Multi Cystic Dysplastic Kidney (MCDK)- Prenatal diagnosis by Ultrasound Scan

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Background
Multi Cystic Dysplastic Kidney (MCDK) develops in utero and the diagnosis is often made either in the antenatal period by an ultrasound scan. It may otherwise go unrecognised and may be a common cause of renal agenesis, following complete involution during childhood. The vast majority are sporadic and non-familial. Rarely autosomal dominant forms are seen. The unilateral incidence is estimated at 1:2500-4000. A normal life expectancy can be expected as long as the contra lateral kidney is normal.

Case Report
Fetal anatomy scan of a Para 1, who had a low risk of Down’s (less than 1 in 1000) by the combined test, showed right kidney of the fetus to be enlarged with multiple cysts at 21 weeks gestation (Fig 1). The kidney appeared dysplastic. The left kidney and fetal bladder appeared normal. There was no evidence of hydronephrosis. The amniotic fluid volume and the Umbilical Artery Doppler profile were within normal limits. There were no other abnormalities seen on scan. Our patient was made aware that baby will be followed up by the Paediatric team after birth and will have regular ultrasound scans to check the non-functioning kidney. Follow up scans of the baby during pregnancy confirmed good Fetal growth, AFI and dopplers. The MCDK showed evidence of further enlargement in the third trimester (Fig 2). She delivered normally at 39 weeks of gestation. Baby had an abdominal ultrasound scan after birth, which confirmed the prenatal findings and was on conservative management.

Discussion
The diagnosis of MCDK is often made antenatally with multiple small cysts becoming evident as early as the 15th week of gestation. Over time, appearances may change dramatically, ranging from complete involution to large multicystic masses. Lobulated renal contour with multiple internal cysts of varying sizes and shapes are visualised in the ultrasound scan. The renal parenchyma is usually fibrous and echogenic with absent or small hilar vessels. The cysts typically cluster and are non-communicating and hence not to be confused with hydronephrosis. Prompt referral to Fetal Medicine Unit and appropriate counselling of parents is essential to relieve their anxiety. Real time imaging is extremely useful to exclude any communication with the ureter and between each other. Complete spontaneous involution is said to occur in up to 60% of cases, but may take up to 10 years to occur. If surgical resection is performed, it is done so early in life and is a simple and well tolerated procedure. Controversy exists over the need for prophylactic surgical excision of a MCDK, justified on the grounds of a small risk of malignant transformation, more commonly in adults with a persistent MCDK. More recently, conservative management with follow up has been recommended. Bilateral MCDK is fatal and is a cause of Intra Uterine Death. Anhydramnios is noted as both kidneys are non-functional.

References