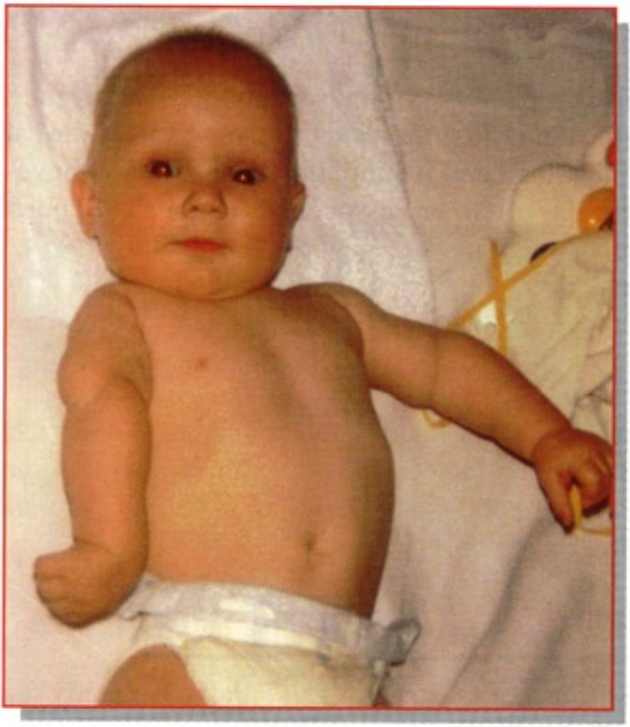
ERB'S PALSY

ASSOCIATION OF IRELAND



A National support group for children and adults with obstetrical erb's palsy

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What is Erb's Palsy ?

Erb's Palsy is a term used to cover a number of paralyses to the arm. There are three main categories that this covers.

1. Erb's Palsy

This is a paralysis of the fifth (C5) and sixth (C6) cervical nerves. Outward signs are that the arm is turned towards the body, the elbow does not bend and the hand is in a "waiters tip" (turning backwards) position.

2. Klumpke's Palsy

This is a paralysis of the seventh (C7) and eight (C8) cervical and first thoracic (T1) nerves. Outward signs are that the hand is limp, the fingers do not move and there is often an associated Horner's Syndrome. Horner's Syndrome is when the eyelid droops, the cheek does not sweat and the pupil is smaller than the unaffected eye.

3. Complete Brachial Plexus Paralysis

This is when all five nerves, termed as the brachial plexus, are affected. The entire arm from the shoulder down is paralysed, there is often an associated Horner's Syndrome.

How does Erb's Palsy occur ?

The cause of Obstetrical Erb's Palsy is mainly due to trauma at birth. Although large (macrosomic) babies are more likely to develop shoulder dystocia because their shoulders become trapped under the pubic bone, most cases of Erb's Palsy do not occur in large babies. The Palsy occurs when there is traction on the shoulder underneath the pubic arch. This can often cause the head to stretch too far away from the shoulder and hence tension is placed on the brachial plexus.

This tension may stretch or even pull apart the fibres within one or more nerves. Extreme force on the plexus may rupture nerves entirely or tear them from the spinal cord.

How do I know how severe the injury is?

A high proportion of babies (approx. eighty percent) recover in the first three months, however, there are twenty percent who are left with some residual paralysis. It is believed that recovery can be gauged by the contractions of biceps and deltoid muscles. Recovery may be:

- ***Complete:***
  Start at one month and are normal by two months.

- ***Good:***
  Start by three months and are complete by five months.

- ***Average:***
  Start after three months.

However, having said that, recovery largely depends on the extent of injury. The nerves within the brachial plexus can be simply bruised, stretched, or if the injury is severe they can be torn away at the spine.
Each child is an individual and can have only bruising, a mixture of bruising and tearing, or tearing and total severing of the nerves.

What treatment is available?

Babies are left untreated for the first 2 - 3 days of their life so that the nerves are given a chance to recover. Before the baby goes home physiotherapy is commenced.

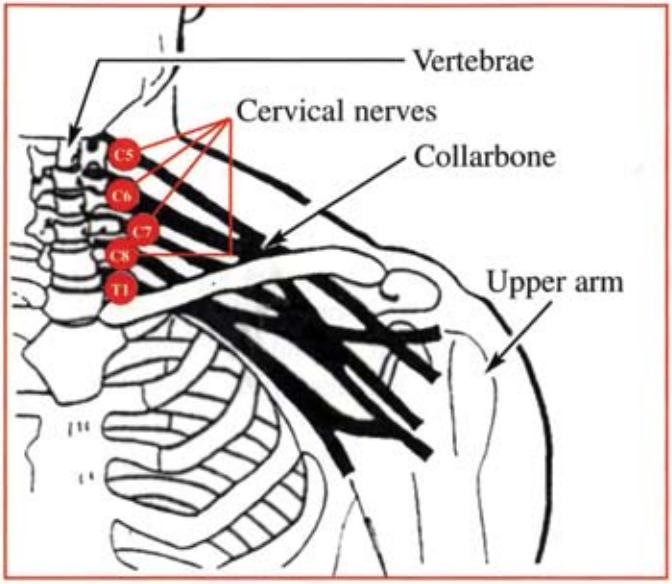
Once the baby is at home, a complete passive range of movement is started, to keep the joints and muscles healthy. This treatment is provided by the physiotherapist. The affected arm should be moved so that it mimics the normal movement of the good arm.

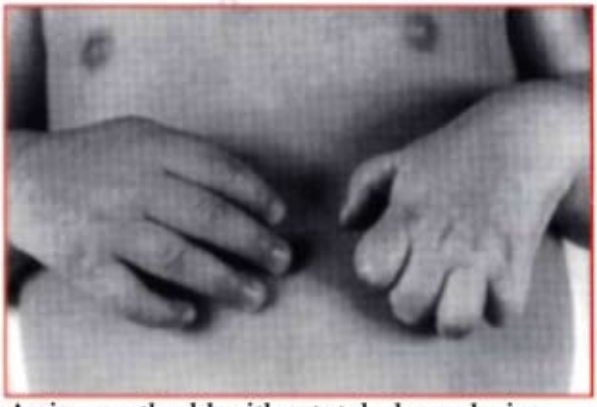
The baby should be encouraged to feel the arm and maybe suck the fingers, this is done so that maximum sensation can reach the brain and the baby does not forget it has another arm to use. It is not advised to pin the baby's arm to the cot or to use any kind of splint which restricts the arm's movement.

If after two months the affected arm is showing no sign of recovery it is recommended that the child is seen by a specialist in this form of injury. There are many techniques that can be used to help the arm.

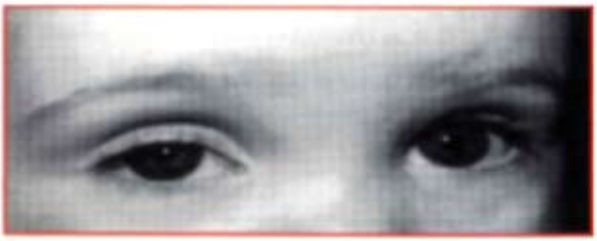
Some of these are:

- Nerve conduction test to ascertain the state of the nerves
- Nerves are taken from donor sites and are used to graft the nerves that have been either damaged or torn.
- Muscle transfers into the shoulder to give the arm a wider range of movement.
- Tendon transfers to the wrist, to give the wrist and fingers more movement.
- Neuromuscular stimulators may contribute to the prevention or retardation of disuse muscle atrophy.





A six month old with a total plexus lesion from birth. Copyright: Howard M.Clarke MD.PHD.FRCS(C) Christine G. Curtis BSc.P.T.



Horner's Syndrome in a baby with T1 avulsion.
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In summary

A large proportion of children fully recover functional use of the arm fairly quickly or certainly within the first three months of their life, but the remainder that do not, depending on the severity of the injury, can have a permanent and lifetime disability.

It is important to ascertain the extent of the injury as soon as possible, the sooner you can get to see a specialist in this field the better. Early treatment particularly in the first year, can have a very significant impact on recovery. However, there are other therapies available for older children which improve long term function and posture of the arm.

Note: This literature covers the full extent of the injury and some parts may not be relevant to you or your child

The Erb's Palsy Association of Ireland was set up by parents of children with Erb's Palsy to provide information and help to other parents whose children have this condition. The Association is run solely by these parents and is striving to achieve a better recognition and understanding of the nature, causes and proper treatment of the condition.

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