

3-21-2023

A CASE OF GALEAZZI FRACTURE SUBLUXATION OF LEFT FOREARM IN PAEDIATRIC AGE GROUP

Sauparna Dey

JSS Academy of Higher Education and Research, sauparna512email@gmail.com

Follow this and additional works at: <https://rescon.jssuni.edu.in/djcm>



Part of the [Diseases Commons](#), [Health Information Technology Commons](#), [Medical Education Commons](#), [Medical Sciences Commons](#), [Medical Specialties Commons](#), [Mental and Social Health Commons](#), [Psychiatry and Psychology Commons](#), and the [Public Health Education and Promotion Commons](#)

Recommended Citation

Dey S. A CASE OF GALEAZZI FRACTURE SUBLUXATION OF LEFT FOREARM IN PAEDIATRIC AGE GROUP. *Digital Journal of Clinical Medicine*. 2023; 5(1): 33-40. doi: <https://doi.org/10.55691/2582-3868.1128>

This Case Report is brought to you for free and open access by Research Connect. It has been accepted for inclusion in Digital Journal of Clinical Medicine by an authorized editor of Research Connect.

A CASE OF GALEAZZI FRACTURE SUBLUXATION OF LEFT FOREARM IN PAEDIATRIC AGE GROUP

Abstract

A case report of a rare form of fracture- Galeazzi fracture subluxation in paediatric age group. Showing post operative progress of the patient, with a discussion on possible methodology of approaching such fractures. Correct management of the fracture is essential for proper healing and avoiding complications.

Keywords

Galeazzi fracture, paediatric fracture

Creative Commons License



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

A CASE OF GALEAZZI FRACTURE SUBLUXATION OF LEFT FOREARM IN PAEDIATRIC AGE GROUP

Dr. Sauparna Dey, Intern MBBS

Dr. Mruthyunjaya, MBBS, MS, DORTHO, Professor, Department of Orthopaedic Surgery,
JSS Medical College and , JSSAHER

History:

A 7 year old boy was brought to the hospital with alleged history of fall from bi-cycle.

He complained of pain in left forearm. The pain was sudden in onset, sharp stabbing type, progressive in nature.

It aggravated with movement, and got relieved with rest.

It was associated with swelling.

No h/o of pain in other parts of the body.

No h/o loss of consciousness

No h/o head injury

No h/o ear, nose, throat bleed

Examination:

GENERAL PHYSICAL EXAMINATION:

A 7 year old male patient is cooperative, moderately built and moderately nourished, appears well oriented to time, place and person.

VITALS:

BP: 120/80mm of Hg

PR: 90 beats/min

RR: 16 breaths/min

SpO₂: 99% at room air.

No pallor, icterus, cyanosis, clubbing, oedema or generalised lymphadenopathy.

RS: B/L Normal vesicular breath sounds

PER ABDOMEN: Soft, non-tender.

CVS: S1, S2 heard. No murmurs.

CNS: Conscious, oriented. No focal neurological deficits.

LOCAL EXAMINATION:

On examination, the patient came supporting his left upper limb. There was diffuse swelling of Left forearm which was tender to palpate. Styloid process of radius and ulna were at the same level with tenderness at inferior radioulnar joint

Range of movements of the Left Wrist and Left Elbow and forearm were painfully restricted.

There was no distal neurovascular deficit.

Investigations:

PRE-OP X-RAY:

X-ray of the left forearm showed Isolated fracture of Radius in the middle 1/3rd which was angulated anteriorly and displaced laterally. There is subluxation of distal radio-ulnar joint (DRUJ).



AP VIEW



LATERAL VIEW

Diagnosis:

GALEAZZI FRACTURE SUBLUXATION OF LEFT FOREARM

Treatment:

He was treated by open reduction and internal fixation with single 3.7 diameter Titanium Elastic Nail (TENS) introduced from the dorsal aspect of distal metaphysis proximal to distal radial epiphysis till the proximal radial epiphysis.

Post operatively upper limb is immobilised with above elbow plaster of paris slab (POP) with forearm in supination, to keep the DRUJ reduced, which was continued for a month. Prophylactic Antibiotics and Analgesics were given for 3 days post operatively. Above elbow slab was removed after a month and joints were mobilised by physiotherapy.

POST OP XRAY:

X-ray taken 2 months post surgery shows good union of fracture with **well** aligned distal radio ulnar joint.



AP VIEW



LATERAL VIEW

Status of Range of Movements 6 months post surgery:





Discussion:

Fractures of the forearm in children are pretty common orthopaedic injuries, which accounts for almost 30-50% of all fractures in paediatric age groups. Of this close to 18% occur in the shaft of radius and ulna. They are mostly of three types- plastic deformation, greenstick, complete diaphyseal fractures. They are more common distally than proximally.(1,2) These fractures are easy to manage in children as there is significant remodelling and incidence of non-union is rare.(3)

A Galeazzi fracture is a mid to distal radius fracture with a dislocation or subluxation of Distal Radio-Ulnar Junction(DRUJ). Galeazzi fractures result mainly from fall onto outstretched hand while wrist is extended and forearm hyperpronated. There are mainly two ways of classifying-

1. Based on position of Radius:

Type I- Dorsal displacement,
Type II- volar displacement.

2. Rettig ME and Raskin KB classification based on stability.

Type I- closer to wrist and associated with DRUJ instability in 50% cases
Type II- further from wrist with DRUJ instability in 5% cases.(4)

In the case of middle 1/3rd fractures of the forearm, the proximal fragment is balanced in a neutral position of rotation by the opposing action of supinator and pronator teres muscles, it is flexed by the biceps. The distal fragment is displaced and pronated by the pronator quadratus muscle, we can see this presentation clearly in the pre-op X-rays in this case report. (3) The forces that deform the DRUJ in galeazzi is mainly the brachioradialis, pronator quadratus and extensors of the thumb along with the weight of the Hand.(5)

Management of Galeazzi fracture:

In 1941, Campbell termed Galeazzi fracture the “fracture of necessity”, because surgery is necessary. If nonsurgical treatment is done in adults, it results in recurrent or persistent dislocation of the distal radio-ulnar joint. Closed reduction as an approach can only be considered in skeletally immature patients where casting can be done because of the enhanced viscoelastic nature of paediatric bone. In adults all fractures must be treated with open reduction and internal fixation. Static locked IM nails are only an option if they can fully control the deforming forces. (5)

Like other diaphyseal fractures, in diaphyseal forearm injuries operative management may be considered for those children nearing maturity. According to literature, for children less than 8 years, an angulation of up to 20 degree is acceptable, but in older children with less than 2 years of additional growth remaining, no more than 10 degree angulation is acceptable. (1)

In our case the patient is a 7 year old child with the following angulation.



AP VIEW



LATERAL VIEW

Here we can appreciate in the lateral view that angulation is 25.6 degrees, thus necessitating an open repair.

Overall complication rate in galeazzi fractures is close to 40%.

Common complications for open surgery are- infection, instability of DRUJ, re fracture, malunion, delayed union, synostosis, compartment syndrome and radial sensory nerve and posterior interosseus nerve(PIN) injury. (5)

References:

1. Guitton TG, Van Dijk NC, Raaymakers EL, Ring D. Isolated Diaphyseal Fractures of the Radius in Skeletally Immature Patients. *Hand N Y N.* 2010 Sep;5(3):251–5.
2. Hedström EM, Svensson O, Bergström U, Michno P. Epidemiology of fractures in children and adolescents: Increased incidence over the past decade: a population-based study from northern Sweden. *Acta Orthop.* 2010 Feb;81(1):148.
3. Herring JA. Tachdjian's pediatric orthopaedics: from the Texas Scottish Rite Hospital for Children. Sixth. Philadelphia: Elsevier, Inc; 2021. 1253–1261 p.
4. Johnson NP, Smolensky A. Galeazzi Fractures. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 [cited 2023 Feb 27]. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK470188/>
5. Galeazzi Fracture: Practice Essentials, Pathophysiology, Etiology. 2022 Mar 11 [cited 2023 Feb 27]; Available from: https://emedicine.medscape.com/article/1239331-overview?isSocialFTC=true%23a1?reg=1&icd=1ogin_success_gg_match_norm