

# Iatrogenic Abdominal Wall Defect from Chronic Evisceration of Intestine: A Complication of Fetal Vesico–amniotic Shunt

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## Abstract

Vesico-amniotic shunt is one of the methods used to relieve fetal bladder obstruction in some cases of lower urinary tract obstruction. We highlight a 35 week gestation baby boy, who developed acquired abdominal wall defect following placement of the antenatal vesico-amniotic shunt. It is one of the rare complications of placement of vesico- amniotic shunt.

**Keywords** Fetal; Lower urinary tract obstruction; Abdominal wall defect

## Introduction

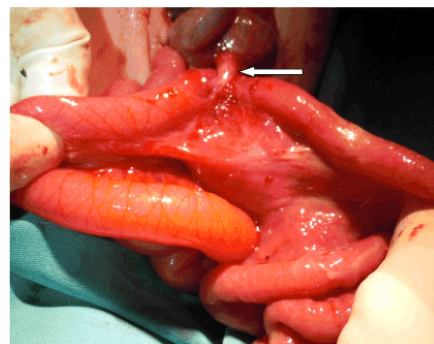
Lower Urinary Tract Obstruction (LUTO) in fetus if left undiagnosed can lead to grave complications in newborn. With recent advancement in fetal management, LUTO can now be diagnosed antenatally. Creation of vesico-amniotic shunt is one of the treatments of choice. This procedure is not without complications.

## Case Report

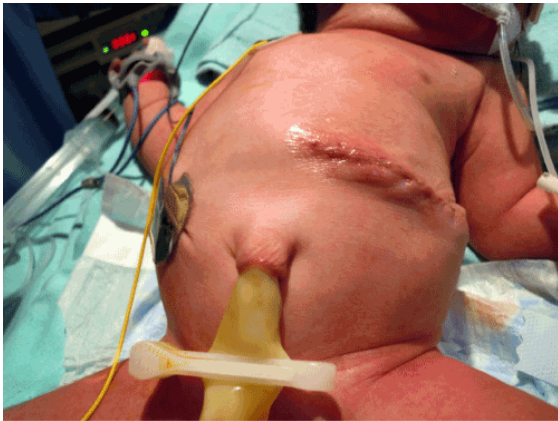
We highlight a male baby, born at 35 weeks of gestation via emergency LSCS who developed an unusual complication from a chronic dislodgement of catheter used for vesico-amniotic shunt procedure. Antenatally, at 19 weeks of gestation, the mother was noted to have oligohydromnios. Detail antenatal scan confirmed the finding and revealed that the fetus also had a left multicystic kidney and bilateral hydronephrosis. LUTO was diagnosed in the fetus and decision was made for fetal intervention; a vesico-amniotic shunt was performed at 22 weeks of gestation. The shunt-catheter was noted to dislodge from the fetal bladder at 31 week of gestation. The oligohydromnios recurred and the pregnancy was terminated at 35 weeks. At birth the baby required immediate ventilation with high setting. He was not dysmorphic. There was a noticeable 2×2 cm round defect at the abdomen, above and to the left of the umbilicus. Small bowel eviscerated through the defect together with the shunt catheter (Figure 1-3). The bowels were twisted and dusky. He was also diagnosed with possible urethral hypoplasia after episode of anuria. Only a tip of the urinary catheter was able to admit into the urethra. Urgent bedside surgical repair was performed and intraoperatively, a band was noted across the bowel causing narrowing of the bowel. The bowel was also twisted at the axis. The bowel improved in color after released of the band and untwisting of the bowel. The abdominal defect was closed in layers and suprapubic catheter inserted. Despite the surgical intervention, the baby succumbed to the complication of pulmonary hypoplasia at day 3 of life.



**Figure 1:** Matted and dusky bowel with visible vesicoamniotic catheter.



**Figure 2:** Arrow showing a band across the bowel where the volvulus occurred.



**Figure 3:** Bedside surgical closure performed.

the formation of hernia. Placement of the shunt-catheter is usually put low in the bladder to avoid displacement. High placement will result in a defect in the puncture site when the bladder returns to pelvis after decompression [1]. Furthermore as the fetus grows in size, the defect will expand as well. In some cases, the herniation occurs as a result of increase intra-abdominal wall pressure or multiple puncture sites of the catheter. The most common complication reported was shunt migration and dislodged (20–60%) followed by shunt occlusion (10–25%), chorioamnionitis, preterm labour and miscarriage (1–2%). Bowel and bladder herniation have also been reported [2–4].

In our patient, the placement site was unusual and had resulted in iatrogenic abdominal wall defect with chronic evisceration of the small bowel. Despite the known complications from vesicoamniotic shunt procedure, the risk are well worth taking in view of the outcome of the fetus in general –unfortunately not so in our patient. Thus, selection criteria should be refined. Bedside intervention was essential in our case as the bowel was twisted and the baby was not able to be transferred to the operating theatre as he was on high setting ventilation.

## Discussion

Severe oligohydromnios has complications detrimental to fetal life such as pulmonary hypoplasia and deformations of face and extremities. LUTO is known to cause severe oligohydromnios. In view of this, fetal intervention has gained popularity and one of the commonest interventions is vesico-amniotic shunting. Vesico-amniotic shunting as treatment for LUTO is indicated if patient fulfills the criteria. It will relieve the fetal bladder obstruction and restore amniotic fluid dynamic and volume. This will prevent oligohydromnios and ultimately prevent pulmonary hypoplasia.

Like any other intervention, this procedure is not without complications. Several theories were proposed previously to explain

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