Gynecol Surg (2009) 6:273–275
DOI 10.1007/s10397-009-0495-1

CASE REPORT

Conservative management of a urachal remnant perforation during laparoscopic ovarian cystectomy

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Received: 27 April 2009 / Accepted: 13 May 2009 / Published online: 13 June 2009

Abstract Complications associated with persistent urachal remnant disease have been well documented in neonates and more recently in adults. These include laparoscopic perforation. The case has previously been made for conservative management of small symptomatic urachal remnants in young infants and also for conservative management of iatrogenic cystotomies in the absence of overt sepsis using assisted bladder drainage and prophylactic antibiotics. However, to our knowledge, there has been no recent case of successful conservative management of laparoscopically perforated urachal remnant in an adult. This case describes the incidental perforation of a suspected urachal remnant in an adult female which resulted in an infected anterior abdominal wall collection. The patient was treated with assisted bladder drainage and intravenous antibiotics. Evidence of healing was demonstrated 4 weeks later using a cystogram.

Keywords Urachal · Remnant · Laparoscopy · Conservative · Perforation

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Case report

A 29-year-old female with no previous medical or surgical history presented with dysmennorrhoea and hirsutism. Ultrasound demonstrated a 6-cm cyst on her right ovary, with appearances suggestive of a dermoid. She was referred to secondary care for right-sided abdominal pain and admitted for laparascopic ovarian cystectomy. A 6–7-cm right-sided dermoid cyst was removed via the suprapubic port with copious washout. The procedure was otherwise uneventful.

Post-operatively, she was unable to pass urine and required catheterisation. The next day, she developed a right-sided, erythematous and oedematous rash involving the right labia majora. This was initially thought to be an allergic chemical peritonitis from the washout fluid which was treated with chlorpheniramine and steroids. She then became pyrexial and was treated with co-amoxiclav for urinary tract infection and cellulitis. She experienced delayed return of voiding until day 5 post-operatively when she was discharged on oral antibiotics with some improvement in her rash.

She then presented 2 days later with abdominal pain and distension with vomiting. Examination revealed a grossly distended abdomen with features of tense ascites and a persistent rash. A clear fluid exudate was noted at the umbilical port scar. Laboratory analysis was consistent with a sample of urine. She was recatheterised due to ongoing voiding difficulties.

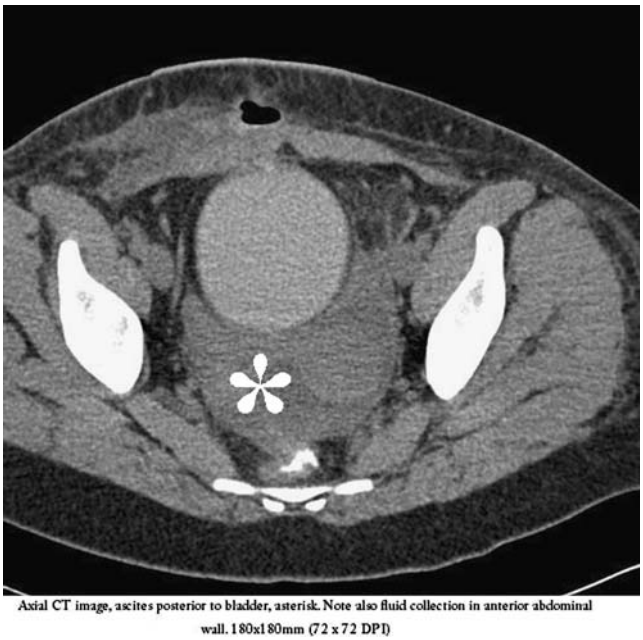

Fig. 1 Axial CT image, ascites posterior to bladder, *asterisk*. Note also fluid collection in anterior abdominal wall. 180×180 mm (72×72 DPI)

Imaging

Ultrasound demonstrated a large volume of peritoneal fluid and a fluid collection in the anterior abdominal wall and further evaluation with computed tomography (CT) scan following positive oral contrast to opacify the bowel was arranged. Due to dehydration and elevated serum creatinine the examination was performed without intravenous contrast to avoid the risks of contrast mediated nephropathy. Instead, 2% low osmolar iodinated contrast was instilled into the bladder via the urethral catheter. CT confirmed the presence of a large volume of free peritoneal fluid (Fig. 1).

A track of contrast was visible from a 6-mm defect in the anterosuperior margin of the bladder to the region of the midline port site on the inferior aspect of the umbilicus where there was a small collection within the anterior abdominal wall containing air and fluid. There was a very fine band of soft tissue density running parallel to this track, and the appearances raised the possibility of injury to a urachal remnant [1] (Fig. 2).

The patient was discharged 6 days after readmission once her umbilical discharge had ceased with a urinary catheter in situ. A cystogram performed 4 weeks later confirmed no residual leak. The catheter was removed, and the patient experienced no further voiding difficulties.

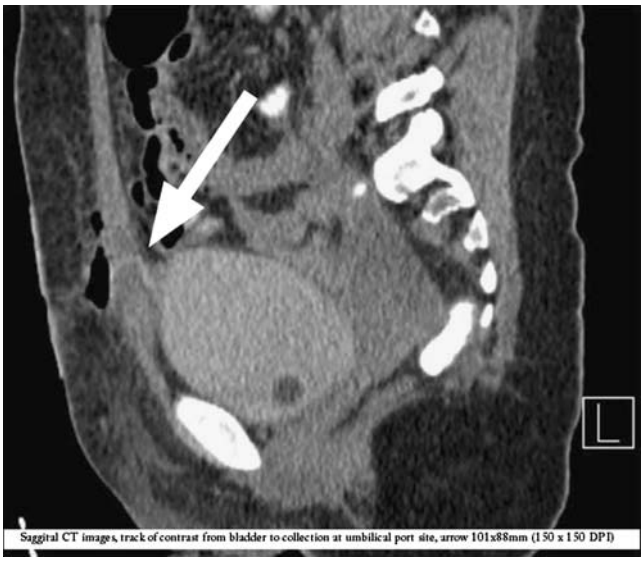

Fig. 2 Saggital CT image, track of contrast from bladder to collection at umbilical port site. 158×137 mm (96×96 DPI)

Discussion

This case highlights a rare but manageable complication of laparoscopic surgery. Clinical clues as to the likely diagnosis in this case were the patient's persistent difficulties passing urine post-operatively, the distribution of the rash and, finally, discharge from the umbilicus. Differentials included chemical peritonitis and cellulitis.

The urachus is formed during embryological development from the remnant of the vesico-urethral portion of the urogenital sinus. In the neonate, it becomes the median umbilical ligament, a fibrous cord connecting the apex of the bladder to the umbilicus, lying in the deep surface of the anterior abdominal wall. It is bordered anteriorly by the transversalis fascia and posteriorly by the peritoneum [2, 3].

Many congenital anomalies involving the urachus are known, including urachal sinus, urachal cysts and patent urachus. Patent urachal remnant in the neonate may present with urination from the umbilicus or umbilical discharge if there is a sinus or cyst [2]. Management of symptomatic urachal abnormalities is usually surgical involving laparoscopic radical excision of the patent urachus [4]. However, conservative management has been advocated in patients of less than 6 months of age with small urachal remnants using assisted bladder drainage [5].

Cases of persistent urachal remnant and associated complications have been well documented in neonates, but cases found in adult life are rare. Most cases documented have advocated laparoscopic radical excision of the patent urachus [6, 7]. The authors have found two documented cases of perforation of a previously undiagnosed urachal remnant in an adult at laparoscopy in English

language papers. In one of these cases, the patient presented 2 days after a diagnostic laparoscopy with serous umbilical discharge. A cystogram confirmed communication between bladder and umbilicus. Treatment was with prophylactic oral antibiotics and catheterisation. Normal bladder function returned after 2 weeks [8]. In the second, also following a diagnostic laparoscopy, the patient developed generalised peritonitis within 24 h of the procedure, and the remnant was excised at emergency laparotomy [9]. In this case, clinical presentation differed due to the unusual complication of an anterior abdominal wall collection causing a rash, for which intravenous antibiotics seemed to be effective.

Although most cases of iatrogenic bladder injury at laparoscopy are managed surgically, conservative management has been advocated in comparable situations. Angle et al. [10] described two cases of incidental cystotomy during primary trocar insertion at laparoscopy. These were both treated successfully with Foley catheterisation. Alperin et al. [11] described a series of post-hysterectomy cystotomies diagnosed post-operatively which also were successfully managed with assisted bladder drainage. They recommended that such injuries may be treated conservatively in the absence of infectious morbidity with radiological confirmation of healing.

In this case, as the perforation was uncomplicated and there was no evidence of infected urachal tissue, urologists advocated a conservative approach. We hope this case report will be a useful addition to the literature on this rare complication of laparoscopic surgery.

Conflict of interest There is no actual or potential conflict of interest in relation to this article.

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