Prenatal Diagnosis of Mesoblastic Nephroma Associated with Polyhydrannios: A Case Report

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ABSTRACT

Unilateral solid kidney tumor of fetus is an extremely rare phenomenon in day to day obstetric practice. Antenatal diagnosis of it is also very unusual. Only few cases of it diagnosed by prenatal ultrasound have so far been reported in world literature. Although, Clinical suspicion of kidney disease arises with poly/oligohydramnios, sonographic confirmation of type of kidney lesion is very rare. However, on the basis of this imaging evidence ultimate management is planned. In this case, congenital renal tumor of baby was first diagnosed on the basis of sonographic report. It suggested clearly that it was a unilateral solid parenchymal tumor. Caesarean delivery was advocated on maternal request, keeping in mind the safe delivery of preterm baby. After managing immediate neonatal problem baby was referred to paediatric-surgery unit. There he was operated upon two weeks after delivery. Gradually, the baby was recovered from right nephrectomy and followed up for 6 months.

KEYWORDS: prenatal imaging, polyhydrannios, congenital renal tumor.

INTRODUCTION

Fetal kidney tumour is an extremely rare phenomenon in clinical practice and diagnosis of it antenataly is exceptional. The echographic feature of the surrounding structures makes it difficult to image both kidneys satisfactorily. Most of the kidney diseases are cystic and obstructive type of nephropathy associated with oligohydrannios [1]. Only few cases diagnosed by prenatal ultrasound have been reported so far in world literature. This present case report elucidates sonographic features of a Mesoblastic Nephroma with polyhydrannios diagnosed prenatally at term.

CASE REPORT

A 20-years-old primigravida presented to our Emergency Obstetrics Services at term with concerns of suspected rupture of membranes and leaking of amniotic fluid in early labour. As there was no obvious leakage of fluid, an emergency ultrasound was performed and severe polyhydrannios (fig-1) was visualized which guided to perform a detailed ultrasound examination. A detailed sonographic examination revealed an abdominal circumference significantly greater than other biometric measurements. Biparietal diameter, head circumference & femer length were concurring to 34 weeks of gestation whereas, abdominal circumference showed 38 weeks. Presence of an intra-abdominal solid tumor with well defined borders that displaced the foetal liver cranially was noted (fig-2). The size of the tumor was 7.5×6.9 cms. The normal appearing left kidney was noted but the right kidney could not be identified. It was a male foetus with normal appearing bladder and urethral region. Based on these findings of solid renal mass and associated polyhydrannios a Congenital Mesoblastic Nephroma was proposed as possible diagnosis. There was no history of maternal diabetes. It was a non consanguineous marriage. As patient went into active labour and could not tolerate pain a caesarean section was performed at maternal request. Baby was born with a good Apgar score and examination revealed a huge solid mass occupying almost the whole right side of abdomen. Baby had neonatal problem of transient respiratory difficulty and jaundice which got settled. CT scan abdomen revealed a neoplastic lesion arising from mid and lower third of right kidney and extending abdominal quadrants. No vascular invasion was noted and a diagnosis of Mesoblastic Nephroma was suggested. The neonate was operated two weeks after birth in a centre with paediatric surgery unit. A right sided nephrouretrectomy was done.

Right kidney was totally replaced by a solid tumor of 7.5×6.9 cms, with round and well defined borders, the cut surface was yellow-grey, firm, rubbery in consistency. His postoperative period was complicated by mild feed intolerance and suspected sepsis which was managed by iv
antibiotics. Histopathology confirmed the diagnosis of Mesoblastic Nephroma. Microscopy revealed interlaced bundles of fibroblast and myofibroblast with eosinophilic and fibrillar cytoplasm and round to oval nuclei. There were focal areas of immature cartilage and dysplastic glomeruli and tubules.

Figure 1: polyhydramnios- diameter of largest pocket-D1-151.7mm. with a large intra abdominal solid mass.

Figure 2: Solid mass in abdomino-pelvic area, with diameters - D1--69.0mm & D2--75.7mm.

DISCUSSION

When a unilateral renal tumor is diagnosed by prenatal ultrasound associated with polyhydramnios we have to believe it to be a case of Congenital Mesoblastic Nephroma vs. Wilm’s tumor. Very few cases of Mesoblastic Nephroma have been reported and all were unilateral and diameters between 0.8 and 14 cm [2] associated with polyhydramnios. Though Wilm’s tumour have been observed neonatally its prenatal detection is almost unknown [3]. Mesoblastic Nephroma on prenatal ultrasound usually appears as a unilateral solid paravertebral mass with a low-level, non-homogenous echo pattern. Although some areas with high echo and small echo free areas representing intratumour haemorrhage and necrosis may occur [4]. Disproportionately increased dimension of foetal trunk depending upon the size of the tumour provides an important clue [5]. A well defined border of the tumour represents the line between the lesion and the adjacent tissue.

Mesoblastic Nephroma can partially show lobation with linear demarcations indenting the surface and interlobar grooves as described on normal kidneys. [6].The tumour can also show an indistinct border. [7]. Polyhydramnios is an indicative point in diagnosis since other renal mass usually are associated with oligohydramnios. Increased renal blood flow and impaired renal concentrating ability may be reasons for foetal polyuria and polyhydramnios [8]. Displacement and compression of the GI tract by the solid tumour may impair amniotic fluid absorption and eventually lead to the development of polyhydramnios. To differentiate a Mesoblastic Nephroma from Wilm’s tumor we need histopathology, but it is true that Mesoblastic Nephroma have been diagnosed more frequently in utero.

In infantile polycystic kidney disease there will be bilateral renal enlargement and oligohydramnios with non visualization of foetal bladder. In diffuse nephromatosis [9] both kidneys are involved and may show acoustic shadowing due to calcification. Kidney enlargement in some inherited disorders such as Meckels syndrome is generally bilateral. Solid tumour arising in paravertebral area from adrenal gland or extrathorasic pulmonary sequestration can be distinguished from renal tumour by the presence of a normal appearing kidney in that area. Severe polyhydramnios may necessitate periodic amniocentesis to prevent preterm labour for polyhydramnios. Antenatal steroid should be given thinking that polyhydramnios may lead to prelabour rupture of membrane and preterm labour and delivery. If diagnosed early a serial ultrasound to evaluate tumour growth and foetal growth should be performed and a thorough search for other associated anomalies as well.
CONCLUSION

Isolated congenital Mesoblastic Nephroma carries an excellent prognosis after neonatal surgery is performed. Therefore, prenatal ruling out of any other anomalies is important because, it helps in counseling of the mother and her relatives. It also helps in planning management of baby immediately after delivery.

REFERENCES


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