, Produce minimal tissue reaction and be absorbable and not be a nidus for stone formation<sup>4</sup>. In this case during pyeloplasty nonabsorbable suture material used and that lead to stone formation. After exploration stone removed with suture material and redo pyeloplasty was done with absorbable suture Vicryl 4/0.



**Fig.-3:** Stone impacted with suture material

#### **Conclusion:**

This case emphasizes the chance for stone formation when non-absorbable sutures are used for pyeloplasty. Patient of urolithiasis with prior surgical procedure should keep in mind to find out any possible non-absorbable material remains with metabolic evaluation.

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