Original Article

A COMPARATIVE STUDY OF TREATMENT OF FRACTURE SHAFT HUMERUS BETWEEN CONSERVATIVE AND SURGICAL METHODS WITH EMPHASIS ON CONSERVATIVE TREATMENT
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A COMPARATIVE STUDY OF TREATMENT OF FRACTURE SHAFT HUMERUS BETWEEN CONSERVATIVE AND SURGICAL METHODS WITH EMPHASIS ON CONSERVATIVE TREATMENT

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Abstract:
This is an era of developing mechanization, industrialization and rapidly moving two and four wheelers on poor quality roads in our country. Fracture shaft humerus is a common occurrence due to vehicular accidents, falls on play grounds, roads and industrial set up. They are usually associated with head injury, blunt trauma chest, abdomen and fracture of forearms. Our hospital has patient drainage from tribal districts like Dhule and Nandurbar. Most of these patients avoid longer durations of hospitalization following surgical treatment in view of losing their daily wages. In such situations it becomes very difficult to perform fixation of these fractures by using newer implants and techniques, and makes us to think over the alternative techniques like Arm to Chest strapping, U+AE slab and Hanging Arm cast. It is generally accepted that most of the fracture shaft humerus are healed by conservative means in all acceptable positions and gives satisfactory results.

Key Words: Fracture Humerus, Conservative treatment

Introduction:
The most acceptable classification of Fracture shaft humerus is:

a. Fracture above the insertion of pectoralis major (proximal humerus fracture)
b. Fracture below the insertion of pectoralis major & above the insertion deltoid (diaphyseal fracture)
c. Fracture below the insertion deltoid (distal humerus fracture)

Other classifications of general fractures such as Gustillo Anderson, AO/ASIF are also applicable for Fracture shaft humerus.

Materials & Methods:
Over a period of 18 months in Department of Orthopedics at SBH Government Medical College Dhule (Maharashtra), 40 cases of fracture shaft humerus were studied. On admission details of history about mechanism of trauma, symptoms and findings of clinical examinations were noted. X-ray examination and routine investigations and in some cases specific other investigations are performed in view of PAC and Physician’s fitness.

In 20 patients, who were having simple, stable & un-displaced fractures, conservative method was preferred and out of them 12 were treated by Hanging Arm, cast, 6 were treated by U+AE slab & 2 were treated by Arm to Chest strapping.

Rest twenty patients who were having compound, segmental, spiral displaced, comminuted fractures and the fractures associated with Radial nerve injury treated by Open Reduction & Internal Fixation by using Dynamic Compression Plate in which Anterolateral Approach was preferred in 12 cases and Posterior Approach was preferred in 8 cases.

Post operative physiotherapy and meticulous follow-up fortnightly for 2 months and monthly for 6 months was done. During follow-up patients were examined for signs of clinical and radiological union, time taken for union, and presence of complications like joint stiffness, infection and angulations. Patients were evaluated according to above criteria and results were graded as excellent, good, fare and poor.
Observations & Discussion:

In this study due to their occupations and habitat involving outdoor activities, males constituted 70% of the study group and 75% of them belonged to the age group of 11-50 years. As compared to Griend et al series we also observed that 62.5% cases had middle third diaphyseal fracture on left side and mechanism of injury was RTA. Prevalence of short oblique fracture was maximum (17 patients) followed by transverse fracture in 11 and spiral fracture, comminuted fracture and transverse fracture with butterfly in 4 patients each.

In the patients treated conservatively, angulations of more than 30 degrees and stiffness of shoulder joint of more than 30 degrees were observed in one patient each. As compared to Griend et al non-union was found in single patient due to distraction of Hanging cast, he was treated later by ORIF with DCP and BG. That means in only 10% cases functional status of patient was affected conservative method.

While in series of cases treated by surgical method, post-operative infection was observed in 20% and stiffness of shoulder and elbow of more than 30 degrees was observed in 30%. The rate of complication was 50% by surgical method and 25% by conservative method. The average time required for union by conservative method was 14.3 weeks and by surgical method was 17.4 weeks. 25% cases showed union in 12 weeks when treated conservatively while in 40% cases treated surgically. 20% patients had taken more than 20 weeks to unite when treated surgically as compared to only 5% cases treated conservatively. So 85% cases had taken < 16 weeks to unite when treated conservatively as compared to 60% cases treated surgically. This was due to the preservation of fracture hematoma and non-handling of surrounding soft tissues.

Associated Radial Nerve Palsy:

In our series of patients RNP was observed in 4 patients (10%) on admission and in single case (2.5%) after attempting closed reduction. Out of them in 2 cases there was fracture of middle third and in 3 cases fracture of distal third. As recommended by Holstein & Levis, in all 5 cases RN was explored by posterior approach. Out of 5 in 3 cases RN was found contused and in 2 cases it was found normal. Out of five in 60% complete recovery observed in 4-8 weeks, while in 40% partial functions were restored with some weakness of wrist and digital extensors by 24 weeks, who were advised to use Dynamic Koch-up splint.

Results:

Excellent results were observed in 60% cases treated conservatively and in 30% cases treated surgically. 40% cases treated conservatively had shown Good results as compared to 45% cases treated surgically. Fare and Poor results were found in 20% and 5% cases respectively in series of patients treated surgically while Fare and Poor results were not found in a single case in series of conservative method. This indicates that the conservative method gives superior results as compared to surgical method in study of series of these 40 patients.

Conclusion:

‘An ability to do surgery is not necessarily an indication for surgery’, keeping this in mind all simple fractures of shaft humerus without association with RNP should be given a liberal trial of conservative method. Surgical method should always be followed either on failure of conservative method or presence of features like compound fracture or associated RNP.

Fractures treated conservatively unite earlier than those treated surgically. Fractures of upper third and middle third unite satisfactorily when treated conservatively. Plating with
early exploration of RN, reduces incidence of shoulder and elbow stiffness because of early mobilization and hence gives good results due to early recovery of nerve function.

References:
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