Treatment for developmental dysplasia of the hip (DDH)

Children's Hospital

Information for Patients

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What is developmental dysplasia of the hip (DDH)?

DDH is a condition where the hip joint does not develop properly. It is usually present at birth. It used to be known as 'congenital dislocated hip'. Some children do develop it as they grow. Some children are affected more severely than others. This can be one or both hips.

The hip joint is a ball and socket joint. It attaches the thigh bone to the pelvis. In DDH the socket has not developed properly and is too shallow. This lets the ball become loose and may slip out of the joint (dislocate) making it unstable. One or both hips may be affected in DDH.

It is more likely to affect the left hip, and 1 or 2 in every 1,000 babies have DDH that needs treatment.

If the diagnosis is made early the outcome of treatment is very good.

What causes DDH?

The cause of DDH is unclear but there are some risk factors:

- **Family history:** if there is a parent, brother or sister with DDH then it is 5 times more likely for a child to have it.
- **Gender:** about 8 in 10 cases of DDH are female. This may be due to the presence of relaxin, a hormone produced during pregnancy. It relaxes ligaments. It is likely to affect female babies more then males.
- **Pregnancy conditions:** if there is only a small amount of fluid in the womb (uterus). This is called oligohydramnios. There is a risk of developing DDH because the baby is unable to move normally in the uterus.
- **Breech position:** if an unborn baby is in the breech position (bottom down in the

womb), this can put the legs in a position which increases the risk of DDH.

- **First born baby:** about 6 in 10 cases of DDH happen in first born children. This may be because the womb is tighter and the baby has less room to move.
- **Other medical conditions:** if the baby has cerebral palsy, spinal cord problems or other nerve and muscle disorders, this increases the risk of developing DDH. DDH is also more common in premature babies or babies born weighing more than 5kg.
- **Culture:** DDH appears to be greater in certain cultures. Some cultures swaddle their babies. This increases the risk. Others who carry them on their backs with the legs turned outwards (abducted hip position) have reduced risk.

Diagnosing DDH

We check newborn babies as part of the Newborn Physical Examination. A doctor will move (manipulate) the hips gently to feel for any instability. The baby's legs are bent up and out like a book, whilst doing this the doctor is feeling for a click in the hip. If there is a click, it could mean the baby has a hip problem. Other symptoms are the thigh bone may look shorter on the affected side or unequal skin folds between the legs at the top of the thigh. This examination is repeated at 6 to 8 weeks old. We may ask for an ultrasound scan.

In older children who have started to walk, they may have a limp, and/or walk on their toes.

An ultrasound scan of the hips is carried out to confirm diagnosis.

A scan will happen if:

- there is family history of hip problems
- babies are born in breech position
- twins/multiple birth
- babies are born before 37 weeks
- babies are born with club foot/feet (talipes)

Treatment

Untreated DDH may lead to problems later in life such as limping, hip pain and stiff painful joints (osteoarthritis).

Pavlik harness

The dislocated hip of a newborn baby will often go back into the socket easily because the hormone relaxin is still in the baby. They are then held in place by a Pavlik harness. This is a soft fabric harness. It is used to hold the hips in the correct position. This lets them develop normally. It needs to be worn full-time for a few weeks.

Your child will continue to have ultrasound scans to check that the hip is in the correct position. This harness keeps the legs bent and turned outwards but allows certain movements. It does not let the baby to straighten their legs or turn them inwards.

We will adjust the harness as the child grows and as the hip becomes stable. The amount of time in

the harness will be reduced as the condition improves. We will give you instructions and a leaflet on how to care for your baby in the harness when it is fitted.

Surgery to manage DDH (closed reduction)

This is usually done when your child is around 12 months or when treatment with the harness has not worked. It involves positioning the hips in the correct position whilst the baby is under a general anaesthetic (they are asleep). A plaster cast (hip spica) is applied to hold the corrected position.

The plaster cast is around the hips and down the legs, usually to the ankle on the affected side and above the knee on the other side. This procedure does not involve an operation, (cutting the skin). The general anaesthetic is needed so that the baby is fully relaxed and the doctor can get the correct position of the hips and apply the cast without distressing the baby. The cast is worn for 12 weeks. It might need to be changed after 6 weeks.

Surgery to manage DDH (open reduction)

If treatment with the harness and plaster cast do not work or if the child is much older when DDH is found, then they will need an operation. The operation involves a cut (incision) in the groin, loosening the tendons around the hip joint and releasing anything that is stopping the hip joint from moving freely.

Once the bones and joint are in a good position, the joint is reduced and the bone is stabilized if needed. A plaster cast (hip spica) is then used to hold the joint in place.

After 6 weeks, under general anaesthetic, we will assess the hip to make sure it is stable and healing well. We will then apply another cast for a further 6 weeks .

Other types of surgery

If DDH is still a problem and your child is 12 to 18 months old, more complicated surgery is needed. This may involve femoral and/or pelvic osteotomy.

An osteotomy is a surgical procedure. It means cutting the bone; it is used to correct the position of the bone and/or joint. Screws and plates are then used to hold the bone secure whilst it heals. Femoral osteotomy means cutting the thigh bone (femur) and pelvic osteotomy means cutting the pelvis.

Femoral osteotomy

Femoral osteotomy involves cutting the thigh bone at the top end. We will then reposition the head of the thigh bone (ball) into the socket (acetabulum). Plates and screws are then used to secure the bone and let the bone heal. This surgery is done to correct dislocated hips and to correct the angle of the joint. This will make sure the leg is in the right place that is, knee and foot pointing forwards. This is called a de-rotational femoral osteotomy.

Babies, toddlers and small children under 4 or 5 years of age are put into hip spicas after surgery. Older/bigger children may be put into broomstick plasters. These are casts on each leg with a stick attached between the legs to keep them apart (abducted). If casts are not used, the legs should be kept in an abducted position using pillows, cushions or a wedge shaped foam to keep the correct position.

Pelvic osteotomy

Sometimes the head of the thigh bone is not able to sit in the socket securely because the socket has not developed properly and is too shallow. A pelvic osteotomy is then needed to create a deeper and better shaped socket. There are a few different types of pelvic osteotomies:

- Pemberton osteotomy
- Chiari osteotomy
- Salter osteotomy
- Dega osteotomy
- Ganz Periacetabular osteotomy

All the procedures create a better shaped cup/socket. They are sometimes done together with a femoral osteotomy.

Care before your surgery

You and your child will attend a pre-assessment clinic on a different day before the surgery. At this appointment you will have a consultation with the surgeon. They will explain the operation and aftercare. Your child will have their height and weight measured. They will have a blood test. You may also see an anaesthetist and a specialist nurse.

We will give you instructions about when your child will need to stop eating before surgery (fasting). This is also a chance for you and your child to ask questions about the operation and admission to hospital. We will ask you to sign a consent form. The Occupational Therapist (OT) will see or contact you to talk about any issues with moving around at home after the operation.

Care after your surgery

After the operation your child will return to the ward. They will be closely monitored by your nurse. We will check on pain levels and pain relief given. We will talk to you about pain relief at the pre-assessment clinic before the operation. We usually use an epidural for 48 hours alongside other medicines to keep your child comfortable. Your child will also have IV fluids (fluid into the vein through a thin plastic tube or cannula) until they are eating and drinking normally.

Before you go home, an Occupational Therapist (OT) will help you to move and lift your child safely, and check your car seat and buggy.

We will discharge your child from hospital 3 to 4 days after the operation.

Hip spica care

If your child has a hip spica, they will need to be looked after in the bed supported by pillows to lift the heels off the bed. The nurses will check that circulation and feeling to the toes/foot is ok.

We will check

- the spica for dents or cracks.
- the skin at the edges of the spica to make sure it is not becoming sore from rubbing or

tightness. The cast can be trimmed back if it is too tight and causing problems. Padding will be applied to the edges.

- We will show you how to change your baby's nappy.

When you go home you will need to check the spica for cracks, dents and wet areas.

Before applying the spica, we will check the skin. Some areas will be protected with extra padding to stop sores under the cast.

You will need to regularly check for sore areas and check if any padding needs replacing. Even with careful checking and added padding, sores under the cast do still happen.

If you think there is a sore developing please contact the hospital straight away on the numbers you have been given.

Signs of a sore are:

- Pain over a certain area
- Bleeding or a wet area on the cast
- Horrible (offensive) smell from the cast

To help stop sores, keep the cast dry. We know that this can be difficult. If the cast does become wet or very dirty, it may need to be changed.

See leaflet 883 : Caring for your child in a hip spica cast for more information, available from yourhealth.leicestershospitals.nhs.uk/ or ask member of staff.

Contact details

Secretary 8am to 4pm	0116 258 5756
Specialist sister	07950 888 466
Deputy sister	07977 957 248
Ward 19 (24 hours)	0116 258 5244

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