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Clinical profile of patients with fracture of Clavicle

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Abstract

It is estimated that one in every twenty fractures is a clavicle fracture. In fact 44% of all shoulder girdle fractures are clavicle fractures. The importance of proximity to vital structures in the neck and thorax necessitates the early and proper management of these fractures. About more than threefold variation in porosity and moments of inertia were found along the length of the clavicle. The greatest porosity and moments of inertia were located in the variably shaped sterna and acromial ends. The central third is denser, smaller and circular.

Keywords: fracture of clavicle, clinical profile, age

Introduction

Clavicle receives its name from Latin word *clavicula* because the bone rotates along its axis like a key when the shoulder is abducted and it is roughly the same shape as roman door lock keys.

It is also called collar bone; it serves as a strut between scapula and sternum. It makes up part of the shoulder and the pectoral girdle and is palpable in all the people. Clavicle fractures are recognized easily and readily. They unite uneventfully with proper treatment. They are also associated with early and late complications. Clavicle is the most commonly associated fractures of childhood. It is estimated that one in every twenty fractures is a clavicle fracture. In fact 44% of all shoulder girdle fractures are clavicle fractures. The importance of proximity to vital structures in the neck and thorax necessitates the early and proper management of these fractures. About more than threefold variations in porosity and moments of inertia were found along the length of the clavicle. The greatest porosity and moments of inertia were located in the variably shaped sterna and acromial ends. The central third is denser, smaller and circular. Clavicular orientation is found to be cranio-caudal at sternal end and primarily antero-posterior orientation in acromial end. Based on cross sectional geometry, section module and estimates of flexural end torsional rigidity clavicle was found to be weakest in central third. It serves as a rigid support from which the scapula and free limb are suspended, an arrangement that keeps the upper limb away from the thorax so that the arm has maximum range of movement. Acting as flexible crane-like strut, it allows the scapula to move freely on the thoracic wall. Covering the cervico-axillary canal it protects the neurovascular bundle that supply the upper limb. Transmits physical impacts from the upper limb to the axial skeleton. Elevation of lateral part pulls costo clavicular ligament, subclavius, first rib and sternum and shoulder elevation occurs, brings thorax upwards and helps in respiration. It is useful in artificial respiration and exercises. After cleidectomy upper limb may fall downward and forward giving foreshortened appearance.

Methodology

Inclusion Criteria

- Middle one third clavicular fracture
- Bilateral clavicular fractures.
- Floating shoulder involving middle one third clavicular fractures
- Age more than 22 yrs

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Exclusion Criteria

- Open fractures involved in middle one third of clavicle
- Age more than 60 yrs.
- Lateral 1/3 fractures.
- Medial 1/3 fractures.

Follow Up

- X-ray taken immediate post-op.
- Follow up at 6 weeks, 3 months, 6 months & 1 year.
- Clinical status recorded using Constant & Murley scoring system.

Results

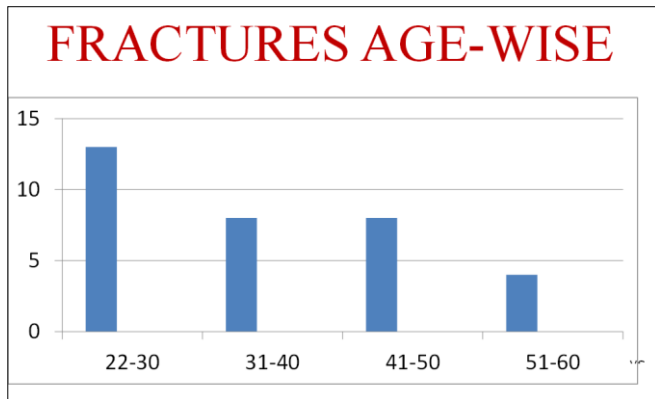


Fig 1: Fracture age wise

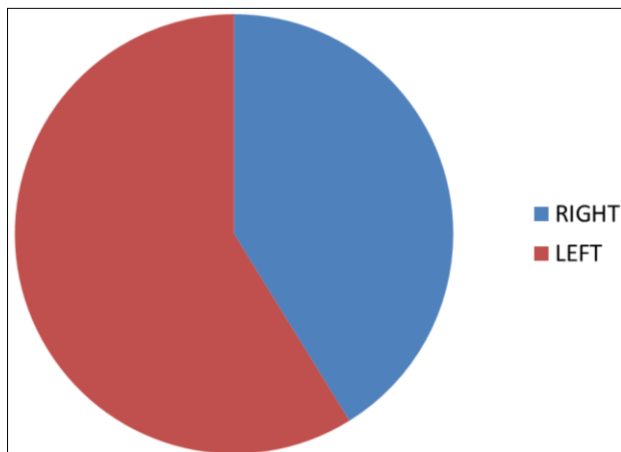


Fig 2: Side affected

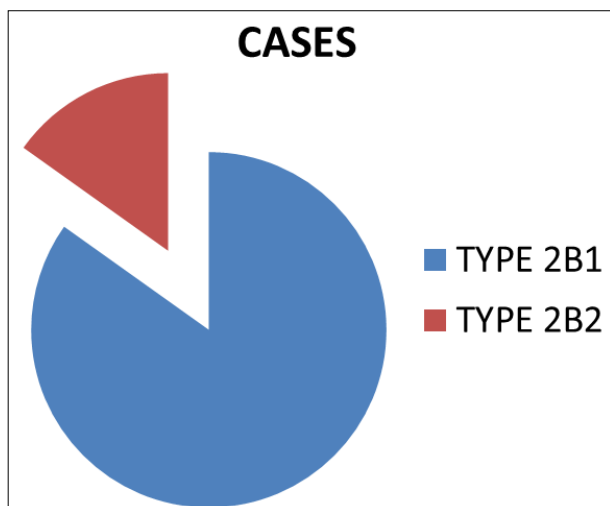


Fig 3: Classification

Table 1: Movements

| Movements | 6weeks | 3months | 6months/1year |
|--|--------|---------|---------------|
| Forward flexion>150 deg | 24 | 30 | 30 |
| Abduction > 150 deg | 24 | 30 | 30 |
| External rotation over head | 22 | 30 | 30 |
| Internal Rotation (upto D7 spinous process) | 11 | 27 | 28 |

Discussion

These patients belonged to a younger age group. (22-30 yrs). These patients had type II b1 (simple wedge fractures). 84.8% had excellent functional outcome according to the scoring system at the end of 6 months and after which there was no difference till the end of one year. One patient had implant breakage at the end of 9 months due to history of fall. 3.03% had keloid formation over the surgical scar. 30.3% had scar related pain in the first one month post-operatively. 18.18% had discomfort due to implant situ.

Conclusion

30.3 % of the patients had excellent functional outcome according to the scoring system at the end of six weeks.

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