Unilateral multicystic renal dysplasia – complete prenatal involution

Kilijánová D\textsuperscript{1}, Smetanová D\textsuperscript{1}, Březinová S\textsuperscript{1}, Hynek M\textsuperscript{1}, Rašková D\textsuperscript{1}, Prosová B\textsuperscript{2}, Holubová Z\textsuperscript{3}
\textsuperscript{1}Gennet, Center for Fetal Medicine and Reproductive Genetics, Prague, Czech Republic
\textsuperscript{2}Department of Radiology, 2\textsuperscript{nd} Faculty of Medicine, Charles University and Motol University Hospital, Prague, Czech Republic
\textsuperscript{3}Department of Pediatrics, 2\textsuperscript{nd} Faculty of Medicine, Charles University and Motol University Hospital, Prague, Czech Republic

\textbf{Objective:} Unilateral multicystic dysplastic kidney (MCDK) is one of the most common kidney abnormalities diagnosed by ultrasonography at 20–22 weeks of pregnancy. Its incidence is reported in the range of 1:3640–4300 births. In the literature, partial involution of the affected kidney is reported in 25–70\% and complete involution in 19–47\% during the first five years of life.

\textbf{Methods:} Prenatal ultrasonographic examinations were performed at the Fetal Medicine Centre Gennet, Prague, by two specialists in prenatal diagnosis using Voluson E10 GE device. MRI was performed at the Department of Imaging Methods of the 2\textsuperscript{nd} Medical Faculty of the Charles University and Faculty Hospital Motol, Prague, using Achieva 1.5T Philips device and evaluated by a paediatric radiologist. The postnatal ultrasonographic examination was performed at the Department of Imaging Methods of the 2\textsuperscript{nd} Medical Faculty of the Charles University and Faculty Hospital Motol, Prague, by a paediatric radiologist using APLIO MX Toshiba device.

\textbf{Results:} Our patient was a 31-year-old woman, tercigravida/secundipara, with negative combined test: PAPP-A 1.26 MoM, β-hCG 2.5 MoM, NT 1.5 mm - 0.66 MoM, risk of T21 1: 6650. Results of the integrated test at 16 weeks showed AFP 1.48 MoM, t-hCG 1.3 MoM and μE3 1.05 MoM, risk of T21 1 : 100 000. Multicystic dysplasia of the right kidney with multiple small cysts was diagnosed during ultrasonographic examination at 20 weeks. The left kidney was of normal appearance and size. The amount of the amniotic fluid was normal. No associated anomalies were diagnosed. MRI was performed to validate the finding and confirmed multicystic dysplasia of the right kidney. The fetal size corresponded to the week of pregnancy and AMC was not performed. Ultrasonographic examination at 31 weeks showed the left kidney of normal size and appearance in a typical location. However, nor the right kidney, neither the renal artery appeared. The amount of the amniotic fluid was normal. The delivery was spontaneous at 39+3 weeks, a female newborn, 3350 g/ 51 cm. Postnatal ultrasonographic examination did not show the right kidney in normal or other location. The left kidney of normal size and shape appeared in typical location.

\textbf{Conclusion:} Partial or complete involution of majority of unilateral MCDK occurs in childhood. Cases of complete prenatal involution are reported sporadically. Our case report describes a disappearance of a unilateral multicystic dysplastic kidney between weeks 20 and 31. Thus, we should consider a possibility of complete prenatal involution of MCDK when consulting the patient at the time of the first diagnosis. The ultrasonographic foetal follow-ups at 30–32 weeks and before the delivery should be performed by a specialist. The childbirth should occur at a specialized centre where examination of a newborn and its further follow-up by a child nephrologist are available.