

Prenatal diagnosis of cavernous hemangioma in a specialist hospital in Port Harcourt, South South Nigeria. A case report and review of the literature

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Abstract

Congenital cavernous hemangiomas are rare benign vascular tumors that are present at birth. They can occur in various organs of the body. Prenatal diagnosis can be done using ultrasound and magnetic resonance imaging. Very few cases have been described in the literature in Port Harcourt, south-south Nigeria.

We present the case of a 33-year-old P3+1 mother who presented for a third-trimester fetal ultrasound scan at 35 weeks gestation in a specialist hospital in Port Harcourt. The ultrasound scan showed a live fetus with a huge multiloculated soft tissue mass measuring ~ 11.4cmx8.7cm with areas of minimal flow located in the anterior aspect of the neck, chest, and abdomen extending to the ipsilateral arm and forearm sparing the fingers. No other gross abnormalities were noted. A magnetic resonance imaging (MRI) study was also done to further characterize the aforementioned mass. A diagnosis of congenital hemangioma of the neck, chest, and upper limb was made.

The pregnancy progressed and a planned cesarean section was done at 38 weeks with the birth of a live 3.5kg female baby. An excision biopsy of the mass was done at the age of 2 months confirming the diagnosis of a congenital cavernous haemangioma.

Key words: Prenatal diagnosis; Magnetic Resonance Imaging; Cavernous hemangioma; Port Harcourt

1. Introduction

Congenital Cavernous hemangiomas are rare benign vascular malformations¹ seen at birth. Prenatal diagnosis can be made using ultrasound and magnetic resonance imaging. Here, we present a rare case of congenital cavernous hemangioma of the neck, chest, and upper limb. identified by prenatal ultrasound at 35 weeks gestation.

2. Case report

Mrs P.P, a 33-year-old gravida 6, P1+4 housewife, presented to a Free Specialist Hospital in Port Harcourt, south south Nigeria at 35 weeks of gestation for a third-trimester fetal ultrasound scan. 2D and Doppler ultrasonography showed a singleton live fetus in breech presentation at 35 weeks and 6 days with an estimated fetal weight of 2.8kg harbouring a huge multiloculated soft tissue mass measuring 11.4cm x 8.7cm with areas of minimal flow located in the anterior aspect of the neck, chest, and abdomen extending to the ipsilateral arm and forearm sparing the fingers, which also appeared enlarged. No other gross abnormalities were noted (Figure 1). A magnetic resonance imaging (MRI) study was done which showed a well-circumscribed rounded anterolaterally located multiloculated mass extending from the neck to

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the anterior chest wall, the armpit, and to the ipsilateral upper limb, which was irregular in outline and larger than the contralateral upper limb due to the aforementioned mass. This mass measured 12.9 cm x 9.98 cm. The locules were hypointense on T1W images and hyperintense on T2W images and FLAIR. However, there were foci of an area within the mass measuring 2.8cm x 3.7cm, which was hyperintense on T1W, T2W, and FLAIR but hypointense on ADC.(Figure 2,3) A diagnosis of congenital hemangioma of the neck, chest, and upper limb was made. The index pregnancy had been uneventful, with her first scan being done at 15 weeks gestation and was normal. No fetal abnormalities were noted. Her previous pregnancy had been carried to term and the baby was alive and normal. The lady denied any use of medications during her pregnancy. Her family history revealed no known congenital or birth defects.

The mother was counseled, and the pregnancy progressed. A planned cesarean section was done at 39 weeks with the birth of a live 3.6kg female baby. A soft tissue mass was seen extending from the right lateral aspect of the neck to the chest, armpit, and the right upper limb with multiple areas of red-colored nodules (Figure 4). An excision biopsy with histological examination of the mass was done at the age of 2 months, confirming the diagnosis of a congenital cavernous haemangioma.

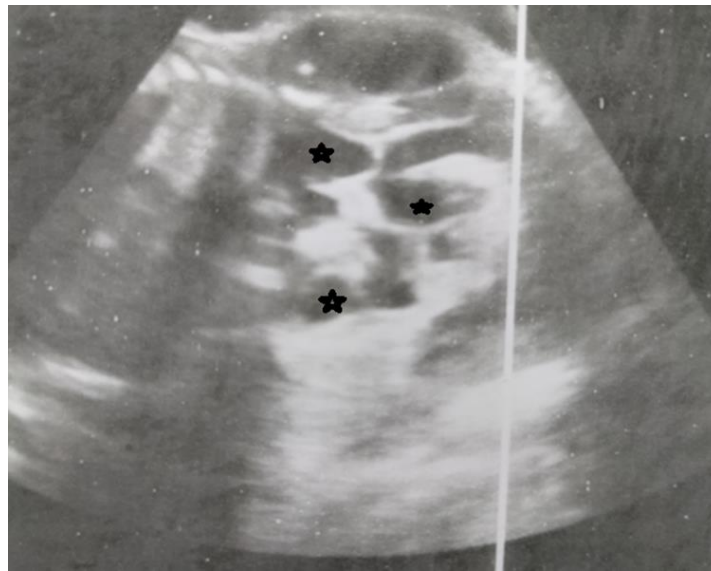


Figure 1 Prenatal ultrasound scan showing multiple loculated hypoechoic masses of the anterior chest wall. (Show by black stars)

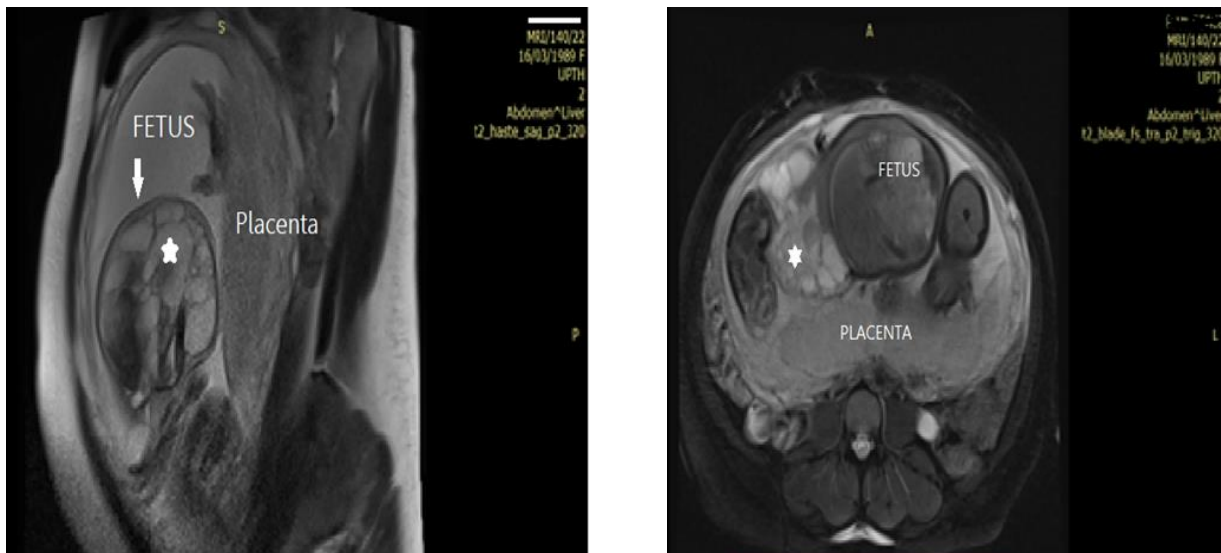


Figure 2 Prenatal MRI axial slice T2WI (white star) well circumscribed mass with multiloculated hyperintense areas in the anterior chest wall.



Figure 3 MRI axial slice T1WI – (white star)well circumscribed multiloculated predominantly hypointense mass in the anterior chest wall



Figure 4 Live female at delivered at 39 weeks with a huge right chest wall soft tissue mass extending to the neck and ipsilateral upper limb.(black star).

3. Discussion

Cavernous hemangiomas (CH) are benign endothelial cell neoplasms made up of a single layer of endothelial cells that lack smooth muscle or elastin. It was defined by Mulliken et al[1] as a slow-flow venous vascular endothelial malformation. Recently, CH has been called slow flow venous malformations by the International Society for the Study of Vascular Anomalie (ISSVA) classification of vascular anomalies [2].

When present at birth, it is said to be a congenital hemangioma (CH). These are rare, comprising 3% of cases[2]. The infantile type, which appears in infancy, affects about 4.5% of children [2]. CH may occur alone or be a part of a syndrome such as Kasabach-Merritt syndrome [1]. CH may be seen in the liver, cutaneous tissue, the brain, orbit, and other parts of the body. The index case was not the infantile type as it was present at birth and limited to the cutaneous tissue of the chest, neck, and upper limb.

Congenital Cavernous hemangiomas lack pathognomonic characteristics and thus are difficult to diagnose preoperatively via conventional imaging techniques [3]. Ultrasound features depend on the vascularity of the mass and may appear predominantly as a well-circumscribed hypoechoic mass lesion with heterogeneous echotexture and the presence of cystic or loculated areas within it. Doppler interrogation may show restricted flow.[4]

The imaging modality of choice is magnetic resonance imaging (MRI), as it is non-invasive and shows the anatomical extent of the disease, thereby helping in identifying it [5]. CH appears isointense or hypointense in the T1-weighted image. On T2-weighted images, CH appears hyperintense. However, hypointense areas may also be seen on T2-weighted images due to the presence of hemosiderin, vascular channels, or fibrofatty septa [5]. Heterogeneous enhancement may be seen after the injection of Gadolinium[6]. However, this was not given in the index case. Lymphangiomas are ill-defined masses of thin-walled dilated lymphatics that appear on ultrasound scan as unicameral or multilocular cystic

masses with a thin or thick-walled septum. The border of lymphangiomas is indistinct. This is a distinguishing feature from CH.[7]

4. Conclusion

Cavernous hemangioma is a rare congenital condition seen at birth and can be diagnosed prenatally using ultrasound scans and magnetic resonance imaging. M R I is the imaging modality of choice for its diagnosis.

Compliance with ethical standards

Acknowledgments

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Disclosure of conflict of interest

Authors declare no conflict of interest.

Statement of informed consent

The parents of Baby P.P gave a verbal consent concerning reporting their baby's case for publication. They also consented to the pictures that were taken during admission being used for the publication.

Author contributions

All authors of the manuscript contributed to this work. They read and approved the final version.

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