

MULTICYSTIC DYSPLASTIC KIDNEY (MCDK) EXPLAINED

How Does a Multicystic Dysplastic Kidney Occur?

When the kidneys are developing within the womb tubes (called ureters) grow up from the bladder region and join with the developing kidney. What usually happens with MCDK kidney is that the ureter on one side never reaches the kidney area. As a result, the kidney becomes abnormally developed (dysplastic) with a number of cysts within the kidney (hence multicystic). We tend to put the terms together to call it multicystic dysplastic kidney or MCDK.

The MCDK problem usually occurs only on one side. Your child can lead a perfectly normal life as long as the other 'normal' kidney is OK. Note that MULTICYSTIC DYSPLASTIC is NOT the same as POLYCYSTIC KIDNEYS which refers to an inherited disease affecting both kidneys.

Is it Easy to Recognise MCDK in the Womb?

Most MCDK kidneys are recognised as a collection of cysts within the kidney that may be abnormally large at some time during pregnancy. It is unlikely that the cysts will be confused for a kidney that has a blockage (hydronephrosis) or any other kidney problem.

Will Anything be Done About the Kidney in the Womb?

Since one kidney is normal there should not be any lack of womb fluid or interference with baby's development within the womb. There is no need to deliver babies early and even if the MCDK kidney is large this should cause no problems at delivery.

What Will Happen After Birth?

As long as baby is well and passing urine normally then discharge home should not be delayed. Sometimes the MCDK kidney can be felt after birth but it is very unlikely that the kidney will be so large that we have to consider removing it.

What Tests Will my Baby Have After Birth?

The tests that we do are to prove that the MCDK kidney is not functioning.

1. An ultrasound examination will be carried out within the first few weeks after birth so that we can measure the size of the normal and the MCDK kidney.
2. A special dye scan of the kidneys will be done within the first 3 months. This is known as a DMSA scan and will confirm that there is no function in the MCDK kidney. At the same time we can take a small sample of blood for a creatinine measurement which is one marker of the kidney function.

3. If the initial ultrasound suggests that there may be dilatation of the normal kidney or the tube (ureter) that goes between the kidney and bladder then we might carry out a bladder x-ray (cystogram). This is to see whether there is any major backflow or reflux of urine from the bladder back to the good kidney which could lead to infection.

An antibiotic (Trimethoprim) will be given twice a day for 2 days at the time of this test to prevent infection occurring within the bladder.

If we don't do the bladder x-ray after birth then we may still consider doing one if baby develops a urine infection in the first year or two of life.

Will I Receive Information About These Tests?

The tests will be explained to you in the clinic. You will also receive an information leaflet about the tests and you can ask any of the nursing or medical staff questions at any time.

What Will Happen After the Tests are Complete?

You will see the consultant back in the clinic who will review all the tests with you. If they confirm that the MCDK kidney is non-functioning and there are no other problems then we will arrange to follow the baby in the clinic at certain intervals. Usually this will be at 12 months of age and then yearly until the age

of 5. At that stage we will do a further blood test to check the overall kidney function.

What Will Happen to the MCDK as my Child Grows Up

Follow-up studies conducted in our unit suggest that 1 in 3 (33%) of MCDK kidneys have disappeared by 2 years of age and almost half (50%) by 5 years. This is why we do further ultrasound examination at 2 years and 5 years to make sure that the MCDK kidney is disappearing and that the good kidney has enlarged in size.

Many children may be considered for discharged from follow-up at 5 years but if the MCDK kidney is still visible then we feel they should be followed every 2 years until 10 years of age.

A single kidney is the commonest abnormality found in the general population and it is likely that many people had an MCDK kidney which disappeared with time to give them a single kidney in adult life.

Are There Any Reasons to do an Operation to Remove the Kidney?

Since we have shown that most of these kidneys disappear with time then an operation is not justified. There are rare reports of blood pressure (hypertension) due to MCDK and hence the need to measure the child's blood pressure at clinic visits. Even rarer are reports of kidney tumours (cancer) developing in abnormal

kidneys. However, current evidence suggests the risk with an ordinary MCDK kidney is minute.

Where Will I Find More Information?

Several centres are gathering knowledge about MCDK kidneys and our unit has coordinated a long-term follow-up study which is referenced below. Speak to your consultant about further information if you require more details.

Reference

Sukthanker S, Watson AR. Unilateral multicystic dysplastic kidney disease: defining the natural history. *Acta Paediatrica* 2000;89: 811-813

Aslam M, Watson AR on behalf of the Trent & Anglia MCDK Study Group. Unilateral multicystic dysplastic kidney (MCDK): long-term outcomes. *Arch Dis Child* 2006.

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