



Renal agenesis in the second trimester: the importance of the screening ultrasound scan in the first trimester

Romina-Marina Sima^{1,2}, Didel-Ionut Valcea², Mihaela Amza¹, Mircea-Octavian Poenaru^{1,2}, Liana Ples^{1,2}

1. Department of Obstetrics and Gynecology, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania; 2. "Bucur" Maternity, Saint John Hospital Bucharest, Romania;

Introduction

Fetal kidneys can be visualized ultrasound as early as 12 weeks of gestation during a detailed examination. Renal agenesis is most commonly diagnosed in mid-pregnancy and the main ultrasound sign is an **empty renal fossa**.

Case report

We present the case of a 28-year-old patient in her first pregnancy who came to our clinic for routine obstetric evaluation at 19 weeks of gestation. The patient did not present risk factors or history of significant pathologies. The patient underwent first trimester screening ultrasound scan which did not reveal any fetal anatomical abnormalities.

Ultrasound scan revealed the presence of a single live fetus with normal growth and **minimal amniotic fluid** (amniotic fluid index AFI 1.5 cm). We evaluated the fetal anatomy and the **kidneys were not visualized** (Figure 1), the **renal arteries** and the **urinary bladder** could not be identified. The ductus venosus had an abnormal wave appearance. Relative **cardiomegaly** was noted due to **pulmonary hypoplasia** (Figure 2). **Pericardial fluid** was present. **Cardiac contractility** was abnormal with the presence of significant **regurgitation** through both atrioventricular valves.

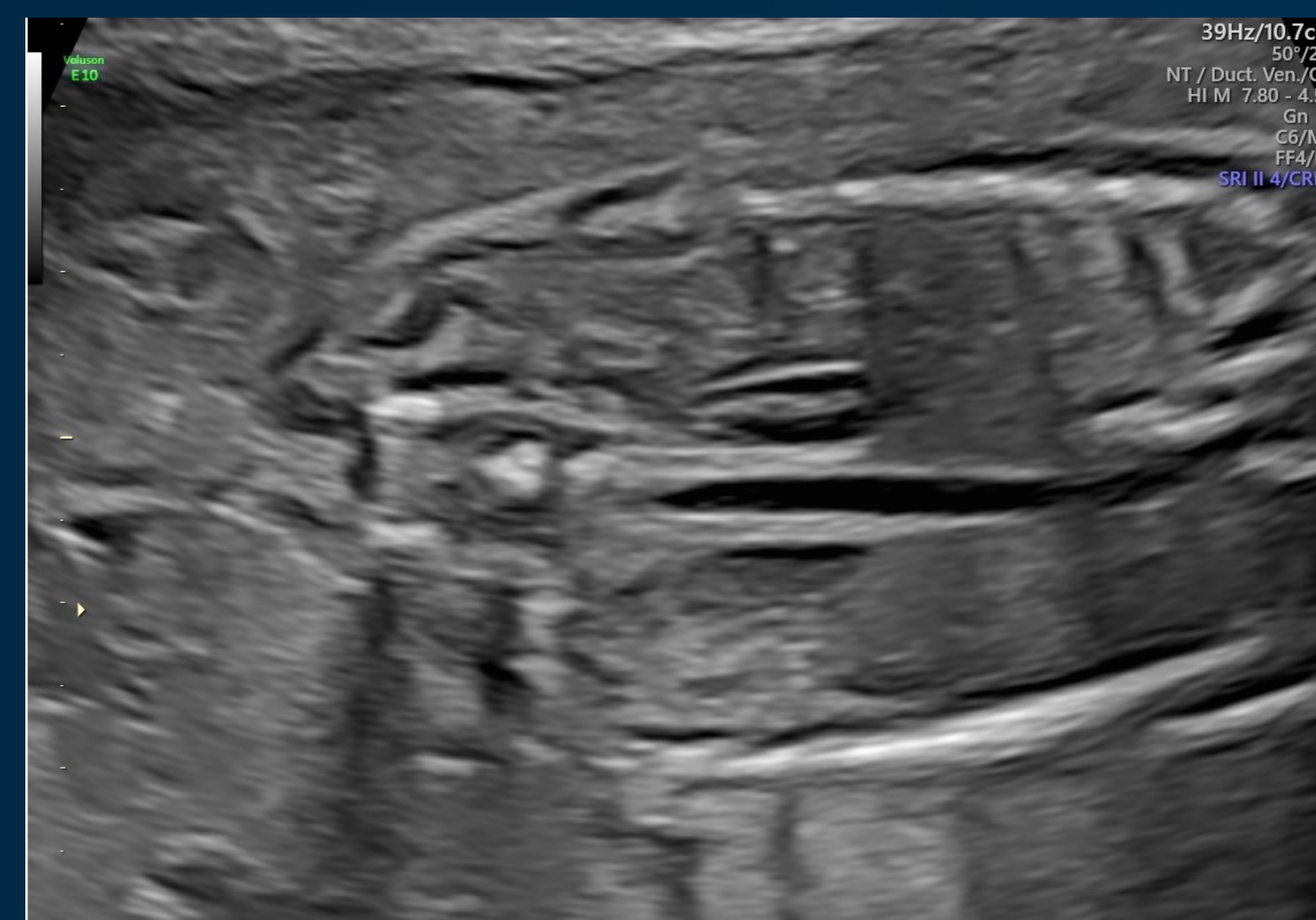


Figure 1. Empty renal fossa

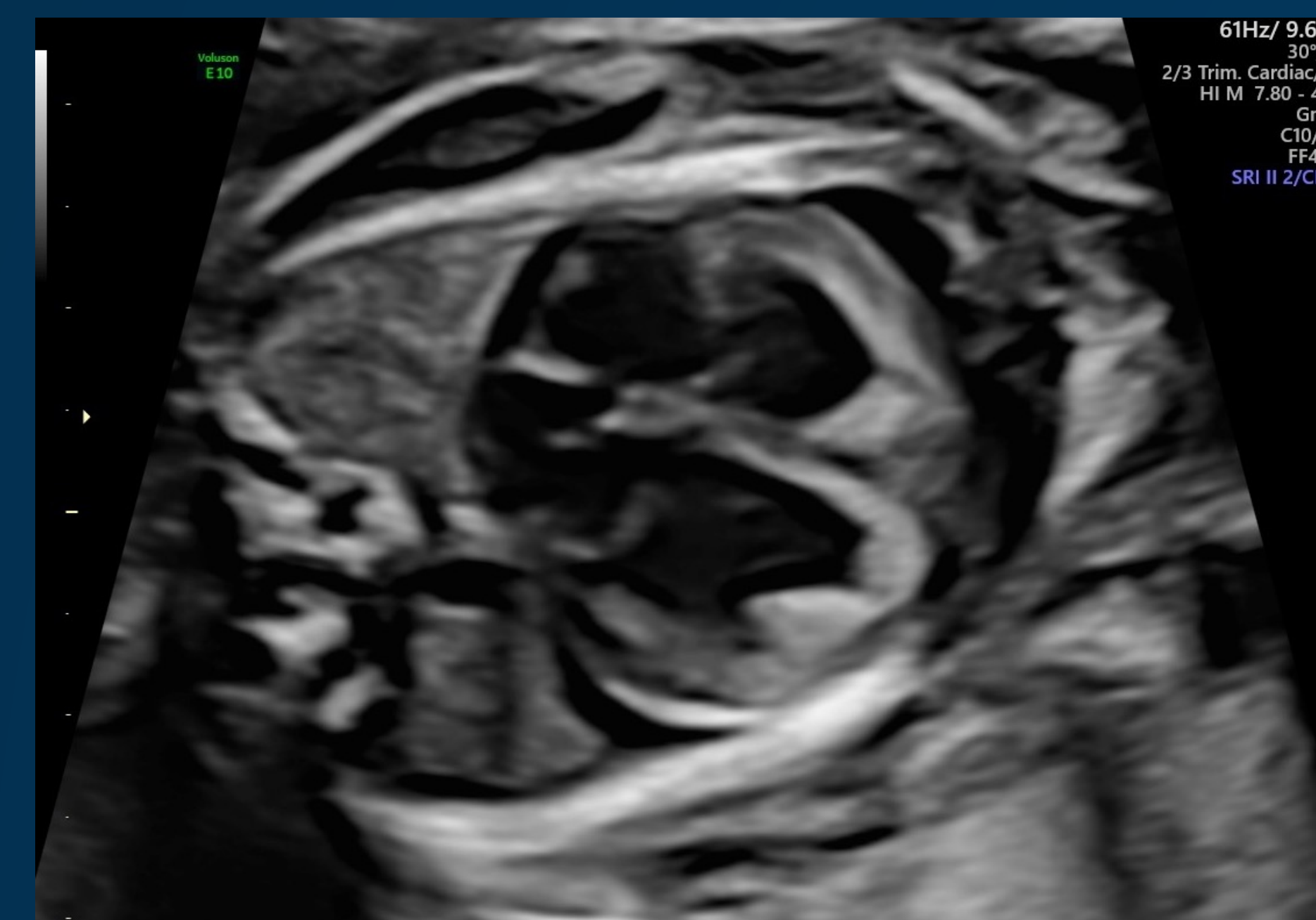


Figure 2. Cardiomegaly and pericardial fluid

We discussed with the patient the diagnosis, evolution, prognosis and complications associated with the identified anomalies. Following an evaluation by the fetal ultrasonography specialist committee, an elective termination of the pregnancy was decided. The patient's evolution was favorable after the abortion. The anatomopathological evaluation confirmed the absence of kidneys.

Conclusion

First trimester screening ultrasound is important in detecting significant fetal abnormalities. The presence of amniotic fluid and a urinary bladder in the first trimester does not exclude possible renal agenesis. Early detection of renal abnormalities can reduce maternal morbidity and the emotional impact on the mother and the medical team.