



# THE CHALLENGE OF DIAGNOSIS AND MANAGEMENT OF CAESAREAN SECTION INDUCED BILATERAL URETERIC INJURY IN LIMITED HEALTH RESOURCES: CASE REPORT AT SAINT FRANCIS REFERRAL HOSPITAL IFAKARA -TANZANIA.

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**Abstract:** Ureteric injury is common in pelvic surgeries and mostly in gynecologic surgeries especially in inexperienced surgeon. However, caesarean section (SC) induced ureteric injury is generally uncommon and usually diagnosed during urine assessment before closing the abdomen which is indicated by urine with blood stain within the urine bag. Ureteric injury repair, should be done by the urology surgeon, which may not be always possible in limited resourced areas. Herein, we present the role of General surgeon in management of case with caesarean section induced bilateral ureteric injury in Tanzania.

**Key words:** Caesarean section, Ureteric Injury, General surgeon, Severe anemia, Acute renal failure, Uremic toxicity.

## **Introduction**

Caesarian Section induced ureteric injuries is the serious complication which may be fatal especially in limited health resources particularly in lower income countries where the experienced and specialists health personals are scarcity (1). The commonest urologic injury is urinary bladder in which in most cases is immediately diagnosed at operating table through urine evaluation (2,3). The ureteric injury is associated significant complications including chemical peritonitis and renal failure (4,5). Ureteric injuries generally require the presence of a specialist urologist in the operative field which is may be impossible in some areas (4). Cesarean - hysterectomies account about 3% incidence which is a 7-fold increase in injuries compared to non-obstetric hysterectomies(4,6). Since the distal ureter lies very close to the female reproductive organs, it is a major risk factor to be injured during pelvic surgeries(5,7). The repetitive occurrence of ureteric injuries indicate that there should be an advanced knowledge among general practitioners on the subject of ureteral injuries to enable early detection and timely referral. For the specialist, early diagnosis and immediate ureteric injury repair increase the probability of quick recovery and hence short hospitalization and good outcome. We present the few cases with ureteric injury to increase understanding capacity of early determination of urinary tract injuries during pelvic surgical procedures to achieve optimal outcomes.

## **Case report**

We case of 30 years female, gravida 5 para 4 who underwent caesarian section at Mlimba health center, during the procedure. Intraoperative at health center it was found that she had impending uterine rupture and hence hysterectomy was done. Post-operative, the patient developed abdominal distention and she had no urine regardless of significant Intravenous fluid given for four days. But also the patient had progressive abdominal distension and tenderness. The patient was referred at our facility at day four with failure to pass urine for four days following caesarian section and hysterectomy.

On arrival the patient was dehydrated, dyspnea, pale+++ , the abdominal was grossly distended, tense and rebound tenderness. However the sub umbilical incision was intact. Vital signs: BP138/87mmHg, PR 102 p/min, RR24 c/min, UOP: 0 mil

The patient had Provisional diagnosis of chemical peritonitis, due to ureteric injury; with differential diagnosis of proximal bladder injury with peritonitis. Another diagnoses were acute kidney injury (AKI) due to absence of oliguria for four days, last diagnosis was severe anemia due to conjunctiva paleness (+++)

Investigations done were: abdominal ultrasound which revealed bilateral dilated ureters, peritoneal free fluid.

Renal function test which revealed elevated serum creatinine 1277.1 $\mu$ mol/l, (normal range readings are (44.-80  $\mu$ mol/l), Urea 20.19 mmol/l (range 2.8-7.2mmol/l), **HB level 5.1g/l**. on the other hand, electrolytes were within normal ranges

The patient was kept on antibiotic (IV ceftriaxone 1g bid, IV metronidazole 500mg) and anti-pain (IM tramadol 50mg). The blood transfusion was ordered (3 units). Iv fluid was given with in precaution due to anemia to avoid cardiovascular fluid overload and further hemo-dilution which could anemia induced heart failure, but also the patient had AKI; hence, the patient was kept on serial vital sign monitoring after every an hour for 24 hours. Consistence of vital signs included pulse rates, respiratory rates, urine output (which was (0 throughout before operation) and blood pressure.

After collection of anemia through blood transfusion (**8.2 gm/dl**) the patient was taken into theater for explorative laparotomy. On opening the abdomen the first came out was the urine of which more than six liters was evacuated from the abdominal cavity, on further assessment we found that the left ureter which was ligated at the about 10 cm from cystic-ureteric junction while the distal stamp was not visible (probably was sutured with uterine ligament during hysterectomy). Further abdominal evaluation went on to find left ureter, which was found ligated together with left uterine ligaments and other ruminants. On releasing the ligating sutures it was found to be health and intact. After releasing the right ureter, the left was stabilized with ureteric stent by improvising the neonate NGT (as the ureteric catheter was out of stock) which was introduced onto the ureter through the forely catheter vial urinary bladder. The patient was kept on IV ceftriaxone 1gm, Diclofenac Intramuscular and frusemide to stimulate the kidney function. There was no post -operative complications occurred. Two weeks later the both catheters were removed. The patient had one week for post catheter removal observation. Finally, the patient was discharged after three weeks when the patient was clinically stable and after excluding any sign of kidney injury. Clinical follow up for three months was done and the patient is generally health.

### ***Discussion***

Ureteric injuries are among the most serious complications of pelvic surgery while bilateral ureteric injury is extremely rare reported to be about 0.28 %(8). While the intraoperative diagnosis of ureteral injury is complex requiring a high index of suspicion, and normally by urologist which may be difficulty in a limited specific specialties and hence the general surgeon should take a role of urologist (5,6). Our case was referred at our

center at day four post bilateral ureteric injuries and chemical peritonitis which had already complicated to AKI with raised serum creatinine. **Interventions required to reduce uremic toxicity, collection of anemia and retaining kidney function (which are all deadly conditions); finally explorative laparotomy and ureteric repair.** However the patient had to have prolonged hospitalization which contribute to emotional to the patient and family as well(3,5).

Most of the literatures have been reporting on the urinary tract injuries during pelvic surgical procedures of which about half of reported are due to non-obstetric while urinary tract injuries bladder injuries account about 50% (2,3,6), Ureteric injury during obstetrics-gynecology are rarely reported. Which contribute to data scarcity and hence lack of evidence. In Tanzania, the situation may be more than what is existing in the literature due to the fact that mostly are not reported. In the limited specialized health personnel, reports of ureteric injuries should be encouraged and emphasized in order to stimulate clinician mind and capacity building on abnormal clinical presentations of which the diagnosis requires high suspicious index (2,3). Whenever there is suspicion of ureteric injury, the patient should be referred at high specialized hospital. In our case she went into AKI with systemic complication (severe anemia with HB 5.1g/dl). The patient with severe anemia and AKI (case 2 above) would be difficulty to be managed at the district hospital since she needed multidisciplinary approach including, physician, urologist and surgeon. General clinicians should be aware on the possibility of extraordinary complication which may be fatal to the patients. This indicate that, in most cases, deaths due to maternal and maternal related complications are preventable. But this is when there is multidisciplinary approach, experienced health personnel and timey intervention.

### ***Conclusion***

The obstetric-gynecology operations by general practitioners in the peripheral hospitals is the major cause of ureteric injuries at our set up. The condition can be prevented by great attention during operation. Knowledge of abdominal-pelvic anatomy and experience are the keys in urinary tract injuries prevention during abdominal pelvic surgeries. Whenever happens, timely management is recommended which is only possible in early referral if the condition occur at lower health centers since ureteric repair is almost impossible as it requires a specialized doctors.

### ***Ethical consideration***

Institutional and international research regulations were maintained during the time of interacting with the patient and during manuscript preparation.



***Conflict of interests***

The authors declare that they is no conflict of interests.

***Contributions of the authors.***

There was equal author contribution depending cases management, narrating and literature search, manuscript editing. Finally all authors read and approved the final manuscript.

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