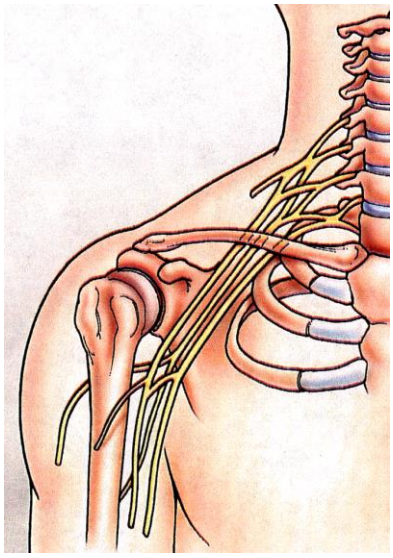
Obstetrical Palsy

The brachial plexus is made up of 5 nerves that come off of the spinal cord in the neck split, criss-cross and at the level of the armpit finally become the distinct nerves to the shoulder, arm, wrist and fingers. An obstetrical palsy is a weakness, decreased motion, or diminished feeling as a result of injury to these nerves. Obstetrical palsy may occur 1 in 1000 live births.

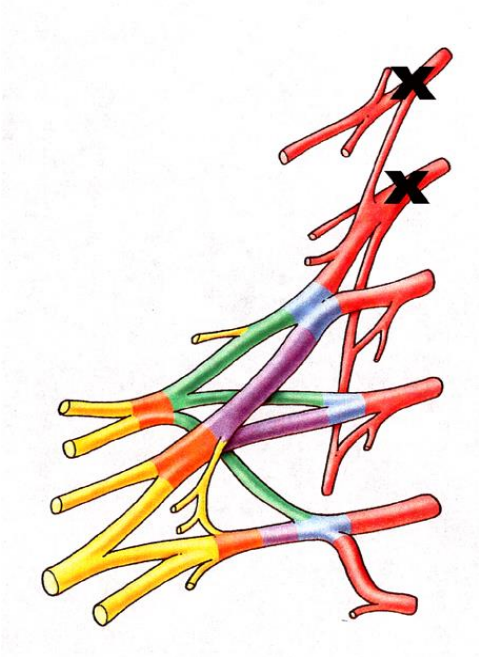


Injury Level

There are two locations where the nerve may be injured during the delivery. In a “preganglionic” injury, the nerve is pulled out of the spinal cord partially or completely. If the stretching occurs after the ganglion, it is called a “postganglionic” injury. The nerve may be injured partially (severely stretched) or completed (separated into 2 pieces).

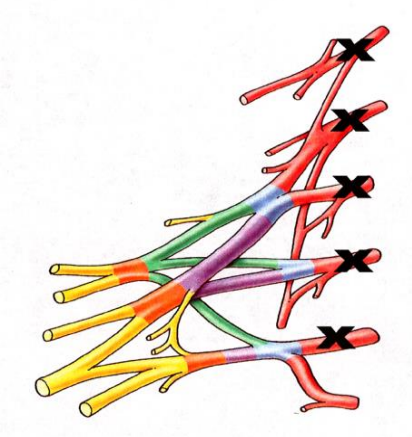
Clinical Patterns

Infants with an Obstetrical palsy will fall into two common clinical patterns – Upper arm (Erb’s palsy) or Total arm (Erb-Klumpke palsy).



With Erb’s palsy, weakness in the shoulder and elbow muscles is present due to injury of the upper 2-3 nerves. The elbow does not bend and bring the hand to the mouth normally. The weakened shoulder muscles do not pull the arm away from the baby’s body when the baby is startled.

In the Erb-Klumpke palsy, the entire arm and hand are weakened or paralyzed. In some severe cases, the eyelid may droop and the pupil of the eyeball is larger than on the other side. The 5 nerves are affected to varying degrees in the Erb- Klumpke palsy.



Treatment Options & Prognosis

Therapy is prescribed for the newborn with an obstetrical palsy. A therapist may coordinate the care designed to reduce hypersensitivity of the injured arm and maintain flexibility in the shoulder, elbow, wrist and hand. Therapy has not been shown to hasten nerve recovery to date.

Reexamination of the infant during the first 6 months of life is important as there is no single test that can predict nerve recovery. In general, the prognosis is more favorable if:

An Erb's palsy is present, rather than Erb-Klumpke.
The elbow flexes the hand up to the mouth by 3-4 months of age.
Drooping eyelid or dilated pupil are not present.

Recovery of the nerve once it starts may not be complete for 1-3 years. Few children will have a full recovery and a normal arm after experiencing an obstetrical palsy but most will be able to enjoy play and school activities.

A small number of patients will not demonstrate any return of muscle function after 3-6 months of age. For these few patients, MRI and myleograms are performed to determine if there is a possibility of sewing nerves back together that have not healed. With the Erb palsy, slight improvement in elbow flexion has been reported. With the Erb-Klumpke palsy, protective sensation may result. Another group of children may benefit from muscle-tendon surgery to compensate for permanently weakened or paralyzed muscles. Surgery may also be proposed if joints are lacking proper alignment due to abnormal muscle pull. Bony surgery is considered in school age children if they are unable to rotate their arm outward. Most children with residual weakness are followed until they complete all growth.