

## Double J stents in the treatment of gynaecological injury to the ureter

W H Turner MA FRCS    D W Cranston DPhil FRCS    A H Davies MA FRCS    G J Fellows MS FRCS  
J C Smith MS FRCS    Department of Urology, Churchill Hospital, Headington, Oxford OX3 7LJ

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### Summary

Ureteric injury is a recognized complication of hysterectomy and may present with obstruction or fistula.

Between 1987 and 1989 in Oxford nine patients with 10 injured ureters underwent attempted retrograde placement of double J stents. Three patients had successful outcomes and one patient with bilateral ureteric obstruction required reimplantation of the right ureter after successful stenting of the left ureter. One patient required removal of a stent due to irritation but her fistula eventually closed. In three patients placement was unsuccessful and in one patient injury to the bladder base prevented the ureteric orifices from being seen and hence stenting was not possible. Thus five of these 10 injured ureters were managed successfully with double J stents.

We advocate the initial use of double J stents in gynaecological ureteric injury. This approach is simple and may cure the fistula. If it is unsuccessful, subsequent reimplantation is not hindered.

### Introduction

Inadvertent ureteric injury is a hazard of hysterectomy and may cause ureteric fistulae or obstruction. The management of these injuries has changed over the last century. In 1885 Gross reported a series of 233 nephrectomies<sup>1</sup>; of these 12 were performed to cure ureteric fistulae. Herman recommended the same approach in 1938<sup>2</sup> but modern management is more conservative.

With the advent of bladder flaps, ureteric reimplantation and transureteroureterostomy, nephrectomy is now seldom performed for ureteric injuries. The efficacy of open surgery in the treatment of

gynaecological injury to the ureter was emphasized recently by Badenoch *et al.*<sup>3</sup>, who stressed the value of early operation.

However, selected injuries of this type have been managed without the need for open surgery. In 1967 Zimskind *et al.*<sup>4</sup> described the use of indwelling silastic ureteric splints in ureteric fistulae and strictures of various aetiologies, including gynaecological injury. In 1979 Lang *et al.*<sup>5</sup> reported the use of vented single pigtail catheters placed percutaneously in an antegrade manner to treat ureteric fistulae and strictures, again, including those of gynaecological origin.

With the introduction in 1978 of double J stents, preventing migration up or down the ureter, a better means of treating these injuries emerged. The relatively low morbidity of the stents has been reported recently by Smedley *et al.*<sup>6</sup> and retrograde placement allows treatment of these injuries without recourse to open surgery.

### Patients and methods

Records of women with gynaecological injuries to the ureter treated at this department between 1987 and 1989 were reviewed.

All injuries suspected postoperatively were confirmed by intravenous urography before urological intervention.

### Results

Details of the patients, the nature of their injury and of their urological management are shown in Tables 1 and 2.

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Table 1. Nature of ureteric injury

Case no.	Original operation	Complication	Time from injury to diagnosis
1	Abdominal hysterectomy	R Uretero-vaginal fistula	1 week
2	Vaginal hysterectomy	R Uretero-vaginal fistula	3 weeks
3	Abdominal hysterectomy	L Ureteric obstruction	At operation
4	Vaginal hysterectomy	R Uretero-vaginal fistula	5 days
5	Wertheim's hysterectomy	Bilateral ureteric obstruction	6 weeks
6	Vaginal hysterectomy	L Uretero-vaginal fistula	1 month
7	Emergency postpartum hysterectomy	R Uretero-vaginal fistula	3 days
8	Abdominal hysterectomy	R Uretero-vaginal fistula	2 months
9	Vaginal hysterectomy	R Ureteric obstruction and Vesico-vaginal fistula	6 weeks

R=right  
L=left

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Table 2. Management of ureteric injury

Case no.	Management	Outcome	Discharged
1	J stent for 3 months	IVU normal 3 months later	Yes
2	J stent for 3 months	Ultrasound normal 3 months later	Yes
3	J stent for 2 months	Clinically well 2 weeks after removal of stent	Yes
4	J stent for 2 months	Removed at 2 months because of irritation. Leaked for one year afterwards but now dry	No
5	L J stent for 5 months R J stent would not pass so reimplantation	Stent blocked at 6 weeks so changed. Clinically well at 8 months	Yes
6	J stent would not pass so reimplantation	Ultrasound normal at 5 months	Yes
7	J stent would not pass so reimplantation	Ultrasound normal at 2 months	Yes
8	J stent would not pass so reimplantation	Ultrasound normal at 8 months	Yes
9	No ureteric orifices seen at cystoscopy so abdominal repair and reimplantation	IVU normal at 6 months	Yes

R=Right

L=Left

### Discussion

This series of patients undoubtedly affirms the place of double J stents in the management of gynaecological injury to the ureter. Four patients were treated successfully and one patient's fistula eventually healed after one year following an initial period of stenting. Definitive surgery was discussed with this patient following removal of the stent (for irritation), but she decided to wait and see. Thus 50% of these injuries were managed without open operation. Of the five injured ureters which could not be stented, four were not negotiable with a stent and in one patient neither ureteric orifice could be seen at cystoscopy because of an injury to the bladder base.

There were no major complications from the use of stents. One required changing because of blockage and one was removed because of trigonal irritation.

We would therefore urge that the use of double J stents be considered in all patients with a ureteric injury following gynaecological surgery. This may

avoid open surgery but if it is unsuccessful, subsequent reimplantation is not compromised.

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