

CLUB HAND

There is distortion of the hand at the wrist from the long axis of forearm. It could be either excessive radial deviation or ulnar deviation depending upon the congenital absence of radius or ulna. The absence of radius is more common and may be associated with absence of thumb. (called radial club hand, radial dysplasia, or radius deficiency).

CLINICAL FEATURES:

- Usually the wrist assumes the position of flexion along with the deviation to the radial or ulna side.
- The basic problem is the weakness of grasp due to the mechanical disadvantage imposed upon the line of action of flexor group of muscles.
- There is marked soft tissue tightness or contracture on the side of deformity.

CAUSES:

- Doctors and scientists do not know why some children are born with this condition. Some theories have suggested that it could be due to compression of the uterus and blood vessel injury.
- Radial longitudinal deficiency is associated with several congenital syndromes, including those affecting the heart, digestive system, and kidneys.
- It has also been linked to some chromosomal abnormalities, including Down syndrome and Trisomy 18 and 13.

TYPES:

Type 1- can move their hand normally. They usually do not need surgery unless it is necessary to correct an underdeveloped thumb.

Type 2- the wrist bends inward, and the ulna bows out. Children with this type often have an underdeveloped thumb.

Type 3- most of the radius bone is missing. The wrist bends inward more severely and the hand has limited support. The ulna is bowed. Most children with this type have an underdeveloped or missing thumb.

Type 4 radial longitudinal deficiency is the most common and most severe form. Children with this type are missing the radius bone and have significant shortness in the forearm. They may also have limited range of motion in their elbow. Most children with type 4 have an underdeveloped or missing thumb, and may have differences in their other fingers as well.

TREATMENT:

In mild cases - Passive stretching of the contracted soft tissues followed by immobilization in a specially fabricated splint which keeps the hand in overcorrected position is advised.

In moderate cases – Here forcible manipulation under GA (wrenching) is planned. Splint and regular session of passive stretching are given.

In severe cases – Surgery is planned. The surgical treatment includes centralization of ulna in line with the third metacarpal. This alignment is maintained with an internal fixation and a plaster cast is applied for a period of 6 months.

POSTOPERATIVE MOBILISATION:

- Maintenance of wrist in overcorrected position. Ideally the splint should be prepared before surgery leaving the minor adjustment to be made during actual fitting.
- Session of gentle relaxed passive movements towards overcorrection as well as wrist extension should be given.
- Strengthening exercises should be given for muscle group antagonistic to the side of deformity.
- Emphasis on the functional use of the hand with splint needs to be educated and repeated several times.
- Gradual weaning of splint to be done if the correction achieved is maintained voluntarily.