Complete double ureter in a case of carcinoma cervix: incidental intraoperative diagnosis and implications

Sarita Kumari [1], Rudrika Chandra[2]

[1]Obstetrics and Gynaecology, All India Institute of Medical Sciences, New Delhi, Delhi, India
[2]Obstetrics and Gynaecology, Command Hospital Panchkula, Panchkula, Haryana, India

Correspondence to
Dr Sarita Kumari;
sarita2325@gmail.com

Accepted 15 September 2023

DESCRIPTION

A postmenopausal woman in her 70s presented with complaints of non-foul-smelling blood-stained discharge per vaginum for 4 months. She had no urinary or bowel complaints. She was menopausal since last 20 years and had delivered five children during her reproductive years. On clinical examination, there was a 1.5–2 cm irregular area on anterior cervical lip, which bled on touch. Uterus was anteverted, postmenopausal size, mobile and bilateral parametria were free. Punch biopsy from cervix was suggestive of non-keratinising squamous cell carcinoma. Contrast-enhanced MRI of abdomen and pelvis suggested stage 1B1 carcinoma cervix, and she was planned for type C1 radical hysterectomy. Preoperative imaging did not suggest any ureteric anomaly or dilatation of urinary tract although; a CT urography or MR urography is the modality of choice to diagnose duplication of ureters. Intraoperatively, at the time of dissection of pelvic spaces, we encountered double ureter on the left side running in the medial leaf of peritoneum beneath the uterine artery (figure 1). It led to increased surgical complexity as ureters needed dissection from the ureteric bed till the point of entry into the bladder base to complete the radical hysterectomy. Both ureters were identified by using ureteric slings, and the dissection was carried out meticulously as we were not aware of the course of these ureters, that is, whether they were complete or incomplete double ureters. After complete dissection, we were able to identify complete double ureters (figure 2). The patient had an uneventful postoperative course and is currently disease and symptom free 6 months post-surgical treatment.

The reported incidence of unilateral double ureter is 1 in 125 cases (0.8%).[1] Deka and Saikia[2] reported them in 1.67% of 60 specimens, and, incidentally, all were on the left side. Kulkarni *et al*[3] revealed that they are more common in women. Double ureter is caused by abnormalities in the branching of the ureteric bud during fetal period. It may present as either complete or incomplete duplication. In case of complete duplication, the ureteric bud arises twice and results in a double ureter with double opening into the urinary bladder. In the Dähnert[4] study on excretory urograms, incomplete duplication of ureter was threefold more common than complete duplication. In the current case also, it was present on the left side, however, it was a complete duplication.

Clinically, patients may be asymptomatic or present with abdominal or flank pain and are predisposed to ureteral obstruction, uretero-ureteric and vesico-ureteric reflux and recurrent urinary tract infections. It can be an incidental finding during abdominal or pelvic surgery, and an in-depth knowledge of abnormal anatomical pattern can be

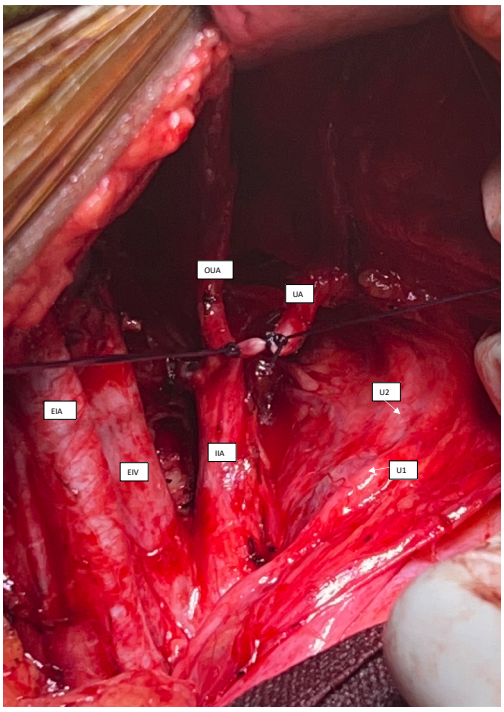

Figure 1 Double ureter in the medial leaf of peritoneum in left hemipelvis. EIA, external iliac artery; EIV, external iliac vein; IIA, internal iliac artery; OUA, obliterated umbilical artery; U1, ureter 1; U2, ureter 2; UA, uterine artery; .

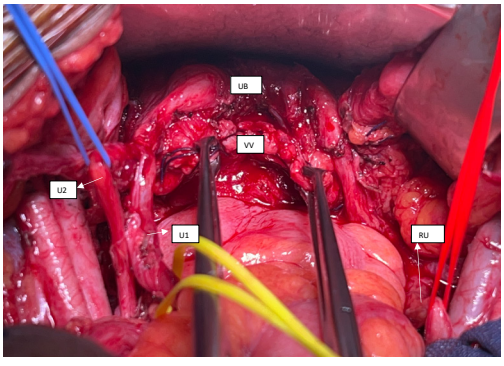

Figure 2 Complete double ureter in left hemipelvis. RU, right ureter; U1, ureter 1; U2, ureter 2; UB, urinary bladder; VV, vaginal vault.

To cite: Kumari S, Chandra R. *BMJ Case Rep* 2023;**16**:e255971. doi:10.1136/bcr-2023-255971

of utmost importance to prevent and manage injury. Varlatzidou *et al*[5] and Kelly *et al*[6] have reported them as an incidental finding during pelvic surgery in female patients. In the current case also, it was an incidental finding.

During simple hysterectomy for benign conditions, if accidentally ligated intraoperatively, then the patient will present in immediate postoperative period with flank pain, flank mass, decreased urine output, raised serum urea and creatinine, and abdominal and pelvic ultrasound will suggest hydroureteronephrosis. CT urogram or intravenous urogram will be required to make a diagnosis. Intraoperative identification and management of injury will provide the best outcome; however, preoperative suspicion should be there. Hence, a knowledge about anomalies is important to tackle such cases if accidentally encountered. Postoperatively, when identified and managed within 2 weeks by ureteric stenting followed by ureteric reimplantation gives a higher chance of successful outcome.

Patient's perspective

I was unaware of the finding of double urinary tubes inside my body till my doctors told me after my surgery was over. I felt overwhelmed to have a rare condition which went unnoticed till this time as I had no problems. I am thankful to my treating team of doctors who managed everything so well.

Learning points

- Double ureters are more common in women and are often an incidental finding during surgery.
- Surgeons must be familiar with complete/incomplete double ureter and its significance for minimising intraoperatively injuries.

Contributors SK and RC were responsible for drafting the text, sourcing and editing the clinical images, investigating the results, drawing original diagrams and algorithms, and critical revision for important intellectual content. SK and RC gave final approval for the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained directly from patient(s).

Provenance and peer review Not commissioned; externally peer reviewed.

Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

ORCID iD
Sarita Kumari http://orcid.org/0000-0003-4687-1058

REFERENCES

1 Standring S. *Gray's Anatomy: The Anatomical Basis of Clinical Practice*. Philadelphia: Churchill Livingstone Elsevier, 2016.
2 Deka B, Saikia R. A study of human Cadaveric Ureter by simple dissection method. *IJAR* 2016;4:3005–8.
3 Kulkarni V, Ramesh BR, Prakash BS. Bilateral Bifid Ureter with accessory renal artery: a case report. *Int J Bas Med Sci* 2012;3:67–70.
4 Dähnert W. *Radiology Review Manual*. Philadelphia: Lippincott Williams & Wilkins, 1999.
5 Varlatzidou A, Zarokosta M, Nikou E, *et al*. Complete unilateral ureteral duplication encountered during intersphincteric resection for low rectal cancer. *J Surg Case Rep* 2018;2018:rjy266.
6 Kelly J, Moghul FA, Pisani V. Double ureter at repair of obstetric fistula. *Int J Gynaecol Obstet* 2008;102:77–8.