

HDlive Silhouette Features of Multicystic Dysplastic Kidney

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ABSTRACT

We present our experience of HDlive silhouette features of a fetal multicystic dysplastic kidney (MCDK) at 31 weeks and 1 day of gestation. Two-dimensional sonography revealed a left MCDK larger than the right normal kidney. HDlive silhouette showed multiple cysts of various sizes in the left big kidney on the left side of the spine. HDlive Flow with HDlive silhouette clearly demonstrated spatial relationships between bilateral kidneys and intra-abdominal vasculatures. HDlive silhouette may provide information on assessing the spatial recognition of fetal MCDK.

Keywords: HDlive Flow, HDlive silhouette, Multicystic dysplastic kidney.

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There have been numerous studies on the antenatal diagnosis of a multicystic dysplastic kidney (MCDK) using different ultrasound modalities such as three-dimensional (3D) ultrasound, 3D inversion mode, HDlive, superb microvascular imaging, and *SlowflowHD*.¹⁻⁵ However, to the best of our knowledge, there has been no report on the antenatal HDlive silhouette diagnosis of fetal MCDK. In this report, we present our experience of HDlive silhouette features of fetal MCDK.

In a case of unilateral MCDK at 31 weeks and 1 day of gestation, the left MCDK was larger than the right normal kidney (Fig. 1). HDlive silhouette showed multiple cysts of various sizes in the left big kidney on the left side of the

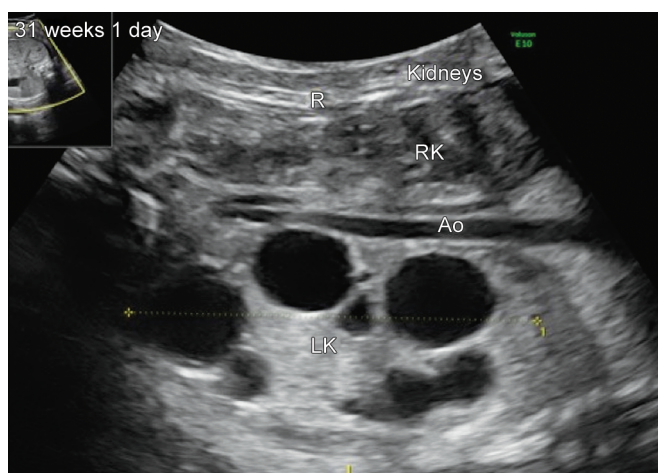


Fig. 1: Two-dimensional sonographic image of a left multicystic dysplastic kidney at 31 weeks of gestation. The left renal length is 76.4 mm, whereas that of the right kidney is 41.1 mm (mean: 39 mm, 5–95 percentile range: 33–46 mm).²³ Ao, aorta; LK, left kidney; RK, right kidney

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spine (Fig. 2). HDlive Flow with HDlive silhouette clearly demonstrated spatial relationships between bilateral kidneys and intra-abdominal vasculatures (Fig. 3).

HDlive silhouette shows vitreous-like clarity of the fetal surface structure,⁶ intracranial abnormalities,⁷⁻⁹ heart,¹⁰ intra-abdominal organs,¹¹⁻¹⁵ and placental abnormality.^{15,16} In this report, the HDlive silhouette depicted multiple cysts of various sizes in the left big kidney on the left side of the spine. This technique may provide information on assessing the spatial recognition of fetal MCDK.

HDlive Flow with HDlive silhouette combines the advantages of a spatial view of the fetal vasculature in addition to visualization of surrounding structures.¹⁷ This modality

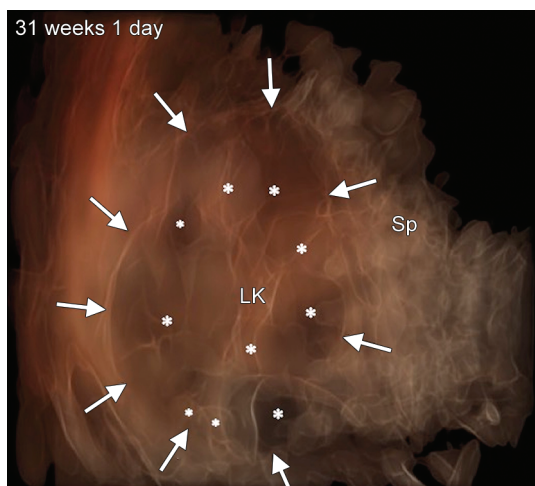


Fig. 2: HDlive silhouette image of a left multicystic dysplastic kidney (arrows) at 31 weeks of gestation. Multiple cysts (*) of various sizes can be clearly noted. LK, left kidney; Sp, spine

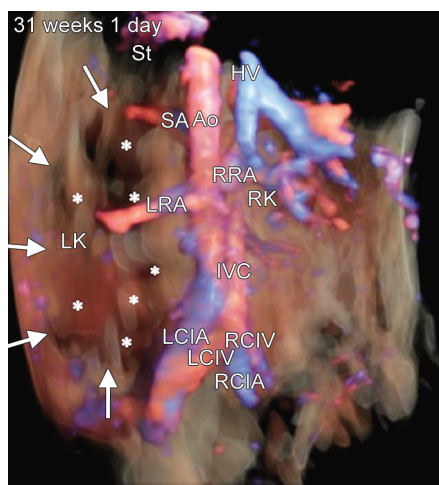


Fig. 3: HDlive Flow with HDlive silhouette image of a left multicystic dysplastic kidney (arrows) at 31 weeks of gestation. Multiple cysts (*) of various sizes in the left kidney (LK) can be noted. Ao, aorta; HV, hepatic vein; IVC, inferior vena cava; LRA, left renal artery; LCIA, left common iliac artery; LCIV, left common iliac vein; RCIA, right common iliac artery; RCIV, right common iliac vein; RK, right kidney; RRA, right renal artery; SA, splenic artery; St, stomach

clearly showed fetal intracranial,⁷¹⁸ intrathoracic,¹⁹ and intra-abdominal vasculature and organs.^{20–22} In our investigation, HDlive Flow with HDlive silhouette depicted clear spatial relationships between unilateral MCDK, a contralateral normal kidney, and intra-abdominal vasculatures. This mode may provide useful diagnostic information on intra-abdominal organ vasculature and structures.

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