

Diaphyseal aclasis, severely migrated Lt radial head with radial bow deformity and ulnar shortening with deformity-A case report treated by Ilizarov technique

Keywords: diaphyseal aclasis, ulnar shortening, congenital dislocation, radial deformity, Ilizarov

Introduction

Congenital dislocation of the radial head in posterolateral dislocation is progressive and is a common deformity. Radial head is bowed and at wrist radial deviation is restricted and ulnar deviation is increased. Diaphyseal aclasis produces deformities of the forearm, creating problems in the elbow which is ugly to see as well as in the wrist; this case that we treated is severely deformed case of a 12 years old girl who is skeletally immature patient. We treated this case by Ilizarov technique by pulling down the radial head gradually upto the capitellum and second stage surgery is done by changing the Ilizarov frame and doing corticotomy in the upper ulna by putting two 1.5 olive wires in two directions, which is pulled down up to the distal radius.^{1,2}

X-ray findings

Lt radial head is 4 cm migrated upward with bowed radius and deformity and 5 cm shortening of ulna in relation with radius distally.

Classification:

We follow the classification of Masada and Ono in MHE.

Type I: Ulna is short, osteochondroma formation at the distal ulna.

Type IIA: Ulna is short, osteochondroma formation at both proximal radius and distal ulna, radial head dislocated.

Type IIB: Ulna is short, osteochondroma formation at the distal ulna, radial head dislocated.

Type III: Radius is relatively shorter to the ulna, osteochondroma formation at the distal radius.

Patients and methods

We treated this case in presence of kurgan, Russian Specialists with Prof. V.I. Shevtsov (former Director of RISC, RTO), Prof. K. I. Novikov, Prof. Denis Mokhovikov and Indian orthopaedic surgeons including Prof. Manish Dhawan of Sir Ganga Ram Hospital, Delhi and Dr Shamsul Hoda from Patna and other Kurdistan, Iraq Prof Omer Barawi and Uzbekistan specialists Dr Habib, Mohammad Hani Alsharif and Dr Sharof Davirov on the day of 25th Anniversary of Bari-Ilizarov Orthopaedic Centre on December 29,2022 we operated this case after evaluating preoperatively. We planned the case how to do the surgery, because it is not a normal case in compression with other diaphyseal aclasis. We thought about the quality of life and complications that may happen.

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Discussion of this difficult diaphyseal aclasis case with foreign faculties.

Procedure

1. We pulled down the radial head by introducing the three rings, in proximally and distally 3rd one in the wrist.
2. Distraction of radial head is achieved by closed controlled coordinated stretching to reduce the radio capitellar joint dislocation.
3. We must be conscious to see the normal radio capitellum joint and distal radio ulnar relationship.
4. We have lengthened the ulna in this case properly to avoid future growth discrepancy and epiphysis are carefully preserved.

5. Lengthing and deformity correction is done by Ilizarov technique by doing coricotomy and placing 1.5 olive wires from both sides of ulna. On the 2Nd day we started distraction of ulna, corticotomy is done in the maximal ulna and radial head is brought down to the capitellum.^{3,4}

Discussion

A congenitally migrated radial head irreducible manually or surgically because of adaptive changes in the soft tissues and the absences of normal surfaces for articulations with ulna and humerus.



Case I:

A. Prof. V.I. Shevtsov and Prof. M.M. Bari with the patient at Bari-Ilizarov Orthopaedic Centre.

Open reduction of upper migrated radial head and reconstruction in childhood are not advised. Any resection of the radial head should be postponed until growth is complete. That is why Ilizarov technique is the best option and solution for this kind of diaphyseal aclasis and deformity correction.^{4,5}

Conclusion

Ilizarov fixator is an effective and reliable method of treatment for diaphyseal aclasis and deformity.

- B. Clinical picture – 12yrs. Old girl showing a marked severely migrated Lt radial head with radial deformity and ulnar shortening with ulnar deformity.
- C. Before surgery radiograph of Lt radius and ulna.
- D. Pre operative discussion among the faculties of foreign countries (Prof.V.I. Shevtsov, Prof. K. Novikov, Prof. Denis Mokhovikov, Prof. Manish Dhawan, Prof Omer Barawi, Dr Shamsul Hoda, Dr Habib, Dr Sharof Davirov, Dr. Akansha Sinha and Dr Sheshagiri Venkateshaiah).
- E. During surgery in O.R (Bari-Ilizarov Orthopaedic Centre).
- F. Radiograph with Ilizarov in situ after two months treatment.
- G. Process of distraction of radial head.
- H. Doctor is checking patient's condition
- I. Radiograph of proximal corticotomy of ulna and distraction is seen, distal radio ulnar joint is maintained.
- J. Doctor with smiling patient.
- K. Clinical appearance of patient after 7 months.
- L. Radiographic result, full correction is achieved after 7 months to the surgery.
- M. Doctor and Patient are smiling after full correction of Lt. diaphyseal aclasis.

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Conflicts of interest

The authors declare no conflicts of interest.

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