

Urological Complications in Gynecologic and Obstetric Operations at Surin Hospital

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Abstract

Objectives: To review the causes, treatment and morbidity associated with iatrogenic urological injuries in gynecologic and obstetric surgery.

Materials and Methods: From 2002 to 2006, the medical records of all patients with the diagnosis of iatrogenic ureteral and bladder injuries were reviewed and 10 cases with 11 injuries were identified.

Results: Intraoperative injuries were recognized in 4 cases (2 cases of cut ureter and 2 cases of bladder tear). Delayed complications occurred in 7 cases including 2 V-V fistulae and 5 U-V fistulae. Endometriosis which accounted for 5 of 7 cases was the common diagnosis in the ureteral injury group. V-V fistulae were repaired transabdominally. Ureteral injuries were treated by reimplantation of ureter with or without native bladder bridge. All patients recovered with no further complications.

Conclusions: Proper identification and, when necessary, isolation of the ureter during operations in high risk group is crucial in reducing the incidence of urological injuries. Urological consultation should be considered in high risk patients.

Key Words: V-V (Vesicovaginal) fistula, U-V (Ureterovaginal) fistula, Reimplantation

INTRODUCTION

Today the conflicts between the patients and the clinicians from the complications or adverse effects of medical treatment are increasing seriously. The problems lead to the courts with 3 to 5 cases a month in the year 2006.¹ In terms of medical personnel, we have to review pitfalls to prevent the undesired results. Gynecological surgery has traditionally accounted for more than 50% of all ureteral injury.² Abdominal

hysterectomy remains a leading cause of vesicovaginal fistula in developed countries, occurring in 1/1800 hysterectomies.³

However, the incidence of operative ureteral injury varies from 0.5-2.5% in routine pelvic operation to as high as 30% in radical procedures for malignant conditions. Two-thirds of all iatrogenic ureteric trauma occur during gynecological operation, most often from abdominal hysterectomy or excision of uterus

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adnexa.^{4,5}

The experience with 11 consecutive iatrogenic bladder and ureteral injuries were reviewed.

MATERIALS AND METHODS

From 2002 to 2006, 10 patients with 11 iatrogenic urological injuries resulting from obstetric-gynecological surgery were treated at Surin Hospital. Injuries were recognized intraoperatively in 4 cases (2 cases of cut ureters and 2 cases of bladder tear [Table 1]). Postoperative or delayed complications occurred in 7 cases including 2 cases of V-V fistulae and 5 cases of U-V fistulae (Table 2). Patient records and radiographic studies were reviewed retrospectively. The operative procedures causing the injuries, type of repair and outcome were reviewed.

RESULTS

A total of 10 patients, age ranged from 26 to 53 years (mean 42), sustained 11 urological injuries. In the 2 cases of V-V fistular, the 1- and 1.5-cm. in diameter fistulae located at the supratriangular region. The injuries occurred at the left ureter in 5 cases and at the right in 2 cases. All injuries were in the lower third of the ureters. Of the 7 cases with ureteral injury, the diagnosis was endometriosis in 5 cases and the other 2 cases were for C/S (Cesarean section). The onset of urine leakage in ureteral injury ranged from

7 to 21 days after the original operation, 2 weeks in cases of C/S and 1-3 weeks in cases of TAH BSO (total abdominal hysterectomy with bilateral oophorectomy).

All patients with injuries were discharged in good condition one week after the operative repair. Six weeks after repair, all patients were in good health and the stents were removed at that time. Except for a 53-year-old V-V fistular patient with diabetes mellitus, hypertension and ischemic heart disease, who one year later was admitted with acute pyelonephritis and leakage of urine one month after the operative repair. She underwent second repair operation and the leakage ceased.

In the case of U-V fistula resulting from C/S primigravida, the surgeon was legally charged for an error of performance. After good outcome of the operative repair, the negotiation was achieved.

DISCUSSION

Ureteral injury is potential complication in any abdominal or pelvic operations with an incidence of 0.5-1%. If unrecognized, these injuries may cause sepsis and lead to loss of renal function. Early recognition and repair of the injury allow for better results with fewer complications.⁶⁻⁸

In this study, 4 of 11 injuries (2 cases of cut ureter and 2 cases of bladder tear) were detected intraoperatively. Better outcome was achieved as patients did not suffer from leakage of urine. The V-

Table 1 Intraoperatively recognized injuries

Ureteral injury

Age (yrs.)	Diagnosis	Size (cm.)	Operations	Operative repair
39	Endometriosis	Uterus 9 X 9 X 7 Left ovary 2 X 2 X 1.2	TAH BSO	Reimplantation left ureter with psoas hitch
47	Endometriosis	Uterus 9 X 8 X 3.5 Right ovary 6 X 5 X 4 Left ovary 5 X 2 X 1.5	TAH BSO	End to end anastomosis left ureter with DJ stent

Bladder injury

Age (yrs.)	Diagnosis	Size (cm.)	Operations	Operative repair
53*	Myoma uteri	8 X 8 X 6	TAH BSO	Suture bladder
26	Previous c/s	-	C/S	Suture bladder

Table 2 Delayed complications**V-V fistula**

Age (yrs.)	Diagnosis	Size (cm.)	Operations	Leakage onset	Operative repair
53*	Myoma uteri	8 X 8 X 6	TAH BSO	1 month	Transabdominal repair
46	Bilateral TOA	4 X 3 X 3	TAH BSO	3 weeks	Transabdominal repair

*This case had intraoperatively recognized injury and delayed complication.

U-V fistula from C/S

Age (yrs.)	Gravida	Indication	Leakage onset	Operative repair
33	G4P3 (G1-G3 normal delivery)	Failed vacuum	14 days	Reimplantaion right ureter
28	G1P1	Failed vacuum	15 days	Reimplantaion left ureter with psoas hitch

U-V fistula

Age (yrs.)	Diagnosis	Size (cm.)	Operation (days)	Leakage onset	Operative repair
46	Endometriosis	Uterus 12 X 10 X 7 Right ovary 3 X 2 X 0.7 Left ovary 3 X 2 X 1	TAH BSO	21	Reimplantation left ureter
41	Endometriosis	Uterus 9 X 7 X 5.5 Right ovary 5.5 X 2.5 X 1.5 Left ovary 4 X 3.5 X 3.5	TAH BSO	9	Reimplantation right ureter with psoas hitch and DJ stent
49	Endometriosis with tear sigmoid colon	Uterus 12 X 11 X 6 Right ovary 10 X 3 X 2 Left ovary 7 X 4 X 2	TAH BSO Sigmoidectomy with end to end anastomosis	7	Reimplantation left ureter with Boari flap

V fistular patients were repaired 3 months after the initial operation. The incidence of the injury due to C/S was 3/2551 (0.001%), all cases occurred in the year 2006. The incidence of the injury in TAH with BSO was 8/723 (1%). Vesicovaginal fistula recurred in one of 2 cases; however, the reoperative repair was successful. Vesicovaginal fistula resulted from operative injury can be repaired with a success rate of 75-97%. With recurrent fistula, a failure rate of 10% has been reported.^{9,10} Endometriosis was the leading cause, 5 in 7 of ureteral injuries. The rests were caused by C/S.

Preoperative prophylactic use of ureteral catheter, recommended in the past,¹¹ was abandoned later.¹² There was no statistically significant difference in the

incidence of ureteral injury between patients who did and patients who did not undergo ureteral catheterization.¹³

Proper identification and, in the presence of risk factors, isolation of the ureter provided statistically significant reduction of iatrogenic ureteral injuries.¹⁴ From the author's experience, intra-operatively recognized injuries were treated successfully without further complications. In delayed complications, V-V fistulae were treated with transabdominal approach repair and U-V fistulae treated by ureteral reimplantation with or without psoas hitch with good outcome.

Thus, it is suggested that in cases of C/S, the staff should closely supervise the intern during the operative

procedure. In the cases of endometriosis or other large myoma uteri with risk of ureteral injury, careful identification of ureter or urological consultation should be considered.

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