

A Neglected Unusual Galeazi Fracture Dislocation In 12 Years Child: Management

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Abstract

A galeazi fracture is defined as a fracture of the shaft of the radius with dislocation of the distal radioulnar joint (DRUJ). Isolated radial shaft fractures with or without DRUJ dislocation in children are unusual in clinical practice. If there is fracture the degree of angulation is measured and accordingly managed. A 12 years boy came to the casualty department of Community Based Medical College Hospital Bangladesh (CBMCH,B) with the history of fall from bicycle on out stretcher right hand 5 years back, diagnosed to have fracture shaft of right radius. X-ray examination revealed old fracture at the junction of the middle and lower third of right radial shaft with feature of nonunion with volar angulation 30° (180-150°) and interosseous angulation 15° (180-165°). Patients was operated by open reduction and internal fixation (ORIF) of the fracture using dynamic compression plate (DCP) and screws and we corrected the angulation to near normal status and also correction of DRUJ done to its near normal anatomy. Postoperatively wound healed well and patient achieved full range of motion by three weeks. Radiologically the fixation was satisfactory and at the 6 weeks fracture was united. In conclusion, an old unusual galeazzi fracture dislocation in a child below 14 years with volar / dorsal / interosseus angulation more than 15° and rotational angulation more than 30° must be managed surgically to get near normal anatomy of bone as well as near normal range of motion.

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Key words:

Introduction

Fracture of the forearm are common orthopaedic injuries in children^{1,2,3,4}. Accounting for 30% to 50% of all pediatric fractures^{5,6,7,8}. About 18% of all forearm fractures occur in the shaft of the radius and the ulna^{9,10,11}. In the forearm either both bones or one bone and one radioulnar joint (monteggia and galeazzi lesions) are typically injured and isolated fractures are relatively uncommon¹². Therefore single bone fractures should always raise suspicion regarding additional injury to the proximal or distal radioulnar joint^{13,14,15}. A few papers state that isolated dislocation of the DRUJ and galeazzi fractures are unusual in children^{16,17,18} and the diagnosis can therefore be overlooked^{18,19}. The galeazzi fracture, which is named after the Italian surgeon Riccardo Galeazzi was first described by cooper in 1822. According to voigi and Lill²⁰, the typical mechanism of injury is described as a fall on an out stretched hand in hyperpronation²¹. In children, this fracture occurs with an incidence

of 0.3% to 2.8% of all forearm fractures^{22,23}. The peak incidence occurs between the ages of 9 and 13 years²³.

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In the pediatric population, good results after closed reduction and casting have been reported¹³. The gold standard of conservative treatment in children is above elbow casting in supination²⁴. But our case was 5 years old maltreated case. So operative treatment is the only treatment option.

Case Report

A 12 years boy came to the casualty department of community Based Medical College Hospital Bangladesh as out door patient with the history of fall from bicycle 5 years back and there by fracture of right forearm bone. He was treated by kobiraj (Traditional healer) and child was reasonably well; but the mother of the child complain of painless swelling and deformity in lower 3rd of right forearm for one year. On examination non tender subcutaneous bony swelling in the medial aspect at the junction of the middle and lower third of right forearm and pronation & supination was restricted. X-ray of the right forearm revealed anteromedial angulated fracture of the shaft of the right radius, volar angulation was 23° (Fig. I) and interosseous angulation 15° (Fig II) and also revealed dislocation of DRUJ and also show features of non union. This was a old maltreated, neglected case and open reduction and internal fixation (ORIF) was the treatment of choice. The ends of the proximal & distal fragment of the fractured radius are osteomized and a fragment of ulna also osteomized. ORIF by DCP & Screws were done for fractured radius and ORIF by 1/3rd tubular plate and screws were done for the iatrogenic fractured ulna. By these procedures we corrected the angulation and DRUJ to near normal status (Fig.III). About 1.5cm shortening of the forearm bones may be present but clinically no obvious shortening. Postoperatively wound healed well, excrcises started two days after surgery and patient achieved full range of motion by three weeks. Radiological fixation was satisfactory and at 6 weeks fracture was united.

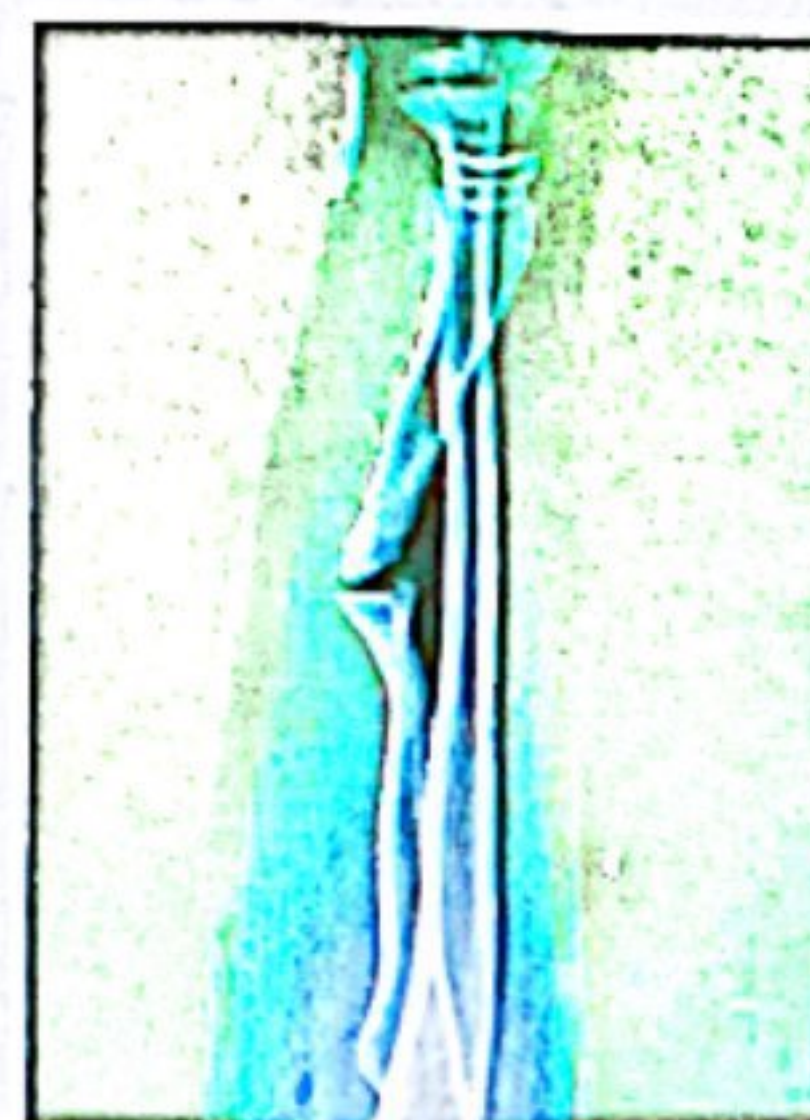


Figure-I



Figure-II



Figure-III

Discussion

Galeazzi fracture dislocation in children are unusual in clinical practice. Our case is a very rare as it was a five years old, maltreated neglected galeazzi fracture with nonunion. Deformity and agnulation is so much that fractured radius crors the ulna and palpable subcutaneously in the medial border of forearm. Fractured radius bowed medially concordant with walsh et al²³ the median age

of the patient was 11 years with the majority being male. In addition, it is accepted that the radius fracture accompanying the galeazzi lesion is located often at the junction of the middle and distal thirds of the bone²⁵. Our patient was 12 years boy and fracture being located at the junction of middle and distal third of the right radius. In adult, galeazzi fracture usually require operative treatment. Numerous authors stated a considerable rate of secondary displacements and nonunion may results in case of conservative treatment^{13,26,27}. In contrast to the adult population the treatment of galeazzi lesions in children usually has a good out come after conservative treatment with above elbow cast immobilization²⁸. Incomplete fractures bowing fractures and intact periosteal structures provide residual stability after bone trauma in children. Our case is 5 years old, unusual, maltreated galeazzi fracture with fractured radius bowed medially and angulated about 45° from the long axis of radius. So surgical treatment is the treatment of choice of this case.

Proximal and distal fragments of the radius which are bowed to the ulnar border of forearm are taken by osteotomy. A segment from the ulna was taken. This iatrogenic fractured ulna was fixed by 1/3rd tubular plate & screws. Segment of ulna was impregnated between proximal and distal fragments of radius. Radius was fixed by ORIF with DCP & Screws.

Conclusion

Galeazzi fracture in children below 14 years with volar/ dorsal/ interoscosus angulation of more than 15° and rotational angulation of more than 30° should be corrected surgically even in recent case to get the near anatomy of the bone & normal range of motion. In an old case operation is mandatory. So our patient a 12 years old boy with 5 years old radial shaft fracture with features of non-union and associated with DRUJ dislocation was operated to correct angular deformities as well as correction of DRUJ to near normal anatomy which was very much justified.

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