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Signature of Chairman of Validation Committee: G Connett
Print Name: G Connett
Post Held: Paediatric Consultant
Closed/Open Hip Reduction

Parent/Carer Information Leaflet

Southampton University Hospitals NHS Trust
Closed/Open Hip Reduction

Closed or Open hip reduction is an operation to correct Developmental Dysplasia of the Hip (DDH), a condition in which the child’s hip is dysplastic (misshapen) or dislocated.

What is Developmental Dysplasia of the Hip?
The normal hip joint is a ball and socket joint. The femoral head (ball) at the top of the femur (thigh bone) sits in the acetabulum (socket).

In Developmental Dysplasia of the Hip the acetabulum (hip socket) is shallow or misshapen (dysplastic). Sometimes the femoral head (ball) is partially or completely dislocated.
It is a condition that can be present at birth or can develop in the first year of life. It commonly affects two per thousand live births (Boughton 1997) and is more common in females. At present it is not known why DDH occurs.

**What is the Treatment for Developmental Dysplasia of the Hip?**

Babies are initially treated in a Pavlik harness. If your child did not respond to this treatment, or was diagnosed after four months of age then the next step is surgical correction. The operation is called Closed or Open Reduction.

This booklet aims to describe the operation, including the pre-operative preparation and post operative care of your child. It also includes advice on caring for your child in plaster, outlines the on going management and follow-up care.

**The care package is described in 6 phases:**

- What Happens Before The Operation?
- What does the operation involve?
- What happens after the operation?
- Caring For Your Child In A Hip Spica Plaster
- On Going Management – Plaster Changes
- Out Patient Follow-Up
What Happens Before The Operation?

Before being admitted to hospital you and your child will be seen in the clinic to plan the surgery and discuss some of the issues about the treatment.

You will meet some or all of the listed health professionals during your child’s treatment:

- The **Consultant** will discuss the procedure and answer any questions you may have.

- The **Doctor** will examine your child, ask questions about their medical history and put a pen mark on the hip that is to be operated on. He/She will explain the surgery and ask you to sign a consent form saying you agree to the treatment.

- The **Nurse Practitioners (Julia and Liz)** will tell you and your child about the whole treatment plan, what to expect and how to care for your child in a hip spica plaster at home. She will liaise with other health professionals to ensure your child is fully prepared for their surgery. If you have any worries either before, during or after the surgery you can contact the Nurse Practitioner.

- The **Ward Nurses** will guide you in learning to care for your child with the hip spica plaster on.

- The **Anaesthetist** will tell you about what happens when your child has the general anaesthetic for their operation. He/She will also talk about the type of pain relieving medicine that is used to keep your child comfortable. This will probably be either an epidural or a morphine infusion.
• The **Occupational Therapist** ensures your child is discharged home safely. She will organise equipment you might need at home to help you care for your child, such as a wheelchair.

• The **Pain Nurse Specialist** advises the nurses and doctors on the best medicine to keep your child comfortable.

• **Play Specialist** helps your child prepare for the experience of having an operation and is on hand afterwards to help them adjust to the frame

**Will my child need any tests before the operation?**
An x-ray will taken of the hips on the day of admission and a blood test will be performed 2-3 days before surgery.

**Will my child need any pre operative treatment?**

For one week before the hip surgery your child will be nursed on Gallow’s traction.
Gallow’s traction gently stretches the soft tissues around the hip joints. This reduces the risk of circulatory impairment in the hip joint post operatively.

Young children generally tolerate the Gallow’s traction very well. Indeed they often roll over and twist themselves up in the traction!

It is necessary for the child to eat lying down and so more solid foods such as toast, may be easier. It is possible to continue breast-feeding, but it does require the mother to lean towards the child in the cot.
What does the operation involve?

The operation includes four events: Arthrogram, Tenotomy, attempted Closed Reduction or Open Reduction. All events occur during the same operation and under one anaesthetic. Your child will be in theatre for approximately one hour, but away from the ward area for up to three hours. This is because all children stay in the theatre recovery area until they are fully awake. At the Anaesthetists discretion you are allowed to accompany your child to theatre and will be called to attend when he/she has awoken from the anaesthetic.

**Arthrogram**

The first stage, an Arthrogram, involves injecting a dye into the hip joint and then taking an x-ray. This gives the Consultant more information than a standard x-ray and helps to decide if a closed or open procedure will be needed.

**Tenotomy**

One of the tendons holding the hip joint is cut. This makes the femoral head (ball of hip) easier to manipulate into the acetabulum (hip cup).

**Closed Reduction**

The Consultant manipulates the femoral head (ball of hip) into the acetabulum (hip cup).

**Open Reduction**

Sometimes it is not possible to achieve a closed reduction. Because the femoral head is dislocated out of the acetabulum, the acetabulum fills with other body tissue and this mechanically prevents the femoral head from being manipulated back into socket. The open reduction involves surgically
opening the joint capsule and removing the obstructing tissue. The femoral head (ball of hip) is then located in the acetabulum (hip cup).

**What happens after the operation?**

Following surgery a hip spica plaster will be used to maintain your child’s hip in it’s corrected position. This plaster goes from the child’s chest down to the ankles of both legs. A large hole is left around the groin region for toileting purposes.

**Hip Spica Plaster**

Initially your child might be cared for on a wooden block. This allows air to dry the plaster. The plaster takes 24hrs to dry. More advice on how to care for your child in their plaster is given further on.
Pain-Relieving Medicine

Your child will have either an epidural or a morphine infusion to keep them comfortable as well as oral pain medicine if required. The medicine in the epidural may mean they do not know when they need to pass urine. If your child wears nappies then this is not usually a problem. Older children who have bladder control may need assistance to pass urine. A catheter (a tube into the bladder) may be needed to drain the urine from the bladder. This will be removed when the epidural is stopped, usually after 2-3 days.

When the epidural or morphine infusion is stopped other oral painkillers will then be given. Often by the time children go home from hospital they do might not want any painkillers.

Initially, your child will have a drip to give them fluids. This is removed when they can eat and drink normally again, and the epidural or morphine infusion is discontinued.
CT Scan

A CT Scan is performed the next day to confirm that the operation has been successful and that the hip has been reduced.

The CT Scan takes approximately ten minutes and is not painful.

Dynacasting

The hip spica plaster is then covered with a layer of fibreglass plaster. This is stronger than conventional plaster of paris and protects the plaster. This is necessary as some children crawl in the hip spica and weaken the plaster.
Sleeking
A waterproof tape is placed around all the edges of the hip spica to prevent rubbing and to help protect the plaster from soiling. This can be changed.
Caring For Your Child In A Hip Spica Plaster

The initial hip spica plaster will be retained six weeks. For your child’s comfort it is very important to keep the plaster clean and dry. Also if the plaster becomes wet or damaged then it will stop holding the operated hip in its corrected position, and this will affect the success of the operation.

**Nappies**

To put a nappy on a child who is in a hip spica cast, use a disposable nappy with the sticky tags removed. You should use the largest nappy that will fit within the spica. Lay the child on their back; tuck the nappy between the skin and plaster at the front of the groin hole. Turn the child on their front and tuck in the rest of the nappy.

The nappy must be checked frequently and changed if wet or soiled. If a sodden nappy is left in place then the urine will soak into the plaster, making the plaster wet and possibly causing skin sores. This will weaken the plaster and cause it to smell.

**Toileting**

If the child is toilet trained then urine bottles and bedpans can be used. For girls a piece of toilet paper can be placed over the groin area and used as a wick to direct urine into the bedpan. Urine bottles and bedpans can be loaned from the Red Cross.

**Clothing**

Generally clothing needs to be large enough to fit over the hip spica. For older girls dresses and skirts are ideal, and for older boys tracksuit trousers that have had the sides cut and fasteners applied are suitable. Knickers and
pants will need to be adapted to fit over the plaster. The sides need to be cut and Velcro or ties need to be sewn on.

**Handling Your Child**

Carers frequently comment that they feel unsure about handling their child after a hip spica plaster has been applied. While on the ward the Nurses, Occupational Therapist and Physiotherapist can show you correct ways of picking your child up, turning and positioning them. There will be plenty of opportunities to handle your child with guidance from staff before you are discharged from hospital.

It is important to realise that the hip spica has increased your child’s weight tremendously. It is best to limit the number of times you carry your child by planning your moves. If you have a bad back please make the staff aware of this.

It is important to apply the following rules when lifting your child. Ensure you do not bend your back, but bend at the knees and keep your back straight. Keep their weight as close to your body as possible.

**Seating**

At first children in hip spicas look impossible to seat. However there are various pieces of equipment available to assist with seating.

- Beanbags are extremely useful as they mould around the child providing support.
- Pillows are helpful in propping up children in bed or when on the floor, or sofa.
- Hip spica chair, this is for older children and can be purchased from STEPS (address at back of booklet)
The hip spica plaster makes it difficult for your child to independently turn over. Carers frequently have to assist. It is very important that you do not lift your child using the bar, it is not designed to take the weight of your child and it may come away resulting in your child being dropped.

A hoist and sling can be loaned to assist with handling older children or for carers with bad backs. This can be arranged by the Occupational Therapist through Social Services.
Night Times
After discharge from hospital it can take your child a little to re adjust to his/her normal night time routine. Most children return to sleeping in their own bed or cot. However, if they do fit because the plaster is too wide a mattress can be placed on the floor. Depending on the weight of the child, the width of the spica and the physical condition of the carer it may be advisable to bring the child’s bed or mattress downstairs.

It is important to remember that the plaster of paris acts as a natural insulator. Therefore your child may become hot at night and need a thinner quilt or fewer blankets. Some children have found that lying on a sheepskin rug during hot summer nights has assisted with cooling as it encourages better air circulation.

Children may have difficulty moving themselves at night and make wake or cry for assistance.

If your child wears nappies at night, it is advisable to raise the head of the mattress by placing a pillow under the head of mattress. This places the child on a gradual slope so that gravity encourages the urine to drain into the nappy and not soak back up into the plaster.

Mobility
Before you are discharged from hospital the Occupational Therapist will try to ensure your child has a buggy available. You may wish to use your own pushchair or buggy. The Occupational Therapist will need to assess if your child in your pushchair/buggy to ensure that he/she fits safely with the hip spica on. Often additional pillows are placed behind the child to give more support and comfort.
Car Travel

Under four years of age children may travel by car if they are correctly seated in a weight appropriate car seat. Occasionally children can sit in their own car seats by just lengthening the shoulder and groin straps. The car seats need to have low sides to accommodate the plaster.

The Occupational Therapist will assess your child in their car seat for safety.

If the position and shape of your child’s plaster does not allow for a safe positioning in a car seat then hospital transport will be arranged. This can be organised for discharge and admission to hospital, and attending hospital appointments.
On Going Management – Plaster Changes

The length of time your child needs to be plaster is dependant on the type of surgery achieved – closed or open reduction.

Three types of plaster will be used for your child – Hip Spica, Broomstick Plaster and Night Splints.

Hip Spica Plaster

Broomstick Plaster – Front View
Each plaster is left on for six weeks. If your child has had a closed reduction then a second hip spica plaster is applied. This is because the reduction was achieved with less surgical intervention and requires a longer healing time.
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<th>Open Reduction</th>
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<td>6 weeks broomsticks</td>
<td>6 weeks broomsticks</td>
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<tr>
<td>6 weeks night splints</td>
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Each plaster change means a day case admission to the children’s day ward. The plaster change is performed under a general anaesthetic in theatre. You can go home later the same day.

When the plaster is changed from a hip spica to broomstick plasters your child will be able to flex at the hips and sit. Some children find this change in position uncomfortable because the hips feel a little stiff. This is normal and usually settles in a few days.

When your child changes from a broomstick plaster to night splints, he/she can mobilise freely during the day. Some children may take a week or two to recommence crawling or walking. You may notice that your child walks with a wide legged gait initially. This is normal.

**Out Patient Follow-Up**

Once the surgical programme is completed your child will be given a six-week outpatient appointment. This will be followed by regular outpatient reviews until your child is discharged.
Contact Numbers
Liz Wright and Julia Judd
Paediatric Orthopaedic Nurse Practitioners:
Office: 023 8079 4991
or switchboard: 02380 777222, ask for bleep 2641

Support Group
STEPS The National Association for Children with Lower Limb Abnormalities
www.steps-charity.org.uk
Postal address: STEPS, Lymm Court, 11 Eagle Brow, Lymm, Cheshire WA13 0LP
Help-Line: +44 (0)871 717 0044

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