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Clinical evaluation of ankle fracture at a Tertiary care hospital

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Abstract

Introduction: Typically, ankle fractures are the result of low-energy injuries involving a twisting mechanism. These injuries reflect the relative strength of the ligamentous components of ankle mortise compared with the bone.

Methodology: This cross sectional study was carried at a tertiary care hospital. The maximum follow up was 24 months and minimum follow up was 4 month with average following up of 10 months. All the patients were treated as indoor patient. A written informed consent was obtained before surgery.

Results: Fourteen patients (28%) had open fracture. Twenty four patients (48%) had sustained injury over right lower limb. Thirty eight percent of patients had sustained Supination External Rotation, Twenty six percent of patients had Supination Adduction type of injury. Sixteen percent and twenty percent of patient had Pronation Abduction and Pronation External rotation type of injury respectively.

Conclusion: In present study, incidence of bi malleolar fracture is more common

Keywords: ankle fractures, bi malleolar fracture, evaluation

Introduction

Ankle fractures are one of the most common injuries treated by orthopaedic surgeons⁷⁹. Since the 1950 there has been an increase in the prevalence of fractures about the ankle as well as increase in the severity of fracture in elderly individuals^[1].

Typically, ankle fractures are the result of low-energy injuries involving a twisting mechanism. These injuries reflect the relative strength of the ligamentous components of ankle mortise compared with the bone. Most ankle fracture occurs when a force applied to ankle, it displaces the talus beyond the normal elasticity of the ligaments. On the basis of position of foot and the direction of the force many classification have been described, the most popular being that of Lauge Hansen^[2].

Because of their high frequency and associated morbidity, ankle injuries place an enormous economic burden on society. Of the many injuries that occur, ankle fractures are increasingly common, trailing only hip fractures and wrist fractures in frequency among elderly patients, ankle fractures likely represent even longer proportion injuries. Surgical treatment of ankle fractures is frequently required and appropriate treatment and recognition of potential risk factors are essential for optimizing outcome. Since the mid-1970, there has been a general trend toward operative intervention in the treatment of more severe injury of ankle^[3].

Methodology

This cross sectional study was carried at a tertiary care hospital. The maximum follow up was 24 months and minimum follow up was 4 month with average follow up of 10 months. All the patients were treated as indoor patient. A written informed consent was obtained before surgery. All the patients were selected on the basis of patients having ankle fracture without distal neurovascular injury. Patients having foot injury in same limb and intra articular distal tibia fracture excluded from our study.

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Initial management

On admission detailed history was taken to know the nature of injury and detailed examination of patient was carried out including systemic examination to rule out associated injury. The vital parameters including temperature, pulse rate, blood pressure were recorded. The general condition of patient was stabilized. All patients were given Intravenous fluids as per need, tetanus prophylaxis and broad spectrum antibiotics parentally given and analgesics were administered as per need. Points on examination for fracture ankle with type of fracture, soft tissue status and distal neurovascular status were noted.

In open fracture, the size, extent and location of the wound, surrounding skin condition were noted. These wounds were thoroughly irrigated with plenty of saline and sterile dressing was applied.

Injured limb was immobilized with posterior below knee plaster slab. Once the patient was stabilized and all associated injury managed. Patient was sent for radiological examination. Roentgenogram of injured limb (tibia-fibula with ankle AP, lateral and Mortice views) were taken Roentgenogram of knee is taken to rule out other associated injury like fracture of upper third fibula. Fractures were then classified using Laug-Hensen classification

Results

Table 1: closed or open injury

Type of injury	No. of cases	percentage	Burwell's series
Closed	36	72%	94.80%
Open	type-1	12	5.20%
	type-2	02	

As it is evident from the above table, the incidence of open ankle injuries in our series is 28% whereas in Burwell's series it was only 5.20%.

Table 2: Type of Fracture

Classification type	Number of Case	Percentage	Joy <i>et al.</i> series
Supination external rotation	19	38%	41
Supination adduction	13	26%	14
Pronation external rotation	08	16%	20
Pronation abduction	10	20%	25

(Modified Lauge-hansen Classification)

In our series, the commonest fracture type that was found to occur was Supination external rotation type of injury.

Table 3: Number of Malleoli Fractured

	No. of cases	Percentage	Burwell's series (%)
Unimalleolur	18	36	18
Bimalleolur	22	44	49
Trimalleolur	10	20	32

In persene study, incidence of bi malleolur fracture is more common (44%) as in burwell's study it is (49%)

Discussion

In our study Supination External rotational injury is common (38%) which is comparable to other study [4].

In our series we find that the patients who are operated as early as possible after injury fare better than who are operated later.

This may be due to the following facts.

In our series most of patients (64%) were operated with in 48 hrs after injury while in Burwell's study, most of patients (60%) were operated within 24 hrs of injury. Thus excellent results were obtained due to early fixation after injury because early stabilization of fractured fragments hastens soft tissue healing and early joint mobilization and early ambulation decreases the morbidity considerably. In present study, incidence of Bimalleolar fracture is more common (44%) as in other study it is (49%) [5].

Out of 50 patients, 10 (20%) patients had intra operative complication, like damage to vain (8%) which were manage with ligation. Only 6 patients (12%) had difficult closure due to excessive swelling, and they all were managed with delayed closure after 48 hours, but in rest of the patient pre operative elevation, proteolytic enzyme active toe movement which reduced swelling significantly and wound was closed with relative ease.

In our series 7 patients developed superficial infection among them two patients had open fracture and so there were more chances of infection and they were controlled with broad spectrum parental antibiotic for 3weeks and surgical debridement. One patient had uncontrolled DM, which was managed by medical treatment for DM, broad spectrum parental antibiotic for 3weeks and surgical debridement. Four patients had closed fracture but as the tibia is superficial bone and it is not covered by muscles so, there is more chances of infection and they were controlled with broad spectrum parental antibiotic for 3weeks and surgical debridement. This infection rate is higher than other study i.e.5.2%⁶. It may be because in our study most of patient had high velocity trauma and compound fracture compare to reported series.

One patient in our study developed non union of fibula and after 6months patient is operated with replating and bone grafting and fracture was united uneventfully after 4months.

As the ankle is superficial joint and lateral and medial malleolus is covered with layer of skin and subcutaneous tissue in our study one patient had implant impingement and pain. In our study, in one patient, reduction is lost intra operatively due to osteoporosis and inadequate fixation of wires in opposite cortex.

The fracture is considered to have united if patient is able to bear full weight without pain at fracture site and if radiograph shows callus bridging at fracture site or obliteration of fracture line. The median union time in our study is 13weeks.

In our study most of patients (60%) returns to same work within 12 to 14 weeks after surgery. It is apparent that if fracture is reduced anatomically and fixed rigidly, the final outcome is better. Ankle joint being one of the weight bearing joint of the human body, comes under more stress while patient is either working or in squatting-like positions. Because of unequal proportion of the weight bearing axis of the rest of the body, if there is minimal defect in the reduction of the fracture fragment, the functional compromise increases manifolds than expected.

Conclusion

In our study most of patients returns to same work within 12 to 14 weeks after surgery. It is apparent that if fracture is reduced anatomically and fixed rigidly, the final outcome is better

References

1. John F, Connolly MD. Limb threatening neuropathic complications from ankle fractures in patients with diabetes. CORR. 1998; 348:212.
2. Heather A Beam. BS Complications of ankle fractures in

- diabetic patients. OCNA. 2001; 32:1-113.
3. Stephen Henry MD Fixation with bio absorbable screws for the treatment of fractures of the ankle JBJS. 1994; 76(3):319.
 4. Thomas A, Csensitz MD. PhD, Limb threatening neuropathic complications from ankle fractures in patients with diabetes. CORR, 1998; 348:212.
 5. Robert Bucholz MD. Fixation with bioabsorbable screws for the treatment of fractures of the ankle. JBJS. 1994; 76(3):319.