Endoscopic Management of Obstetrical Uretero-Uterine Fistula. Case Report and Review of Literature

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Keywords
Endoscopic; Fistula; Uretero-Uterine

Introduction
Uretero-uterine fistulae are rare, but serious conditions. Most of them are iatrogenic injuries occurring during Caesarean Section, when one ureter is inadvertently sutured to uterus. Other causes are uterine malignant disease, endometriosis, and elective abortion [1]. Diagnosis is established by a combination of urography, cystoscopy, double dye test, computerized tomography scan (CT) and a hysterogram. The management options include a trial of conservative therapy (spontaneous healing), endurologic (stented repair), and open surgical ureteroneocystostomy or uretero-ureterostomy.

Case Report
A twenty-five-year old female, primiparous, underwent Caesarean Section for failure of progress during the second stage of labour. On the second postoperative day, and after removal of the Foley catheter, she noticed passage of urine through the vagina during normal voiding. The quantity of discharged urine has gradually increased during the following next days, which mandated her to use pads.

The patient was readmitted 2 weeks later to the gynecology department and micturating cystogram (MCUG) was done, which was reported as normal (Figure: 1, 2)

I.V.U was done and showed dilatation of the left ureter and left uretero-uterine fistula (Figure: 3, 4, 5, 6, 7, 8).

Figure 1: Figure 2: Figure 3:
At that time, the patient was discharged and referred to urology outpatient clinic. The patient was admitted to our department and decision has been made to do cystoscopy in order to confirm the diagnosis and to stent the left ureter. At cystoscopy there was severe edema at the left ureteric orifice and during the trial to find the orifice, two bluish mostly Vicryl stitches were seen (Figure: 9, 10, 11)
Which were divided endoscopically, after which an immediate release of the tightened tissue at that level has occurred. As repeated trials to identify, the left ureteric orifice had failed even after releasing of the sutures. Because of severe edema, we aborted the procedure without insertion a ureteric stent. On the next day, there was a dramatic decrease in the quantity of leaked urine via the vagina, which stopped completely after a couple of days.

Two months later, a follow-up I.V.U was performed and showed a normal urogram (Figure: 12, 13)
Figure 17:

Discussion

Any ureteric injury can threaten the function of the ipsilateral kidney. Ureteric trauma is relatively rare, and account for only 1% of all urinary tract trauma, probably because of its protected location, small size and mobility [2].

Ureteric injuries are most commonly of iatrogenic origin, Dobrowolsk, et al., 2002 [3]. In Poland found among 452 ureteral injuries: 75% were iatrogenic, 18% were caused by blunt trauma, and 7% were caused by penetrating trauma. Of these iatrogenic injuries: 73% were gynecological in origin, 14% were caused by general surgical trauma, and 14% were caused by urological procedures.

They also estimated the frequency of ureteral injury during gynecological pelvic surgical procedures to be 1.6 per 1000 [3]. It is possible for isolated ureteral injuries to be missed at the time of injury. Such patients tend to present later, with subsequent evidence of upper tract obstruction, urinary fistula formation, and sepsis [4]. After gynecological pelvic surgery, any women who complains of flank pain, develops vaginal leakage of urine, or becomes septic; ureter or bladder injury should be suspected, and should be investigated appropriately.

A relative rarity, uretero-uterine fistulas constitute less than 6% of all urinary tract fistulae [5]. Presentation of such fistulae is usually in the form of paradoxical incontinence that is incontinence of urine in the presence of normal voiding, as in our reported case.

Failure to recognize and treat an iatrogenic ureteral injury either during the procedure or in the immediate postoperative period may lead to fistula or stricture formation with ureteral obstruction. The management of fistulae and strictures usually involves surgical repair. However, diversion of urine by ureteral stent or percutaneous nephrostomy tube drainage may be attempted when a fistula is present, and an operation may be avoided.

The goal of therapy is the expeditious resolution of urine leakage, prevention of urosepsis and preservation of renal function. Once the diagnosis is made, prompt drainage of the affected upper urinary tract is essential as partial ureteral obstruction is often present [6]. An attempt of ureteral stenting or percutaneous nephrostomy tube decompression is warranted as soon as possible [7].

If direct open surgical repair is not being immediately considered, conservative management alone will occasionally result in fistula closure [8].

Endoscopic management of the ureter uterine fistulae by ureteral stenting may be sufficient to promote closure of the fistulae in some cases [9].

If ureteral stenting is unsuccessful because of complete ureteral occlusion or prolonged leakage persists despite stenting, ureteral reimplantation with or without a psoas hitch or a Boari flap is usually curative.

In this case, we started with cystoscopy to confirm the diagnosis and to initiate an endoscopic treatment by stenting the ureter. Despite existing severe edema, we successfully divided the two Vicryl sutures causing entrapment of the left ureter.

Removal of the sutures has been enough to induce closure of the fistula, so it is advised to initiate treatment of such fistulae by firstly doing cystoscopy in order to confirm the diagnosis, dealing with possible causes, such as sutures as in our case or other possible foreign bodies, and stenting the injured part of the ureter. If these procedures failed, then percutaneous nephrostomy and ante grade stenting of the affected ureter is tried.

References


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