Journal of Pediatric Urology (2014) 10, 193.e1—193.e3

Journal of Pediatric Urology

VIDEO BANK

Retroperitoneoscopic left upper moiety heminephroureterectomy for dribbling incontinence

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Received 27 August 2013; accepted 18 September 2013
Available online 16 October 2013

KEYWORDS
Retroperitoneoscopic;
Upper pole heminephrectomy;
Ectopic ureter;
Incontinence

Abstract A 7-year-old girl underwent a prone, retroperitoneoscopic left upper moiety heminephroureterectomy for a non-functioning upper moiety associated with a dilated, ectopic ureter. The dilated ureter was noted prenatally, but postnatal investigations failed to demonstrate the duplex system. The child remained asymptomatic until she represented at 6 years of age, with dribbling of urine. She went on to have an ultrasound scan, dimercaptosuccinic acid and magnetic resonance urogram, which identified a grossly-dilated fluid-filled structure in proximity of the left kidney, but failed to demonstrate the small non-functioning left upper moiety. A computed tomography urogram was more helpful in establishing the diagnosis. Retroperitoneoscopy via three 5-mm ports allowed clear visualisation of both the left duplex ureters, as well as the small non-functioning upper moiety, which had been challenging on the preoperative imaging. The procedure is described in the accompanying video. The child was discharged home the following day and has been completely well and dry at 6 months' follow-up.

Introduction

We report the surgical management of a 7-year-old girl who presented with intermittent dribbling incontinence after being fully toilet-trained. She had been diagnosed prenatally with a dilated left ureter, which was investigated postnatally. The left kidney was not dilated and was thought not to have a duplex configuration on initial imaging. As the child was asymptomatic, no further

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1477-5131/$36
http://dx.doi.org/10.1016/j.jpurol.2013.09.021

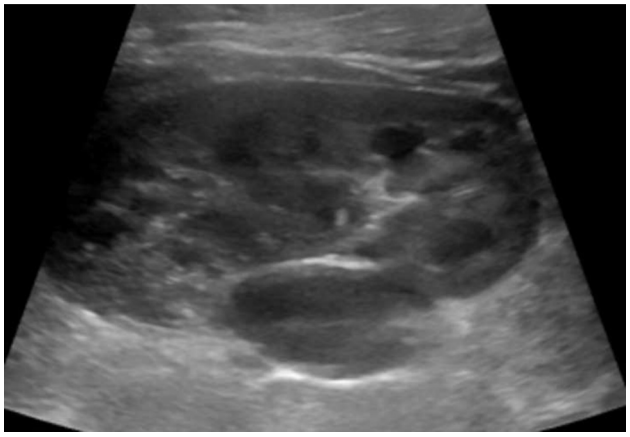

Figure 1 Ultrasound image of the patient's left kidney which was reported as normal but in proximity of a "fluid-filled structure" which did not appear to communicate with the renal collecting system.

investigations were organised. Following her second presentation, a repeat ultrasound scan showed the presence of a non-dilated left kidney and a "distended fluid-filled structure" consistent with a dilated ectopic ureter (Fig. 1). She went on to have an intravenous urogram, which was, again, reported as showing normal renal anatomy and drainage bilaterally (Fig. 2). A dimercaptosuccinic acid (DMSA) scan did not show any irregularities in the left kidney, and equal differential function. A magnetic resonance urogram identified the fluid-filled structure, but did not show a clear connection to an upper moiety, and also failed to show its distal insertion. A CT urogram was more helpful

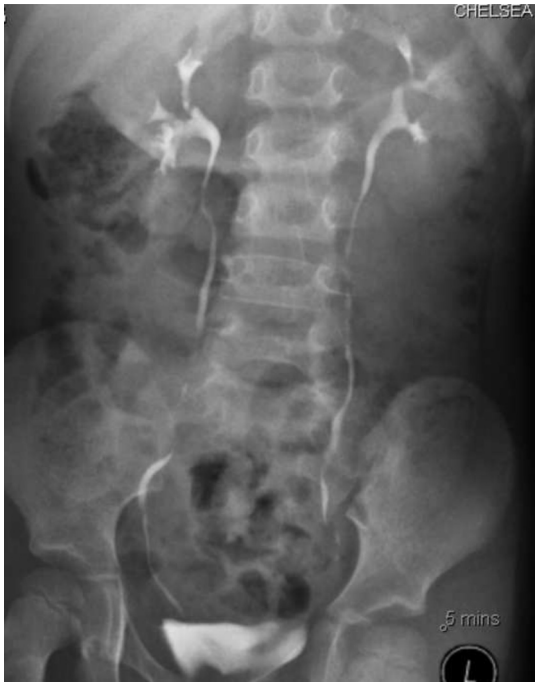

Figure 2 Intravenous urogram, which was initially reported as showing normal structure and drainage of both kidneys with no evidence of duplex configuration.

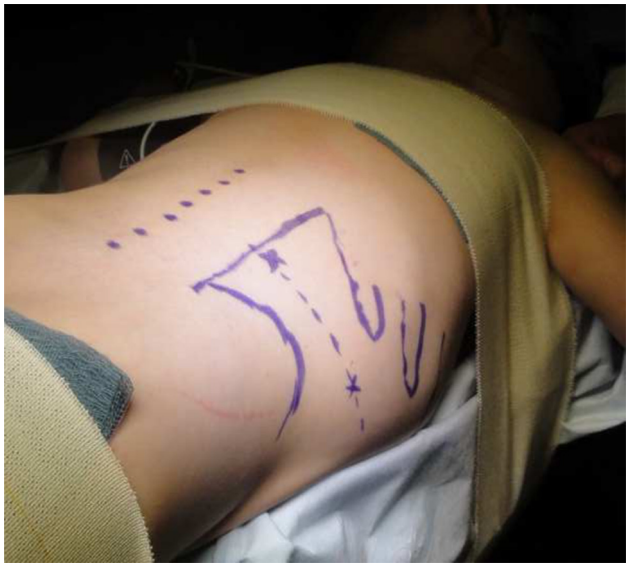

Figure 3 Prone position on the operating table with surface markings. The X's mark the site of the first two ports inserted.

and was able to identify the small non-functioning left upper moiety connecting to the dilated upper moiety ureter, which could be traced all the way down to the pelvis. Its insertion could not be clearly identified on computed tomography (imaging in accompanying video). It was also not possible to locate the ectopic ureteric orifice at cystovaginoscopy prior to surgery. A retroperitoneoscopic left upper moiety hemi-nephroureterectomy was advised.

Supplementary data related to this article can be found online at http://dx.doi.org/10.1016/j.jpurol.2013.09.021.

Technique

The child was positioned prone over two pillows placed beneath her chest and pelvis, allowing the abdomen to "drop" in-between (Fig. 3). The retroperitoneal space was developed as previously described using the finger of a size 8 glove secured over the tip of a 12-Fr feeding tube and inflated with 180 ml of air (Fig. 4) [1]. Three 5-mm ports

Figure 4 Balloon utilised to create retroperitoneal space.

were used. Operative technique is described in the accompanying video.

Results

The child made an uneventful post-operative recovery with no morphine requirements. She was discharged home the following day. A post-operative ultrasound 3 months after the surgery showed a normal configuration of the remainder of the left kidney. The option of a post-operative DMSA was discussed to ensure normal function of the lower moiety [2], but in view of the normal ultrasound scan the child's parents declined this investigation. The child remains well and completely dry at 6-month follow-up.

Conclusion

The prone retroperitoneoscopic approach allowed clear visualisation and excision of the small non-functioning upper moiety, which was very difficult to identify pre-operatively. The ectopic ureter could be traced all the way down to the common tunnel and divided safely, while maintaining the lower moiety ureter in good view. It was not necessary to identify the point of insertion of the ectopic ureter.

Conflict of interest

None.

Funding

None.

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