

Iatrogenic variants of normal pelvic anatomy—be aware

Edgar V. Mocanu

Received: 8 November 2006 / Accepted: 13 December 2006 / Published online: 18 January 2007
© Springer-Verlag 2007

Keywords Laparoscopy · Ureteroneocystostomy · Female infertility · Genital tract anomaly

Introduction

Laparoscopic assessment of female pelvis is the last tool in the investigation of infertility being indicated in cases where pathology has been detected by other diagnostic means or when previous pelvic surgery has been performed.

A detailed knowledge of normal anatomy is essential for the laparoscopic surgeon to avoid damage to normal pelvic structures. We report a case of anomalous ureteric tract diagnosed at laparoscopy in a patient with previous ureterovesical reimplantation for primary vezicoureteral reflux.

Case report

A 31 year old female was referred by her general practitioner with primary infertility of 3 years duration. The background was of oligoamenorrhoea and anovulation. Past surgical history (age 4) included what she described as “bladder surgery”. This was performed abroad with no details of the procedure or access to chart available. She had no other surgical history. Abdominal examination

showed a transverse 7 cm incision midway between umbilicus and symphysis pubis.

Infertility investigations showed oligozoospermia and anovulation. Considering the previous surgical history and to complete the infertility investigations, after 6 months of unsuccessful antioestrogen therapy, a laparoscopy was performed.

This showed a healthy anteverted uterus with a small anterior wall pedunculated fibroid. The left tube was fixed in filmy adhesions to the ovary and peritoneal wall. The fimbrial end looked healthy. Despite salpingolysis, after methylene blue instillation no fallopian tube fill or peritoneal spill occurred. The left ovary was mobile and active.

The right adnexa was distorted. On initial inspection, the right round ligament, fallopian tube and ovarian ligament were “looped over” by a white band of tissue (Fig. 1). Upward mobilisation of the right ovary revealed the three structures to be crossed by a band arising from underneath the cephalad peritoneum and disappearing under the caudal (bladder) peritoneum (Fig. 2).

Upon close inspection and touch stimulation, vermiculations became evident quenching the diagnosis of a ureter. Methylene blue test showed right fallopian fill and spill into the peritoneum. The right ovary looked inactive and an ovarian biopsy confirmed subcapsular fibrosis consistent with polycystic ovaries. Hysterosalpingogram followed and revealed a normal uterine contour and bilateral tubal patency. The details of childhood operation, a right ureteroneocystostomy modified Leadbetter-Politano type, were sent by patient’s foreign GP at her request and following surgery.

E. V. Mocanu (✉)
Human Assisted Reproduction Ireland, Rotunda Hospital,
Dublin 1, Ireland
e-mail: emocanu@rcsi.ie

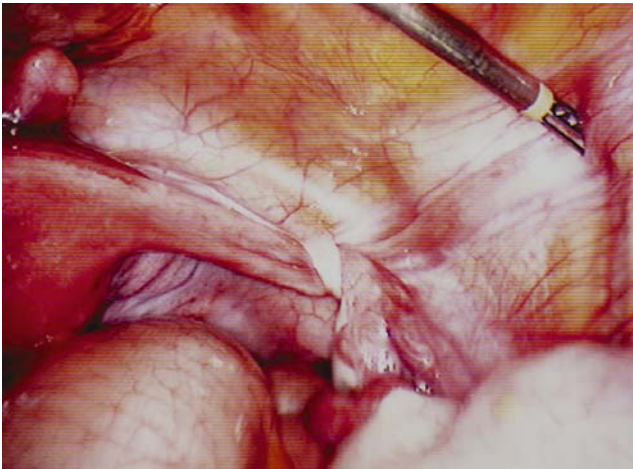


Fig. 1 First impression of a right sided tissue band strangulating the adnexa

Discussion

A Pub Med search using the words *ureteroneocystostomy*, *neoureterocystostomy*, *ureterovesical reimplantation*, and *infertility* was performed. One paper describing a reimplanted ureter perforating the fallopian tube was identified in the English published urological literature [1]. Other publications describe bowel complications [2, 3]. The lack of other reported cases, particularly in the gynaecological literature, suggests that not many such patients have reached reproductive age or presented with infertility offering the opportunity to be identified.

A few points that are not necessarily considered at the time of surgery but are important from a fertility and pregnancy point of view are worth noting. Should this patient require IVF, transvaginal oocyte aspiration could

potentially cause ureteric injury. Pregnancy alters the size of the uterus but also the anatomy and ureteric function. In this regards we tried to establish if this patient is at increased risk in pregnancy.

A PubMed search using the same terms as above but replacing “*infertility*” with “*pregnancy*” identified three papers. Bukowski et al. [4], after a long-term follow-up of 77 pregnancies, showed a slightly higher incidence of pyelonephritis in pregnant women with previous surgery compared to the general population. The authors recommended prophylactic use of antibiotics. Such findings were confirmed by others [5] on 64 pregnancy follow-ups. A 7% incidence of pre-eclampsia in pregnancy and 2 cases of transient ureteric obstruction requiring drainage were also reported [6]. The later group concluded that such patients are prone to recurrent UTI’s, progressive renal scarring and hypertension during pregnancy. No reports of anomalous ureteric tract at the time of caesarean section were identified, yet this could pose technical challenges to the obstetrician and suggests a urologist should be “on stand by”.

This case report draws attention to the existence of an anomalous ureteric tract, which might be diagnosed during laparoscopy in patients with previous childhood ureteric reimplantation for reflux. It illustrates the need for appropriate pre-operative assessment, awareness and vigilance during surgery, corroboration of history with most likely diagnosis as well as the use of adjuvant signs (vermiculation). Its value is augmented by the lack of published literature on such a condition, which might be encountered more frequently in the future. In hospitals where immediate access to an urologist is available an opinion during diagnostic surgery will be invaluable.

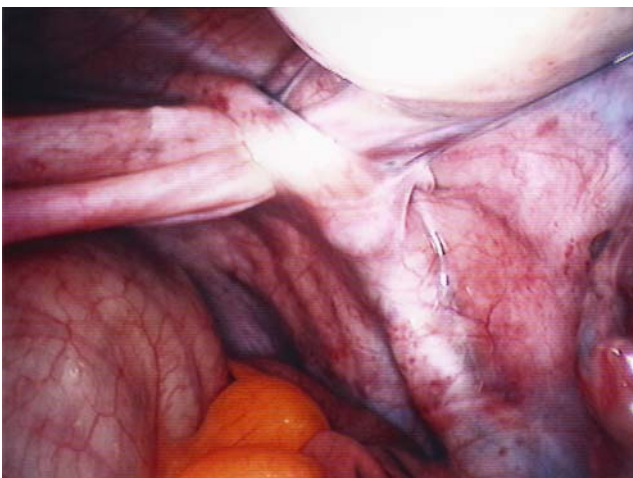


Fig. 2 Right ureter looping over the adnexa

References

1. Kaufman K, McGuire EJ, Baskin AM (1974) Viscus perforation: unusual complication of ureteroneocystostomy. *Urology* 4:728–729
2. Hussain IF, Magee TR, Faber RG, Malone PR (1997) Transperitoneal ureter following ureteric reimplantation: a rare cause of small bowel obstruction and infarction. *Br J Urol* 80:156
3. Kauer D, Graham D, Hansen K (2005) An unusual complication of ureteroneocystostomy discovered at laparoscopy. *JSL* 9:229–230
4. Bukowski TP, Betrus GG, Aquilina JW, Perlmutter AD (1998) Urinary tract infections and pregnancy in women who underwent antireflux surgery in childhood. *J Urol* 159:1286–1289
5. Austenfeld MS, Snow BW (1988) Complications of pregnancy in women after reimplantation for vesicoureteral reflux. *J Urol* 140:1103–1106
6. Mor Y, Leibovitch I, Fridmans A, Farkas A, Jonas P, Ramon J (2003) Late post-reimplantation ureteral obstruction during pregnancy: a transient phenomenon. *J Urol* 170:845–848