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Research Article

URETERIC ORIFICE INJURY - A LITTLE EMPHASISED COMPLICATION FOLLOWING TRANSURETHRAL RESECTION OF PROSTATE (TURP) - A CASE REPORT

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A B S T R A C T

Ureteric orifice injury following transurethral resection of prostate (TURP), though rare now-a-days, can occur during resection of a large prostate gland with intravesical enlargement that hinders the visualisation of ureteric orifices. We report a case of 75 year old male who presented with right distal ureteric stricture following TURP done elsewhere 5 months back, initially managed by emergency right percutaneous nephrostomy, later followed by ureteric reimplantation. The aim of this case report is to emphasise the importance of visualisation of ureteric orifice prior to, during and after completion of TURP and understanding of thermal mechanics to prevent such injury and further morbidity.

INTRODUCTION

TURP is considered as the gold standard in Benign prostatic hyperplasia (BPH) treatment. Transurethral prostate and bladder surgery is the leading cause of iatrogenic injury to ureter and its orifices. Such injuries can result from several basic mistakes occuring simultaneously such as poor haemostasis, poor knowledge of local tissue structure and inadequate understanding of thermal mechanics.[1] TURP is an endoscopic approach which removes the inner portion of prostate (transition zone) surrounding the urethra. An electrified wire loop is used to remove the portion of prostate from bladder neck to verumontanum to a depth of surgical capsule. The current is carried from cutting loop through the tissue to the return electrode in the grounding pad [2]. A proper understanding of thermal mechanisms, strict adherence to basic surgical skills and visualisation of ureteric orifices prior to, during and after completion of TURP helps to avoid this rare complication in day to day urological practice.

Case History

A seventy five year old male presented with right sided abdominal pain and vomiting for two weeks. His records showed a past history of TURP five months back. Pre-op ultrasound reported 103cc prostate and normal kidneys. Post-op histopathology report revealed Benign Prostatic Hyperplasia.

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Contrast CT KUB (Fig.1) showed right moderate hydroureteronephrosis with a perinephric collection of about 500cc. Blood investigations revealed Total count – 16,500 cells/cu.mm, Blood Urea Nitrogen – 20 mg/dl, Serum Creatinine – 1.0 mg/dl, Sodium – 128 mEq/L, Potassium– 3.5 mEq/L, Chloride- 92 mEq/L, Bicarbonate- 22 mEq/L and Random Blood Sugar-110 mg/dl. Patient was catheterised, resuscitated and started on antibiotics. Emergency ultrasound guided aspiration of right perinephric collection done and right perinephric drain placed. Right PerCutaneous Nephrostomy (PCN) tube inserted for decompression of upper tract. Patient improved well. The right PCN was draining 600-700ml of clear urine/day. Percutaneous nephrostrogram (Fig 2) showed contrast opacification upto proximal part of right distal ureter. Later after a week, cystoscopy with ureteric orifice site resection done could not identify right ureteric orifice. Hence, an open ureteric reimplantation was done (Fig 3).

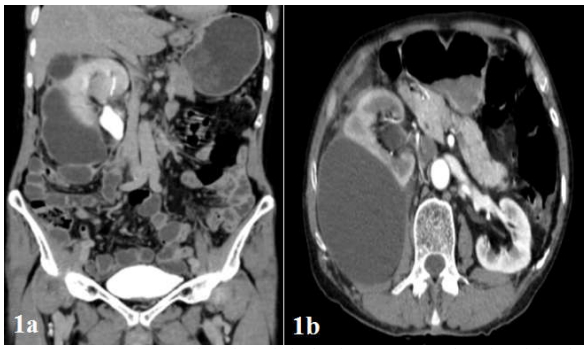

Fig 1 Contrast CT KUB showing right hydroureteronephrosis with a large perinephric collection

Fig 2 Right percutaneous nephrostogram showing contrast opacification upto midureter

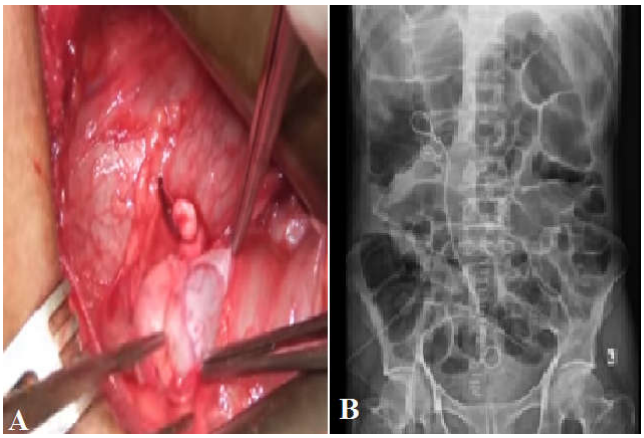

Fig 3 (A) Intra operative transected distal ureter and bladder.
(B) Postoperative X-ray KUB with DJ stent insitu.

DISCUSSION

Ureteric orifice injury resulting from prior TURP was first reported by **O'Conor** as early as **1951**. The coagulating current is more feared than the cutting current and its heat induced damage is directly related to the intensity of the current and the length of time it is applied**.** A cutting current with a sharp atraumatic action over the ureteric orifice will heal without sequela. However a deeper injury may lead to either a stricture causing ureteral obstruction or may result in a patulous ureteric orifice causing reflux. Now a days with the advent of modern telescope and advanced TURP equipments and with a high definition view of the working area (prostatic fossa), such thermal injuries to ureteric orifice is extremely rare **.**The following steps are to be adhered to avoid injury to ureteric orifice.

1. Both orifices should be visualised before the first cut and their distance from any prostatic tissue be firmly fixed in mind.
2. The current should be set just high enough to cut and the excursion of the loop should be rapid.
3. The tendency further to cut down the ridge at the bladder neck should be curbed until hemostasis and visualisation are adequate.
4. At the end of the procedure, both orifices should again be visualised and their relationship to the line of resection noted [3].

A universally agreed management strategy for ureteric orifice injury during TURP is still nonexistent[4]. Intraoperatively, when a ureteric orifice injury is recognised, can be left as such if the injury is superficial due to cutting current and can be followed up with Ultrasound. If the injury is deep and if produced by a coagulation current, patient may require a Double 'J'(DJ) stenting. Some surgeons feel that intentional orifice site resection of bladder cancer will heal without ureteric complication and one can forgo stenting [5]. When presented as a late complication, initial management of distal ureteric injury following TURP involves decompression of urinary obstruction by PCN followed by radiological imaging to identify the site and extent of stricture. Later a definitive procedure like cystoscopy with orifice site resection and retrograde DJ stenting or an antegrade DJ stenting via PCN can be done. If above measures fail, open procedures like ureteric reimplantation should be considered.

CONCLUSION

In summary, the importance of thermal injury to the ureteric orifice has been stressed in this case report. Though rare with experienced hands and with recent advanced scopes, this possible complication of TURP should be anticipated especially during resection of large prostate hindering the orifices during resection and such complications must be treated before the patient loses a kidney or is desperately ill.

Conflict of Interest- NIL

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