

EP05.48

Tow cases of non-survivable posterior urethral valves in a low-resource setting

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Introduction

Severe **fetal lower urinary tract obstruction (LUTO)** is a life-threatening prenatal condition in which ultrasound can identify both the diagnosis and markers of disease severity months before birth. **Posterior urethral valves (PUV)** are the most frequent cause in male fetuses ($\approx 63\%$) and are associated with high neonatal mortality and progression to end-stage renal disease in up to one-third of survivors.

We report two fatal cases diagnosed in a public tertiary hospital without access to fetal therapeutic programs.

Case N1

20 weeks' gestation with severe megacystis 67 mm, thickened bladder wall, bilateral hydronephrosis, hyperechogenic renal cortex. Posterior urethral dilatation was suspected on sagittal **keyhole sign** (*Figures 1a,b*). urinary biochemistry showed **urinary creatinine 7.18 mg/L** and **markedly elevated $\beta 2$ -microglobulin 5.96 $\mu\text{g/mL}$** , indicating severe tubular injury and poor renal prognosis. In the absence of vesico-amniotic shunting, **approximately 200 mL of fetal urine was drained by ultrasound-guided bladder puncture**. Despite transient decompression, the fetus died after 10 days (*Figures 1c,d*).

Case N2

Patiente referred at **33 weeks' gestation** with massive megacystis, severe bilateral upper urinary tract dilatation, anamnios and the classic **keyhole sign**, a hallmark sonographic feature of PUV. (*Figures 2a, b,c,*)

Cesarian section resulted in the birth of a male newborn (4400 g, Apgar 8/10) with massive abdominal distension. (*Figures 2d*)

Neonatal care revealed refractory hypoxemia due to pulmonary hypoplasia and severe renal failure, leading to death within one hour of life

Discussion/conclusion

These observations emphasize the prognostic value of **integrating ultrasound staging with fetal urinary biomarkers**. Early megacystis, renal echogenicity, oligohydramnios and elevated urinary $\beta 2$ -microglobulin identify fetuses at extremely high risk of pulmonary hypoplasia and irreversible renal damage. Evidence from studies evaluating fetal interventions, including the **PLUTO trial**, suggests that selected cases may benefit from intrauterine therapies such as vesico-amniotic shunting or fetoscopic valve ablation. However, the absence of these specialized procedures in many **low- and middle-income countries** perpetuates preventable mortality and underscores the need for **international fetal therapy networks and collaborative referral pathways**.

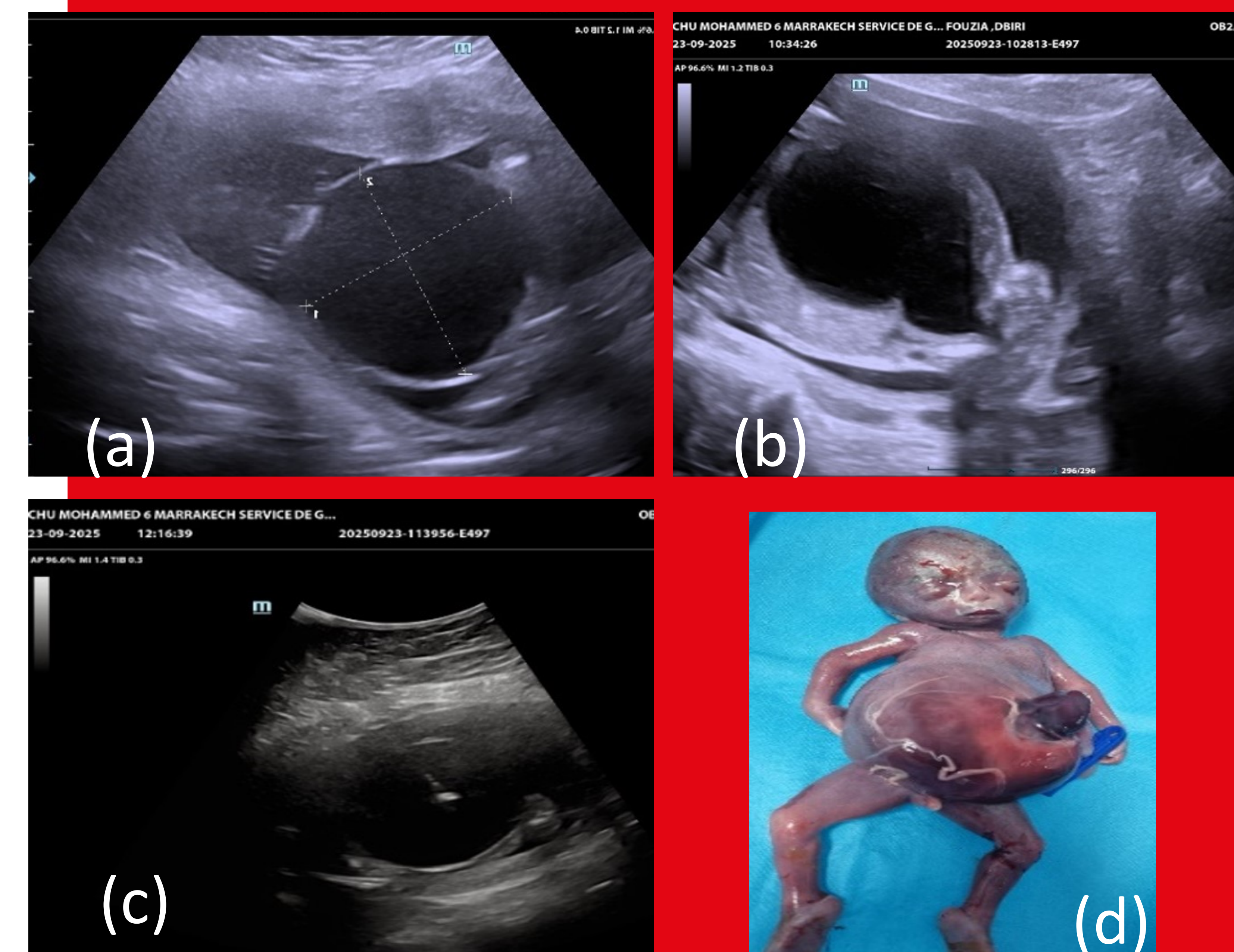


Figure 1: case 1

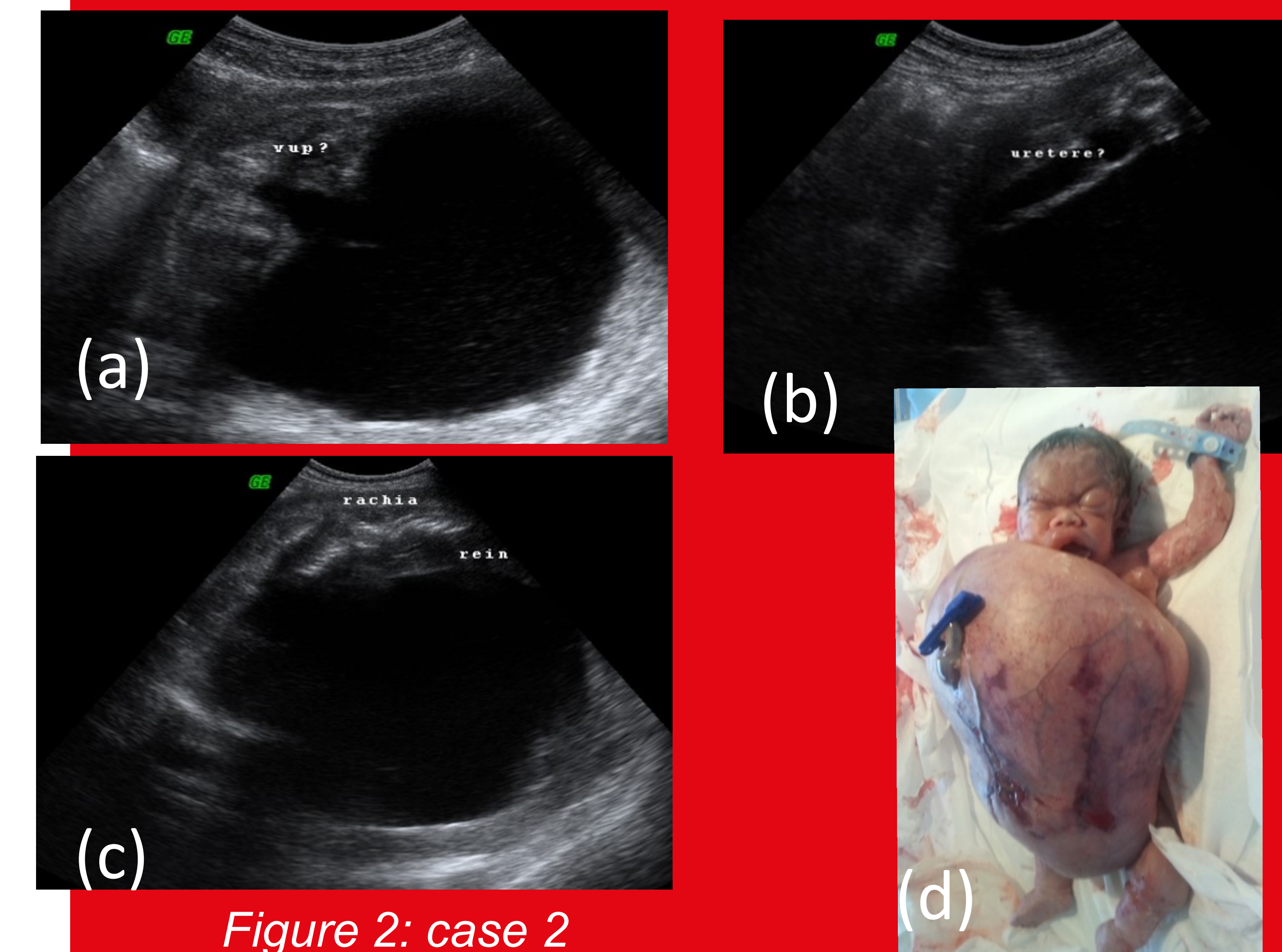


Figure 2: case 2