INTRODUCTION

Hydronephrosis is the aseptic dilatation of the pelvi-calyceal system due to intermittent or partial obstruction to the outflow of urine. The normal pressure in the renal pelvis is close to zero. When this pressure increases because of obstruction or reflux, the pelvis and calyces gradually dilate. The degree of hydronephrosis depends upon the duration, degree and site of the obstruction.\(^1\)

The commonest cause of hydronephrosis is the calculus disease. Other frequent causes are pelvi-ureteric junction obstruction, stricture due to calculi/inflammatory diseases, extrinsic ureteral compression, vesico-ureteral reflux, TCC urinary bladder/ureter, ureterocele, pregnancy and bladder outflow obstruction.

An inverted papilloma is a type of tumour in which surface epithelial cells grow downward into the underlying supportive tissue. It may occur in the nose and/or sinuses or in the urinary tract. When it occurs in the latter, it may cause blood in the urine. Inverted papilloma of the urinary tract is a rare benign neoplasm.\(^2\)

It is an endophytic urothelial tumour of moderate significance due to its similarity to the inverted urothelial carcinoma, which has a more aggressive behaviour and a graver prognosis. The majority of urothelial inverted papillomas occur in the urinary bladder (70%), most often in the trigone, followed by the bladder neck, dome, posterior wall and the lateral wall of the bladder. The rest of the 30% are seen in the ureter, renal pelvis and urethra in the descending order of frequency.\(^3\)

In this case report we present a rare case of inverted papilloma of ureter which presented as hydronephrosis.

CASE REPORT

A 35 years old male presented to the Urology OPD with 4 months history of pain in the left lumbar region. The pain was dull, intermittent and localized with no radiation. This was accompanied by occasional burning micturition. There was no history of fever, haematuria, pyuria, cough or any bowel complaint. He had a past history of left lower ureterolithotomy. This procedure was performed for a left lower ureteric calculus, about a year ago. He belonged to a low socioeconomic group and had regular analgesics for the symptoms in the past few months.

On examination, he was a young male of average build with stable vital signs. He was neither pale nor jaundiced. Abdominal examination revealed an old left lower abdominal scar with deep tenderness in the left lumbar region. The rest of the abdominal and systemic examination was normal.

On investigations, complete blood count, serum urea/creatinine and serum electrolytes were normal. Urinalysis showed 8-10 pus cells per high power field. The ultrasonography of abdomen was suggestive of left hydronephroureter. CT Scan showed left hydronephroureter with narrowing at the lower end of left ureter. Ureterorenoscopy (URS) confirmed polypoidal lesions in the left lower ureter, completely obliterating the lumen and involving the whole circumferential wall of the lower ureter. The biopsy of the lesion revealed an inflammatory polyp. Accordingly open surgical intervention was planned. Excision of the lower third of left ureter with ureteric reimplantation was done with a Boari flap. The histopathology report of the lower third of ureter confirmed inverted papilloma of ureter.

The patient made a smooth postoperative recovery.

**ABSTRACT**

A case of hydronephrosis with a rare underlying cause in a 35 years old male is described. He reported with pain in the left lumbar region with a past history of left ureterolithotomy. The ultrasound and IVU studies were suggestive of left hydronephroureter. CT Scan showed left hydronephroureter with narrowing at the lower end of left ureter. Ureterorenoscopy (URS) confirmed polypoidal lesions in the left lower ureter, completely obliterating the lumen and involving the whole circumferential wall of the lower ureter. The biopsy of the lesion revealed an inflammatory polyp. Accordingly open surgical intervention was planned. Excision of the lower third of left ureter with ureteric reimplantation was done with a Boari flap. The histopathology report of the lower third of ureter confirmed inverted papilloma of ureter.

The patient made a smooth postoperative recovery.

**Key words:** Hydronephrosis, Inflammatory polyp, Inverted papilloma, Ureter.
Considering the diagnosis, ureterorenoscopy (URS) was performed under regional anaesthesia. The ureterovesical junction was found negotiable, multiple small to large polypoidal growths were seen in the lower third of ureter and completely obliterating the lumen. The lesions were circumferentially involving the lower third of ureter. Biopsy was taken and found to be consistent with inflammatory polyp-ureter on histopathology. Considering the extent of the disease and the effects on the upper urinary tract, open surgical intervention was contemplated. The approach was made through the previous scar. Lot of dense adhesions were encountered around the lower third of left ureter with dilated proximal part. Thus, excision of the lower third of ureter upto the urinary bladder was performed and ureteric reimplantation with Boari flap over a double J (DJ) stent was conducted. The ureteral tissue was preserved and sent for histopathology. This was confirmed as inverted papilloma of ureter. Postoperatively, the patient made a smooth recovery. The DJ stent was removed after 4 weeks and the patient was found asymptomatic at 6 months follow-up.

DISCUSSION

Potts and Hirst coined the term inverted papilloma in 1963. In 1927, Paschkis had described this lesion in the urinary bladder calling it a polypoid adenoma. The term Brunnnian adenoma has also been used as the lesions show a similarity to the normal Brunn’s nests. The key histological feature that differentiates it from the malignant counterpart is the cytological atypia. Although morphological similarities do occur, but the inverted papilloma has a favourable prognosis, with little, if any, malignant potential. Inverted papilloma accounts for less than 1% of urothelial neoplasms. They occur predominantly in men, with male to female ratio of 4-7:1. It is typically seen in 5th and 6th decade of life, although the incidence can range from early adolescence to the mid 90’s.

Inverted papilloma is a pedunculated polypoid lesion or a sessile lesion with a smooth surface covered with grossly normal appearing urothelial epithelium. It ranges in size from few millimeters to 3-4 cm in the greatest dimension. The overall histological pattern of inverted papilloma is that of cords and trabeculae of urothelial cells that grow into the underlying lamina propria but not the muscularis propria, producing a localized non-invasive endophytic mass, covered by histologically and cytologically normal urothelium. Classically, the inverted papilloma rarely expresses the immunohistological markers of the more aggressive urothelial carcinoma.

The usual clinical features of urothelial inverted papilloma are bladder outlet obstruction, haematuria, dysuria and irritative voiding. Less common symptoms are suprapubic pain and pyuria. The presentation of hydronephrosis, as documented in this case, may be seen in the inverted papilloma of the ureter, but is quite rare. Inverted papilloma may be associated with carcinomas of the urinary tract and rarely show malignant transformation. Inverted papillomas of the prostatic urethra are benign lesions that are commonly detected incidentally and are not associated with a history of urothelial malignancy. Although urothelial carcinoma elsewhere in the genitourinary tract may occur simultaneously, malignant transformation or recurrence as a malignant lesion has not been identified in inverted papilloma of the prostatic urethra.
The tumours are considered benign and local excision has been advocated by many but long-term follow-up is lacking. Because of its curability by conservative surgery, it should be considered in the differential diagnosis of a ureteral filling defect and ureteral obstruction. The standard treatment of inverted papilloma of the lower urinary tract is transurethral resection. In upper urinary tract lesions, local excision appears to be an ideal treatment but the difficulty with pre-operative diagnosis and the reported co-existence of malignancy demands careful patient selection and close long term follow-up. The biological potential of recurrence, multi-centricity and malignancy are the areas of serious concern. Inverted papillary tumours of the ureter have distinct clinicopathological features, but most are discovered retrospectively after nephroureterectomy. From the standpoint of clinicopathological features, inverted papillary tumour of the ureter should be distinguished from its exophytic counterpart with respect to the treatment. If the tumour can be diagnosed macro- and microscopically during surgery as inverted papilloma or malignant inverted papillary tumour without invasion, partial ureterectomy including the lesion may be recommended.9

However, considering the upper urinary tract tumours in general, the treatment includes the endoscopic intervention as well as the open procedures. The ureteroscopic treatment has become possible only with the development of adequate endoscopies and instruments for tissue sampling and destruction. Ureteroscopic tumour treatment includes mechanical removal, fulguration and laser coagulation and resection but there are several limitations to the techniques of this treatment. As success has been observed with endoscopic treatment, the indications have expanded to include potentially more patients including the benign as well as the malignant ones. However large, extensive and high grade neoplasms may not be amenable to this modality. In this case after initial evaluation and a suspected lesion of an inflammatory polyp, distal ureterectomy and ureteroneocystostomy was performed as the lesion was extensive, completely obliterating the lumen and involving the wall circumferentially.

REFERENCES