CONGENITAL MESOBLASTIC NEPHROMA: A CASE REPORT

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INTRODUCTION
Neonatal tumors are rare; however, congenital mesoblastic nephroma (CMN) is the most common neonatal renal tumor.1,2 The association between CMN and polyhydramnios, hypertension and prematurity has been well described; and although CMN is a benign tumor, it could behave aggressively, resulting in catastrophic complications.3-5

We report a 28-week preterm newborn with a maternal history of polyhydramnios, hypertension in neonatal period and a right-sided renal mass which was confirmed as CMN by histopathology.

CASE REPORT
A premature infant girl was born to a 28-year-old healthy woman (G3, P2) after 28 weeks of gestation. The mother was admitted at 26 weeks gestation because of respiratory difficulty. Ultrasonography showed polyhydramnios. It required therapeutic amniocentesis, about 2000 ml of amniotic fluid was drained. Ultrasonography showed a right-sided renal heterogeneous solid mass. Right nephrectomy was performed and the histology showed CMN.

Key Words: Congenital mesoblastic nephroma, Polyhydramnios, Neonatal hypertension.

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controlled by hydralazine. Serum creatinine, blood urea nitrogen and serum electrolytes were within normal limits. Serum renin and aldosterone levels were not measured.

Abdominal ultrasonography showed a 55mm x 40mm heterogeneous solid mass involving the right kidney area. CT scan confirmed a large hypodense mass with heterogeneous enhancement arising from the right kidney with cortical enhancement (Figure 1).

![Figure 1: CT Scan of right kidney](image)

After stabilizing the cardio-respiratory status, the newborn underwent an exploration laparotomy at the age of 4 weeks. Right nephrectomy was performed. Gross pathological examination showed a solid renal tumor weighing 50 grams and measuring 4 x 5 x 4.5 cm. No necrosis or hemorrhage was identified. Microscopy revealed a moderately cellular spindle cell neoplasm infiltrating adjoining renal parenchyma, perirenal fat and renal sinus. However, the renal pelvis and calyces and the suprarenal gland were not infiltrated, no vascular invasion was seen. There was a moderate nuclear pleomorphism and mild to moderate mitotic activity.

The neoplastic cells showed positive immunoreactivity for vimentin. There was no reactivity for desmin, actin, keratin or S-100 protein. The kidney had an embryonic appearance (Figure 2), which could be described as mesoblastic nephroma, mixed classic and cellular variant.

**DISCUSSION**

Congenital mesoblastic nephroma is the commonest neonatal renal tumor; which mostly presents as a palpable abdominal mass. The differential diagnosis of a neonatal abdominal mass includes CMN, Wilm's tumor, neuroblastoma, rhabdoid tumor, clear cell sarcoma of the kidney, and renal cell carcinoma. Although CMN is usually a benign tumor it can be aggressive in behavior. Thus, total nephrectomy is curative. In this case, the abdominal mass was detected antenatally by ultrasonography. An increasing number of cases have been diagnosed antenatally especially with the widespread use of antenatal ultrasonography.

There are two main subtypes of CMN. The classic (typical) type, which is the more common, is of a benign nature and has a better prognosis. The second, the cellular (atypical) variant, is less common and runs an unpredictable course. Nevertheless, a mixed type, as in our case, has been reported.

In our report, the mother had polyhydramnios, believed to be due to fetal polyurea, that required therapeutic amniocentesis. Polyhydramnios, with or without hydrops fetalis, and/or preterm labor are associated with CMN.

Some CMNs are associated with paraneoplastic syndromes such as hypertension (due to hyper-reninemia) and hypercalcemia (due to prostaglandin secretion from the tumor cells). Our patient developed hypertension at the end of the first week of life and was controlled by hydralazine. Serum creatinine, blood urea nitrogen, and serum electrolytes were within normal limits. Renin and aldosterone levels were not measured.

This report is of a preterm infant girl, of 28-week gestation with CMN of mixed histology (classic and atypical), polyhydramnios and hypertension. The right-sided abdominal mass was detected antenatally by ultrasonography, after which the patient underwent a total nephrectomy.
The diagnosis of CMN was made by histopathology. Based on the review of literature and the author's knowledge, this is the youngest reported patient with CMN of mixed histology and hypertension.

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