



DOUBLE J STENTING IN A DELAYED URETER INJURY DUE TO THERMAL NECROSIS FOLLOWING LAPAROSCOPIC-ASSISTED VAGINAL HYSTERECTOMY

Dr Rizwanuddin M. Khwaja*

PG Resident (General Surgery), MBBS. *Corresponding Author

Dr Ajay Naik

MBBS, MS, MCH Paediatric Surgery.

Dr Parag Gulhane

MBBS, MS, DNB Urosurgery.

ABSTRACT

The presenting symptom to a gynecologist for postoperative vaginal discharge, which may or may not be related to the gynecologic diagnosis. A 40-year-old woman with abnormal uterine bleeding came to ObGyn Opd. The diagnosis was simple endometrial hyperplasia for which laparoscopic assisted vaginal hysterectomy with bilateral salphingo oophorectomy was done. Post-Operative Day 18 patient developed vaginal discharge suggestive of urinary leakage. The postoperative delayed ureter injury is an unusual association with laparoscopic assisted vaginal hysterectomy. The management was ureter stent insertion. This case report could be guidance to surgeons about the postoperative management of ureter injury. Gynecologists should consider the presenting symptom of vaginal discharge in formulating their differential diagnosis.

KEYWORDS : Ureter injury, thermal necrosis, laparoscopic-assisted vaginal hysterectomy.

INTRODUCTION

Injury To The Ureter

Rupture of the ureter

Injury to one or both ureters during pelvic surgery This occurs most often during vaginal or abdominal hysterectomy when the ureter is mistakenly divided, ligated, crushed, or excised. Pre-emptive ureteric catheterization makes it easier to identify the ureters. If injury is recognized at the time of operation ureterovesical continuity should be restored by one of the methods described below unless the patient's condition is poor. Deliberate ligation of the proximal ureter and temporary percutaneous nephrostomy is then the best course until the patient is well enough for a repair.

Injury not recognized at the time of operation

Unilateral Injuries

There Are Three Possible Outcomes:

- 1 No symptoms. Ligation of a ureter may lead to silent atrophy of the kidney. The injury may be unsuspected until the patient undergoes urological imaging.
- 2 Loin pain and fever, possibly with pyonephrosis, occur with infection of the obstructed system. Loss of function will be permanent unless obstruction is relieved by promptly inserting a percutaneous nephrostomy.
- 3 A urinary fistula develops through the abdominal or vaginal wound. The IVU or contrast-enhanced CT shows extravasation with or without obstruction of one or both ureters. Nephrostomies may be inserted, and repair postponed until oedema and inflammation have subsided. Early repair is safe if the patient is fit for surgery.

BILATERAL INJURY Ligation of both ureters leads to anuria. Ureteric catheters will not pass and urgent nephrostomy or immediate surgery is essential.

Repair of the injured ureter

An open repair may be avoidable if a stent will pass the obstruction. If the cut ends of the ureter can be apposed without tension, they should be joined by a spatulated anastomosis over a double pigtail catheter. If the division is low, the bladder may be hitched and the ureter can be re-implanted. Extra length may be obtained by mobilising the kidney. In the Boari operation, a flap of bladder wall is fashioned into a tube to replace the lower ureter. The disadvantage of implanting the ureter end-to-side into the contralateral ureter (a transureteroureterostomy) is that it

risks converting a unilateral injury into a bilateral one. Nephrectomy may be best when the patient's outlook is poor and the other kidney is normal. When conservation of all renal tissue is vital, replacement of the damaged ureter by a segment of ileum is necessary.

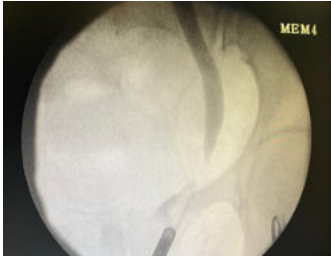
Case Study

In a 40-year-old woman, Para 2 known case of diabetes mellitus on treatment for 8 years, who had abnormal uterine bleeding and anemia for which the patient underwent laparoscopic-assisted vaginal hysterectomy (LAVH) & bilateral salphingo oophorectomy. The specimens were removed, and the vaginal wall was closed trans-vaginal suturing. On postoperative day 18, the patient was readmitted with persistent progressive left flank pain, rated on the visual analog scale (VAS) at 3 out of 10. She experienced nausea and decreased urination, fever & dysuria. Physical examination indicated left flank pain and urinalysis revealed pyuria and bacteriuria with urinary tract infection (UTI). After admission, empiric antibiotics were injected. Serum creatinine was 0.86mg/dL, while other serums were within standard limits.

A CECT A+P revealed a left mild hydronephrosis & hydroureter with non-uniformly thickened and enhancing walls of left ureter. Well defined irregular fluid collection in the pelvis at the post-operative site with the left lower ureter reaching this collection & non visualization of the left vesicoureteral junction likely suggestive of lower ureteric injury with inferior extension of this contrast opacified collection into vaginal canal through dehiscence of the vaginal vault.



CT Urography -Left HN & HU



Retrograde Pyelography showing proximal dilated ureter.

The ureteroscopy showed an inflamed left ureteric opening. Retrograde pyelogram was suggestive of contrast leak. A 6 Fr * 26 cm double J (DJ) stent was placed smoothly in the left ureter and passed the injury site, with the middle and upper ureter showing dilation. The patient's vaginal urine leakage decreased, and the postoperative course was uneventful. The patient was discharged and attended follow-up outpatient clinic appointments for the next 2 months. After 6 weeks, the patient made an appointment to remove the DJ stent and is currently asymptomatic with a good quality of life.

DISCUSSION

Rare ureteral complications with laparoscopic gynecology are <1% to 2%. Thermal injury might cause ureteral injury and result in delayed tissue necrosis and partial obstruction of the ureteral wall. (1–5). Thermal necrosis is delayed ureteral injury and the immediate intraoperative cystoscopy cannot detect the ureteric injury; the patient presented 10–14 days postoperatively. (5) This patient had symptoms on postoperative day 18, and this occurrence could be guidance to surgeons about the duration of postoperative detection for delayed ureteral injury.

CONCLUSIONS

In every intervention involving the pelvic area, all surgeons must be aware of the possibility of iatrogenic urologic injuries to prevent, recognize and repair them as early as possible to avoid further complications and loss of renal function.

Minimizing the risk of intraoperative injury requires maintaining visual identification of the ureters and bladder in relation to the operative target.

REFERENCES:

1. Oh BR, Kwon DD, Park KS, et al. Late presentation of ureteral injury after laparoscopic surgery. *Obstet Gynecol* 2000; 95: 337–339.
2. Grainger DA, Soderstrom RM, Schiff SF, et al. Ureteral injuries at laparoscopy: insights into diagnosis, management, and prevention. *Obstet Gynecol* 1990; 75: 839–843.
3. Lui CH, Wang PH, Lui WM, et al. Ureteral injury after laparoscopic surgery. *J Am Assoc Gynecol Laparosc* 1997; 4: 503–506.
4. Munro MG and Parker WH. A classification system for laparoscopic hysterectomy. *Obstet Gynecol* 1993; 82: 624–629.
5. Manoucheri E, Cohen SL, Sandberg EM, et al. Ureteral injury in laparoscopic gynecologic surgery. *Rev Obstet Gynecol* 2012; 5(2): 106–111.