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Ureteric injury in gynecology

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ABSTRACT

Ureteric damage is a rare but a well known complication in obstetric and gynaecological practice. It has repercussions in terms of morbidity and medico-legal practice. There is wide variation of reported incidence is related to the type of surgery. Preoperative and intraoperative precautions can prevent the injury up to a point the injury but the effectiveness of these actions has not been fully assessed.

Keywords: ureteric damage, surgery, morbidity

INTRODUCTION

The most natural predator of the ureter is the gynaecologist. Next to the pelvic organs, ureters proximity makes it vulnerable to injury during gynaecological surgery. Gynaecologists share a common fear regarding ureteric injury. Its morbidity is translated in longer hospital stay, reinterventions, reoperation, potential loss of renal function, and deterioration of the woman's quality of life. Ureteric injury can occur not only during complicated procedures but also during routine surgeries [1,2].

ANATOMICAL LANDMARKS

The most common site of ureteric injury is, at the pelvic brim, where the ureter crosses the ovarian vessels in the infundibulopelvic ligament and lateral to the cervix. Seldom, lessions in ovarian fossa du occur, mostly during oncology surgery or during endometriosis.

Table 1 lists the most common risk factors for ureteric injury. As Altgassen et al., already published, we have to enhance that surgeon's experience is probably the most prominent factor, with experience surgeon's having half the complications compared to beginners [3,4].

TABLE 1. Risk factors for ureteric injury [3,4]

Distorted pelvic anatomy
Adhesions
Endometriosis
Cancer
Obesity
Pregnant uterus
Severe prolapse

Electric cautery is involved in roughly one-quarter of this. Ureters pass lateral to the cervix at an average distance of 2.3 cm-0.8 cm. In 12% of the cases, the distance was less than 0.5 cm. The short distance is directly linked to body mass index [5].

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PREVENTION

A good anatomic background is always useful for laparoscopic and open surgery. Alongside classical textbooks, simulators and cadaveric courses are most helpful, in acquiring knowledge and skills [6]. In complex cases, performing an MRI or an intravenous urography can be of help. Nevertheless, these investigations have no impact on routine cases. During the surgery, visualisation of ureteric peristalsis should be done as many times as necessary. Sometimes is easier to discover the ureters at the pelvic brim and follow its course through the pelvis, as it might be time saving. Mobilisation of the ureter can be done for a 15 cm distance, under the caveat that vascularity should be preserved. A common expert opinion states that ureteric stenting (including lighted ureteral stenting) is mandatory in extremely complicated cases such as severe endometriosis) [1,7].

RECOGNITION

There are several types of ureteric injury, as listed in Table 2.

TABLE 2. Types of ureteric injury [4]

Transection
Resection
Ligation
Thermal
Crush
Laceration
Angulation

Just 30% of ureteric injury as recognised intraoperatively, therefore any suspicion of ureteric injury should promptly be investigated [8]. Cystoscopy can provide us with information about ureteric obstruction but cannot exclude other injury types. If at any time, the surgeon notices air or blood during ureteric inspection, suggests injury. Stenting is another way of assessing urteric integrity,which can be at the same time a therapeutic treatment in cases of angulation [9]. Ureteroscopy might locate the level and extent of the injury.

POSTOPERATIVELY RECOGNITION

The methods of identifying a ureteric injury postoperatively are analogous to those for bladder injuries. If a patient failure to thrive, that should immediately raise suspicious of organ damage. Within the first 48 hours following surgery, there might be pain and tenderness, watery leak, haematuria. A urinoma occurs due to fibrous reaction. This in turn can cause abscess and even sepsis. In cases of cautery damage, this can become obvious 14 days post-surgery [10,11]. Ureteric injury can heal spontaneously or lead to stricture formation, fistula, and kidney damage and in up to 25% of the cases, it can result in kidney loss [12].

Whenever gynaecologist surgeons have an ureteric injury, multidisciplinary management is mandatory. This is necessary as ureteric injury belongs to another speciality, for medical legal reasons and also for reducing long-term morbidities.It is up to the urologist to choose the most suitable procedure for ureteric repair.

CONCLUSIONS

A quote is often said: “To avoid all injuries to the urinary tract, one would have to stop operating“. Occasionally, even the best of us will have injuries. Hence, it is of upmost importance to be accustomed with different strategies that can reduce the incidence of such complications and avoiding litigation and long-time morbidity.

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