Early Repair of Injury to the Ureter or Bladder after Hysterectomy

A. KOSTAKOPOULOS, CH. DELIVELIOTIS, G. LOURAS, A. GIFTOPoulos, A. SKOLARICOS
Department of Urology, University of Athens, Greece

(Accepted February 25, 1998)

In the present study we investigated the effectiveness of early diagnosis, repair of injuries to the ureter and urinary bladder sustained during hysterectomy, as compared to the results of delayed intervention.

There were 46 ureteral injuries and 20 vesicovaginal fistulas in 55 patients. In 14 cases of ureteral injury an endoscopic approach management was employed. There was complete healing in 18 vesicovaginal fistulas while there was a single case of a ureteral injury that required nephrectomy because of stenosis.

This study shows that early repair of urological injuries after hysterectomy has considerable advantages and the results are equally comparable with those of delayed intervention. In most cases of ureteral injury an attempt of an endoscopic repair is warranted before proceeding to open surgery.

Introduction

Despite the advances in modern surgical techniques, injuries to the ureters and urinary bladder after gynaecological surgery are not uncommon. The frequency of ureteral lesions after simple hysterectomy is 0.5–3%, while after radical hysterectomy 10–15% [1, 2]. A vesicovaginal fistula is rare, occurring in 1% of hysterectomies [3], more commonly after an abdominal than a vaginal procedure. One third of the ureteral lesions are diagnosed intraoperatively and repaired immediately. The exact timing and method of management of these injuries have been the subject of debate especially after the development and progress of endoscopic techniques. Most authors nowadays report better results with early repair as compared with surgery after a few months’ delay [4].

Here we report and analyze the results of early repair of urological lesions after hysterectomy.

Patients and methods

From January 1987 to December 1995, 55 women aged 24–74 years (mean 53) were treated for urological injuries after hysterectomy.

Thirty women had unilateral ureteric injury (10 on the left and 20 on the right), 5 had bilateral lesions, 5 vesicovaginal fistula concurrent with a unilat-
eral (3 on the right and one on the left) or bilateral (1) ureteral injury and 15 had vesicovaginal fistula. In 40 women there were a total of 46 ureteric injuries, 6 of which were bilateral, 11 on the left and 23 on the right. Ureterovaginal fistula was present in 19 cases and ureteral obstruction in 27. Fistulas resulting after radiation treatment were not included.

**Diagnosis**

In 8 patients the ureteric injury was diagnosed intraoperatively during hysterectomy and was repaired immediately. Six of these patients had a unilateral lesion and 2 bilateral transection of the ureters (Fig. 1).

In the remaining 47 women, those with urine leakage were diagnosed within 3 weeks (mean 7 days), while those with obstructive symptoms within 3 months (mean one month).

In the latter cases, referred for investigation of back pain and fever, the diagnosis was established by ultrasound and excretory urography. In all cases, the diagnosis was confirmed by cystoscopy and an urogram before proceeding with the repair operation. In five cases a CT scan was performed.

![Bilateral injury of the ureters after hysterectomy](image)

**Fig. 1.** Bilateral injury of the ureters after hysterectomy. Intravenous urogram shows hydronephrosis of the right ureter and silence on the left