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Patent urachus with bladder prolapse

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ABSTRACT

We report a term neonate with a congenital patent urachus with bladder prolapse. Initial antenatal fetal morphology ultrasound at 13 weeks gestation revealed a large midline pelvic cyst communicating with the bladder which disappeared on subsequent 23 week ultrasound and instead a small umbilical mass was seen, suspicious of omphalocoele. At birth, an umbilical eversion of the bladder dome through a patent urachus was found and operated on a second day of life with excision of the prolapse and bladder closure. There were no other co-existing anomalies and postoperative complications.

With increased reporting on bladder prolapse through a patent urachus, we present a case report with a brief review of published literature.

The prevalence of urachal anomalies is about 1%. Of that only 1.5% are diagnosed with patent urachus [1]. With advances in medical imaging, and increased antenatal detection of fetal anomalies, prenatal detection of urachal anomalies occurs more often. A disappearing midline umbilical cord cyst raises the suspicion of urachal anomalies. The spectrum of described urachal anomalies includes urachal cysts or sinus, bladder diverticulum and a patent urachus. Bladder prolapse through the patent urachus, hence may also be considered on a spectrum of urachal anomalies. There have been few cases reported in literature. We present one such case with a brief review of literature on umbilical eversion/prolapse of bladder via patent urachus.

1. Case report

A 37-year-old woman, gravida 2, para 1 had a medical history that included a previous gastric sleeve operation, polycystic ovarian syndrome and anxiety. She had had a previous healthy large for gestational age fetus born by caesarean section at 38 weeks gestation, with a pregnancy complicated by pre-eclampsia postpartum. She conceived with ovulation induction and in-utero insemination. Her booking Body Mass Index was 35 kg/m^2. Her medications were rabeprazole, sertraline and mirtazapine, and she was commenced on aspirin 100 mg at the end of the first trimester. Gestational diabetes mellitus was diagnosed at 30 weeks and controlled adequately with Metformin. Cell free DNA screening for aneuploidy was undertaken at 12 weeks gestation and was low risk. On antenatal ultrasound at 13 weeks of gestation an otherwise structurally normal male fetus was found to have an enlarged fetal bladder measuring 8.5 × 7.5 mm communicating with a large cyst in the base of the umbilical cord. Amniocentesis at 17 weeks gestation showed normal CGH array in a male fetus.

The 19 week morphology ultrasound again showed the fetal bladder communicating with a cystic structure measuring 25 × 25 × 60 mm, presumed to be a vesico-allantoic cyst. No renal anomaly or other abnormality was detected; there was a 3 vessel cord and the amniotic fluid was normal (Fig. 1).

On the antenatal ultrasound at 23 weeks no fetal bladder was identified, but there was an umbilical mass measuring 27 × 18 × 35 mm visible at the cord insertion, and normal amniotic fluid. The presumed diagnosis was of a ruptured cyst/patent urachus.

At 27 weeks, the fetal bladder was seen to be present within the fetal pelvis, and no pelvic cyst was seen. There was a visible mass at the umbilicus, with a presumed diagnosis of an omphalocoele, with a differential diagnosis of the remnants of the ruptured cyst (Fig. 2). That was monitored closely with serial ultrasound but remained unchanged. Kidneys, external male genitalia, bladder, other organs, and amniotic fluid were normal on all further scans.

The male baby was delivered via Caesarean section for previous caesarean section/large for gestational age fetus at 39 weeks

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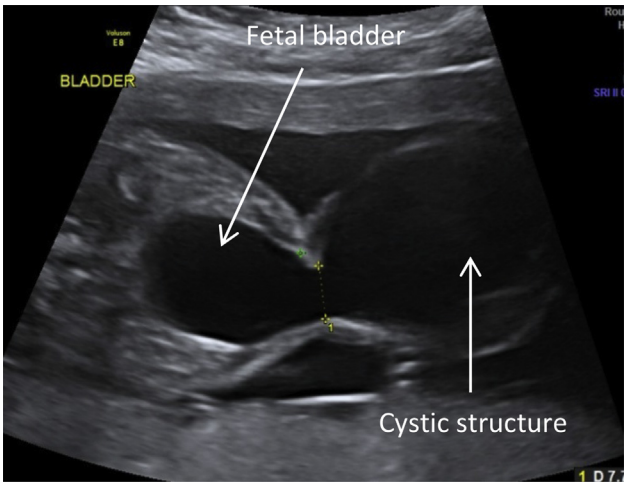

Fig. 1. 19 weeks fetal ultrasound in axial plane, showing the bladder communicating with a cystic structure external to the fetal abdomen.

gestation weighing 4330 g with Apgar scores of 9 at 1 min and 10 at 5 min. The morphologically normal appearing baby had a round shaped glistering mass with the appearance of mucosa in midline just below the umbilical cord prolapsing in a somewhat doughnut fashion (Fig. 3). That was reducible and the opening tracked down at an angle inferiorly towards the pelvis when inspected with sterile gloved finger. The base of the cord above the prolapse was wide and splayed. The position of cord base was equidistant from the xiphisternum and pubic symphysis. External genitalia were normal with bilaterally descended testes. No symphysis pubis diastasis was noted.

The baby passed meconium and urine shortly after birth and remained self-ventilating and oxygenating on room air. Urinary tract ultrasound performed on day one showed two normal kidneys and ureters. Bladder was not visible for the dressings. The patient had no skeletal abnormalities on x-ray.

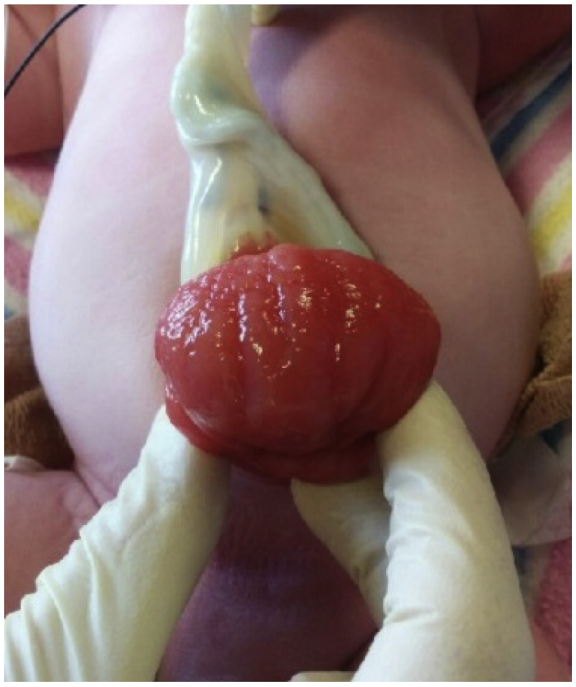

Fig. 3. Appearance of prolapsing mucosa.

A patent urachus with bladder prolapse was strongly suspected. Prolapsing mucosa was covered with sterile plastic sheet and dressing to protect it from air exposure and the baby was commenced on oral feeds and IV antibiotics.

The patient was taken to the operating theatre the next day. At this stage the prolapsing bladder mucosa looked more oedematous and could not be easily reduced. The case was started with cystoscopy which showed normal urethra, opened bladder neck, normal looking bladder mucosa and two orthotopic ureters. The defect in the bladder dome was visualised and was around 2 cm in

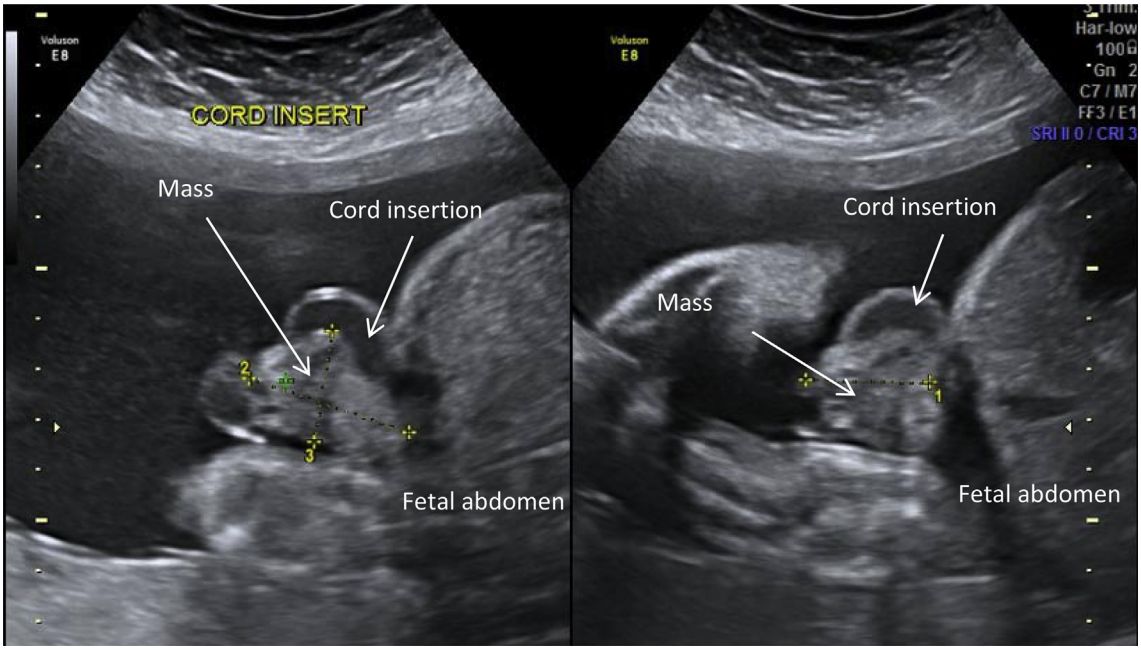

Fig. 2. 27 weeks fetus in axial (left) and sagittal planes (right) showing a mass measuring 22 × 24 × 33 mm resembling an omphalocoele at the umbilical cord insertion into the fetal abdomen.