

URETERIC INJURIES COMPLICATING OBSTETRIC AND GYNAECOLOGIC OPERATIONS IN THE UNIVERSITY OF CALABAR TEACHING HOSPITAL, CALABAR, NIGERIA.

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ABSTRACT

A retrospective study to determine the rate and pattern of ureteric injuries complicating gynecologic and obstetric operations in the University of Calabar Teaching Hospital (UCTH) during a ten-year period (1990 –1999) was undertaken. The number of major operations carried out during the period was 9350. Of these, 8670 (92.7%) were gynecologic procedures and 680 (7.3%) obstetric. Eight cases of ureteric injuries were recorded during the period under study. Three of these occurred with obstetric operation giving an injury rate of 0.4% (3 of 680), while the rate for gynecologic operations was 0.06% (5 of 8670). The overall injury rate was 0.09 % (8 of 9350). We conclude that ureteric injuries complicating obstetric and gynecologic in this centre are very rare. Such injuries are more frequent with obstetric compared to gynecologic operations. Prognosis is good when these injuries are recognized early and given appropriate treatment.

KEYWORDS: Ureteric injury, uretero-neocystostomy, uretero-vaginal fistula

INTRODUCTION

Ureteric injuries are known to complicate operations on intra-pelvic organs. The incidence is reported as 0.24 - 0.4% (Lefebvre and Heywood, 1999). For radical pelvic procedures, injury rates as high as 30% have been reported (Hurd, Chee and Gallagher, 2001). Gynecologic procedures are responsible for majority of such injuries. Rates of up to 75% are reported in some series (Benard and Ellerkmann, 2003). Identification of the ureter at the time of surgery reduces the risk of damage but does not eliminate it entirely. Risk of damage is higher in the presence malignancy, endometriosis, previous retroperitoneal dissection and adhesions, where the primary disease may have altered the anatomy. The variants of injuries range from ligation, distortion or kinking, crushing with clamps, de-vascularisation, compression from haematomas and complete transection (Lefebvre and Heywood 1999). Experience of the surgeon and the type of surgical procedure are important determinants of ureteric injury. In this centre, operative procedures are carried out by either consultants or resident doctors as the responsible surgeon. Against this background, all such operations done over a ten-year period were examined and the findings are presented.

MATERIALS AND METHODS.

The hospital registration numbers of all patients undergoing surgery for repair of ureteric injuries incurred in the course of obstetric and gynecological operations during the ten-year period 1990-1999 were obtained from the operations register. With the numbers, records of the patients were obtained from the medical records department and studied. Information sought were, the type of operation in which the injuries occurred, the pattern of such

injuries, the operating experience of the responsible surgeon, the point of detection of the injuries, and the treatment offered. The effect of these variables on the incidence/ pattern of injuries and the outcome of treatment was examined. Also obtained from the records department were the number and type of all major operations carried out in the department of obstetric and gynecology during the period.

RESULTS

There were 9350 major operations during the period. Eight thousand six hundred and seventy (92.7%) of these were gynecologic, while 680 (7.3%) were obstetric (Fig 1). Eight cases of injury to the ureters were recorded. Five of these involved gynecologic operations while 3 were from obstetric procedures. Two of the gynecologic procedures were performed by consultant staff. An emergency obstetric procedure (for prolonged labour) by a resident resulted in ligation/severance of both ureters in one patient. The remaining five procedures complicated by ureteric injuries, were carried out by staff of senior registrar cadre. There was no deliberate identification or isolation of the ureters before surgery, in any of the cases. Abdominal hysterectomies, total (4 cases) or subtotal (1 case) were responsible for all the 5 injuries complicating gynecologic procedures. The injuries comprised one case of complete severance of the right ureter during total abdominal hysterectomy for malignant disease by a consultant gynecologist. It was recognized intraoperatively, the urologists were invited and the patient had the benefit of instant treatment by uretero-neocystostomy. Another case of complete severance of the left ureter, during sub-total hysterectomy, by a consultant was also recognized intraperatively. The proximal end of the severed ureter was labeled with a stitch and exteriorized by the

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Gynecologic. 8670 cases (92.7%)
Obstetric. 680 cases. (7.3%)

Fig. 1. Obstetric Vs Gynecologic operations in 10 yrs

Table 1. Distribution of ureteric injuries by class of surgery

Class of Surgery (No. of cases)	No. of cases of ureteric injuries (Rate)
Gynecologic procedures (n=8670)	5 (0.06%)
Obstetric procedures (n=680)	3 (0.4%)

Table 2: No. and pattern of ureteric injury by type of Operation

Type of Operation	No./ pattern of injury
Gynecologic operations	5 cases of injury. (all unilateral) - complete severance 2 cases - ligation 3 cases
Obstetric operations	3 incases of injury - bilateral ligation and severance 1 case - ligation only 2 cases

gynecologist. Treatment was by end-to-end ureteric anastomosis done by the urologists two weeks later. A case of complete severance of the left ureter, during hysterectomy by a senior registrar, was missed at surgery. It was recognized post operatively after

discharge from the ward, when the patient presented with continuous leakage of urine par vaginam. Examination under anaesthesia (EUA) and dye instillation studies showed there was no vesico-vaginal fistula. An excretory urogram confirmed uretero-vaginal fistula, which was treated by uretero-neocystostomy. A review excretory urogram obtained several months after the procedure showed normal structure and function of the upper tracts. Ultrasound scans of the kidneys in the same patient, done five years after the procedure, in the course of preparing this paper, showed normal kidney (Fig 2) on the affected side. Obstetric procedures accounted for three cases of injuries to the ureter. One was bilateral ligation/severance recognized immediately postoperatively as complete anuria. The patient was re-explored the next day and treated by bilateral uretero-neocystostomy with excellent outcome. Two cases of unilateral ligation were recognized at various times after surgery when they presented as unilateral loin pain with ipsilateral hydronephrosis on excretory urogram. They were treated by uretero-neocystostomy. One of them was still being seen with mild symptoms of loin pains (for which appropriate antibiotics were prescribed) up to five months after repair. There was no evidence from the notes, of the second case being seen again, after the first postoperative visit. She was therefore taken as being lost to follow up.

In all cases, uretero-neocystostomy was done by the Politano-Leadbetter anti reflux technique (Politano and Leadbetter, 1958), by the same surgeon. This technique involves some sub-mucosal tunneling of the implanted ureter before anastomosing it to the bladder epithelium. Table 1 presents the number of injuries by class of surgery. Obstetric operations accounted for three cases while five were from gynecologic procedures. Table 2 shows the pattern of the injuries by type of procedure. Gynecologic procedures accounted for five cases, all unilateral injuries, made up of 2 cases of complete severance and 3 cases of ligation. Injuries complicating obstetric procedures were, one case of bilateral ligation / severance and two cases of unilateral ligation only.

DISCUSSION

Reported rates of ureteric injuries complicating obstetric and gynecological procedures range from 0.24 to 0.4 percent (Lefebvre and Heywood, 1999). Some workers in a 10-year retrospective study of ureteric injuries complicating pelvic operations from the western part of Nigeria reported an incidence of 0.4% (Oboro, Dare and Fadiora et al, 2002). The overall injury rate of 0.09 % from this study, is therefore one of the lowest in the literature. Consistent with the finding in most other series, gynecologic procedures were responsible for most of the injuries. A curious finding reported to be very rare (Goswami, Wadhwa and Sharma et al 2003) was the one case of bilateral ureteric injury during a caesarian birth. In one of the cases involving a gynecologic procedure, (total abdominal hysterectomy), ureteric injury was

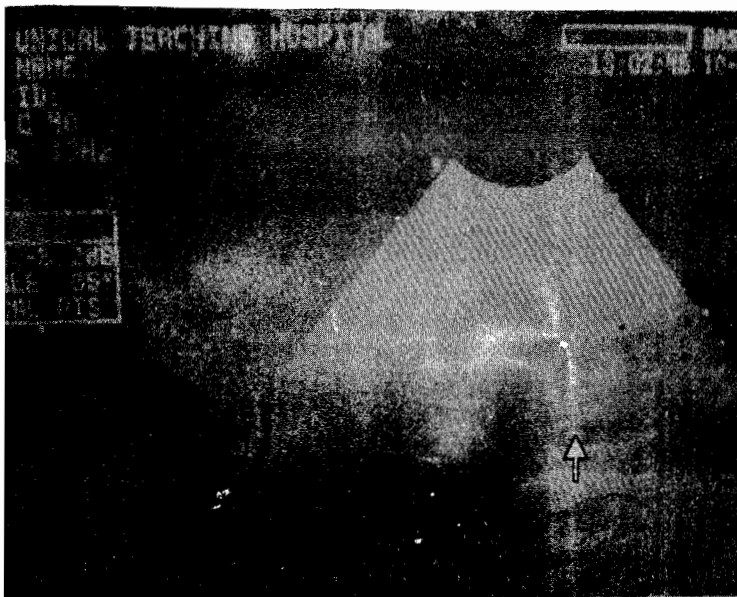


Fig. 2. Ultrasound scan showing ipsilateral kidney (arrow) of a severed and re-implanted ureter completely normal, 5 years on.

suspected when on preparation to close, relentless 'oozing' of rather dilute blood was noticed in spite of spirited efforts at haemostasis. Instant urologic consult was obtained culminating in identification of a severed right ureter and immediate treatment by uretero-neocystostomy. The outcome was excellent. This tallies with the experience from other centres (Oboro et al 2002 and Badenoch et al 1987) where it was observed that those injuries recognized intraoperatively and treated there and then, had the best results. Intraoperative recognition of injury was found in only 2 of 8 (25%) cases, perhaps because these two cases had experienced consultant staff as the responsible surgeons. All the other cases were handled by senior resident staff. In a report from Jordan involving a similar study in a similar institution and spanning four years, (Matani, Bani-Hani and Bani-Hani 2003) an intraoperative recognition rate of 41.2% (7 of 17) was recorded.

Treatment was by open surgical repair in all cases. Assessment of outcome was by clinical findings, postoperative studies of structure and function of the kidneys/the upper tracts with excretory urogram, ultrasound scans and electrolytes urea/creatinine determinations. The one exception to this was the case of ligation that was lost to follow up. The success rate after an average follow up period of five years was 87.5%. This compares with the report from Jordan where an overall success rate of 89.5% (17 of 19) was recorded.

Even though the study population is rather small for certain observations, we conclude that:

Iatrogenic ureteric injury is still a major cause for concern during obstetric and gynecologic procedures irrespective of the cadre of the surgeon.

The rate at which the ureters are injured during obstetric and gynecological operations in the UCTH Calabar is among the lowest reported in the literature.

The intraoperative recognition rate for ureteric injuries during procedures by resident staff is low.

A policy of deliberate identification and isolation of the ureters during relevant obstetric and gynecologic procedures especially by resident staff is worthy of consideration.

Properly managed, the outcome for these injuries is good for majority of cases.

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