HDlive Silhouette for Diagnosis of Congenital Dacryocystocele

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ABSTRACT

We present our experience of diagnosing unilateral congenital dacryocystocele using HDlive Silhouette at 32 weeks and 6 days of gestation. A right congenital dacryocystocele was noted in a routine third-trimester fetal anomaly scan. HDlive Silhouette clearly showed the spatial relationships among the dacryocystocele, lens, eyeball, and optic nerve. This technique may provide additional information for the precise assessment of fetal orbital and periorbital anatomical structures.

Keywords: Antenatal diagnosis, Congenital dacryocystocele, HDlive Silhouette, Orbital anatomy.

Donald School Journal of Ultrasound in Obstetrics and Gynecology (2020): 10.5005/jp-journals-10009-1631

PICTURE OF THE MONTH

There have been only two reports on three-dimensional (3D) ultrasound evaluation of a congenital dacryocystocele *in utero*.^{1,2} However, these images were only surface-rendering or tomographic slice images. Recently, Castro et al.³ reported 3D reconstruction of a congenital dacryocystocele using magnetic resonance imaging. We could easily understand the dacryocystocele and its surrounding orbital and nasal structures using this technique.

HDlive Silhouette is a recent technology that shows crystal-like images of the fetus and organs and can clearly depict the inside of structures.^{4–6} To the best of our knowledge, there has been no report on HDlive Silhouette evaluation of a congenital dacryocystocele *in utero*. In the current study, we present our experience of diagnosing a unilateral congenital dacryocystocele of the fetus using HDlive Silhouette at 32 weeks and 6 days of gestation.

A right congenital dacryocystocele was noted in a routine third-trimester fetal anomaly scan (Fig. 1). HDlive Silhouette (Voluson E10 BT20; GE Healthcare Japan, Tokyo, Japan) clearly showed the spatial relationships among the dacryocystocele, lens, eyeball, and optic nerve (Fig. 2). We could easily recognize the location of the

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How to cite this article: Hata T, Koyanagi A, Yamanishi T, et al. HDlive Silhouette for Diagnosis of Congenital Dacryocystocele. *Donald School J Ultrasound Obstet Gynecol* 2020;14(2):83–84.

Source of support: Nil

Conflict of interest: None

dacryocystocele on the nose side of the right eyeball. Moreover, the optic nerve could be identified behind the eyeball. HDlive Silhouette may provide additional information for the precise evaluation of fetal orbital and periorbital anatomical structures.

Figs 1A and B: Right congenital dacryocystocele (arrows) at 30 weeks of gestation: (A) Transverse view; (B) Sagittal view

Figs 2A and B: HDlive Silhouette images of right congenital dacryocystocele (arrows) at 32 weeks and 6 days of gestation: (A) Lateral view; (B) Frontal view. EB, eyeball; L, lens; ON, optic nerve.

REFERENCES

1. Sepulveda W, Wojakowski AB, Elias D, et al. Congenital dacryocystocele. Prenatal 2- and 3-dimensional sonographic findings. *J Ultrasound Med* 2005;24(2):225–230. DOI: 10.7863/jum.2005.24.2.225.
2. Lembed A, Bodur H, Selam B, et al. Prenatal two- and three-dimensional sonographic diagnosis of dacryocystocele. *Prenat Diagn* 2008;28(6):554–555. DOI: 10.1002/pd.2015.
3. Castro PT, Matos AP, Werner H, et al. Evaluation of fetal nasal cavity in bilateral congenital dacryocystocele: 3D reconstruction and virtual navigation by magnetic resonance imaging. *Ultrasound Obstet Gynecol* 2020;55(1):141–143. DOI: 10.1002/uog.21898.
4. AboEllail MAM, Hanaoka U, Numoto A, et al. HDlive image of giant fetal hemangioma. *J Ultrasound Med* 2015;34(12):2313–2318. DOI: 10.7863/ultra.15.01070.
5. AboEllail MAM, Tanaka H, Mori N, et al. HDlive silhouette mode in antenatal diagnosis of jejunal atresia. *Ultrasound Obstet Gynecol* 2016;48(1):131–132. DOI: 10.1002/uog.15737.
6. Hata T, AboEllail MAM, Sajapala S, et al. HDlive silhouette mode with spatiotemporal correlation for assessment of the fetal heart. *J Ultrasound Med* 2016;35(7):1489–1495. DOI: 10.7863/ultra.15.08061.