J. Fetal Med. (December 2020) 7:317–319
https://doi.org/10.1007/s40556-020-00276-1

BRIEF COMMUNICATION

Antenatal Diagnosis of Filar Cysts: An Ultrasound Study of 2 Cases

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Received: 6 September 2020 / Accepted: 5 November 2020 / Published online: 29 December 2020

Abstract Antenatal diagnosis of filar cysts is an uncommon occurrence and these lesions have been reported very rarely. With the increasing resolution of ultrasound machines, it is expected that these will be seen more frequently. In the majority of cases these cysts are reported in the third trimester and to our knowledge there is no case of antenatal detection of filar cyst which has been reported before 20 weeks of gestation. We report 2 cases of cysts of filum terminale (filar cysts) diagnosed antenatally in the second trimester (19 weeks and 22 weeks of gestation respectively).

Keywords Antenatal diagnosis · Filar cysts · Cyst of ventricularis terminalis · Ultrasound

Introduction

Antenatal detection of cysts of the terminal segment of the spinal cord is a rare occurrence and very few cases of such detection on antenatal ultrasound have been reported [1]. The diagnosis of these lesions is co-incidentally made when MR imaging is done in post-natal life for some other reasons [2]. With the steady increase in resolution of ultrasound machines it is more likely that radiologists will start picking up these lesions if they are aware of this entity. These are more likely to be picked up in advanced stages of pregnancy (third trimester) and it is very rare to pick up these lesions before the third trimester. In our cases, we could demonstrate these cystic lesions of the terminal spinal cord in 2nd trimester.

Cystic lesions of the terminal segment of the spinal cord are divided into 2 entities.

1. Cysts of Ventricularis Terminalis (sometimes referred to as terminal ventricle of Krause or fifth ventricle): Cysts of the Ventricularis Terminalis are located inside the conus medullaris with the identification of a continuity between the cyst and the central canal of the spinal cord. In Post natal life it regresses steadily and disappears but can be seen in up to 2% of children below 5 years of age [3]. It is important to identify these lesions because they present later in adulthood with bladder/bowel sphincter disturbance [4].
2. Cysts of the filum terminale (also called filar cysts): These cysts are located below the conus medullaris with no visible connection with the central canal. It is usually comprised of ependymal-lined residual lumen of the caudal portion of the spinal cord that can be visualized on MRI. One of the important points for identification of these cysts is that a cystic structure below L3 in an otherwise normal spine is almost always a cyst of the filum terminale rather than a cyst of the Ventricularis terminalis because the conus medullaris is always located between L2 and L3 between 20 and 24 weeks [5].

We report 2 cases of cysts of the filum terminale diagnosed antenatally in the 2nd trimester (19 weeks and 22 weeks of gestation respectively). To our knowledge antenatal diagnosis of cysts of the filum terminale before 20 weeks of gestation has not been reported yet.

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Case Reports

Case 1

A 34-year-old 4th gravida was referred to us for an anomaly scan and was assessed at 19 weeks of gestation. Transabdominal ultrasound could not detect major fetal anomalies. However, a suspicious cystic lesion was seen near the conus medullaris within the filum terminale. For better visualization a transabdominal scan with a high frequency transducer was done which showed an anechoic, fusiform and unilocular cyst measuring 3 × 2 mm at the level of L3 within the lower end of the conus medullaris. The cyst showed no internal septations or solid components. The cyst was non-vascularized on high-definition color Doppler imaging. The cyst was simultaneously visualized in sagittal, coronal and transverse views (Fig. 1).

Case 2

A 22-year primigravida was referred to us for routine obstetric scan at 22 weeks of gestational age. On transabdominal ultrasound we found a small fusiform anechoic structure within the lower end of the conus medullaris corresponding to L3 and measuring 5 × 2 mm. This cystic lesion was devoid of septations or solid components with a smooth outline (Fig. 2).

Discussion

The differential diagnosis of a lumbosacral cystic lesion detected antenatally is limited and includes neoplastic lesions (ependymoma, astrocytoma), syringomyelia, cystic dilatation of Ventricularis terminalis and filar cyst. At prenatal ultrasound neoplastic tumors are usually seen as solid or cysto-solid mass lesions and entirely cystic lesions are less likely to be of neoplastic etiology [6].

One of the important differential diagnoses in this regard would be Cyst of ventricularis terminalis which may present as bowel/bladder sphincter disturbances in later life and may need post-natal evaluation by MR imaging [7].

The important differentiating feature between filar cyst and cystic dilatation of ventricularis terminalis is that in the case of a filar cyst the continuity between the cyst and the central canal of the spinal cord cannot be demonstrated whereas in cases of cystic dilatation of Ventricularis terminalis there exists a connection between cystic dilatation and the central canal of the spinal cord. This differentiation is important as cystic dilatation of Ventricularis terminalis is more likely to cause symptomatic disease and may also require surgical intervention as opposed to filar cyst which invariably regresses with time and is considered a normal variant and hence no further evaluation is required [8].

If encountered after the 2nd trimester, one of the important learning point which needs to be emphasized is that conus medullaris is always located between L2 and L3 between 20 and 24 weeks. A cystic lesion below L3 is almost always a filar cyst rather than a cyst of Ventricularis terminalis.

Conclusion

Filar cysts (Cyst of the filum terminale) are cystic lesions of the filum terminale and are a normal variant. These invariably regress in postnatal life. The antenatal diagnosis of these lesions is rare. They need to be differentiated from cystic dilatation of the ventricularis terminalis which may require further imaging in postnatal life. In cases of antenatally detected filar cysts reassurance of prospective parents about benign and self limiting nature of these cysts is all that is required.

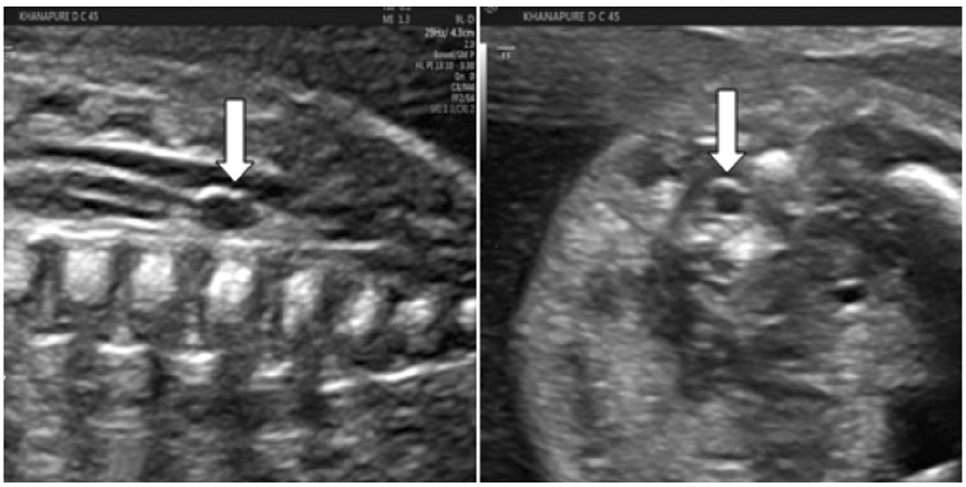

Fig. 1 Transabdominal High-Frequency ultrasound sagittal (left) and transverse (right) images at 19 weeks showing a small cyst at the level of filum terminale

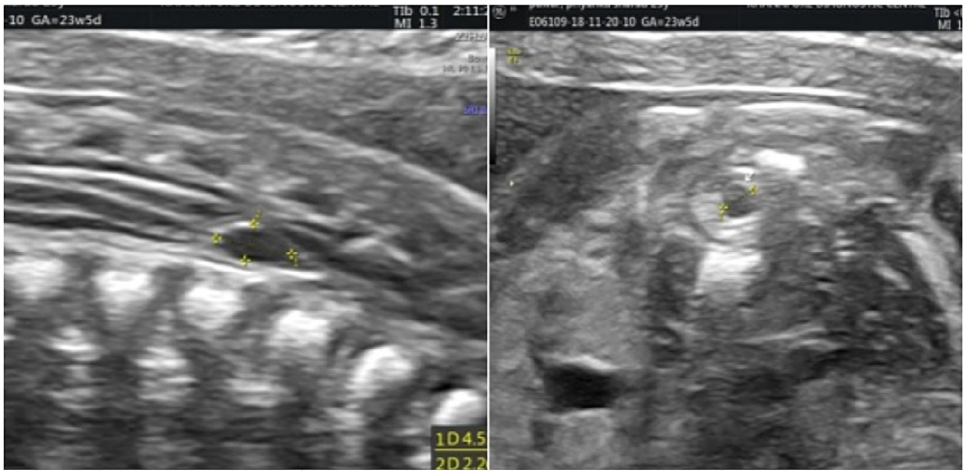

Fig. 2 Transabdominal ultrasound sagittal (left) and transverse (right) images at 23weeks showing a small cyst at the level of filum terminale

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