

Perspective study of management of ankle sprain under USG guidelines in Telangana population

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Abstract

Background: Ankle sprain is quite common phenomena in leisure walking or any sports. As the ankle joint has multiple ligaments, Stretching or tearing. Hence healing of these stretched or form ligament is a one of the great challenge due to involvement of extrinsic and intrinsic ligaments. They are labelled as grade I, II, III depending upon, the stretchibility tearing and injuries of ligaments. Hence various grades were visualised under USG guidelines and treated. **Method:** 72 patients having grade I, II, ankle sprain were studied with high frequency of (7-15 MHz) ultra sonography. **Results:** Out of 72 patients, 52 (72.2%) has right ankle sprain and 20 (27.7%) and complete recovery was observed in 69 (95.8%) and partial recovery in 3 (4.16) patients. **Conclusion:** Ultra sonographic guide lines were successfully classified the grades I, II, III ankle sprains. Immobilisation of sprained ankle for Six weeks was successful to treat grade I, II sprains. **Key Words:** Ligaments, grades of sprain, lateral ankle sprain, USG = ultra sonography.

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INTRODUCTION

Ankle sprain are the most common in sports or leisure working injuries especially lateral ankle in the body and the direct and indirect cost of treating ankle sprain is costly¹ and recurrence of ankle, sprain is also as 30-40% in the athletes² Majority of them develop osteoarthritis and in some cases require surgical correction³. Therefore the recognition of factors which may be related to ankle sprain like balance joint position sense flexibility and

range motion reaction time, muscle strength, gait pattern ankle instability, generalised laxity⁴. The most common mechanism of injury in ankle sprain is a combination of plantar flexion and inversion. The lateral stabilizing ligament which include the anterior talo-fibular, calcano-fibular and posterior tibiofibular ligaments are often damage. The anterior talo-fibular ligament is the most easily injured concomitant injury to this ligament and calcano fibular ligament can result appreciable instability.⁵ The posterior talofibular ligament is the strangest of the lateral complex and is rarely injured in an inversion sprain⁶. Hence attempt was made to manage the ankle sprain under guidelines of USG contrast media, because negligence may lead to arthritic pathogenesis and may require surgical correction which again makes patients for longer hospital stay at the cost of financial expenses and increases the weight gain of the patients due to prolong bed ridden, which would invite multiple patho physiological complications.

MATERIAL AND METHODS

72 adults patients referred by orthopaedic department of Apollo Institute Medical Sciences and Research Hyderabad – 500090. Telangana due to ankle sprain.

Inclusive criteria: OPD Patients having grade I and grade II ankle sprains evaluated by X-ray were included in the study.

Exclusion criteria: The patients having fractures of ankle joints, syndesmotom injuries. 3rd grade ankle sprains referred to surgery. Immune Compromised were excluded from the study.

Methods

The patients were classified as per their severity of sprain as grade I and II. Every patients, was made to undergo high frequency of (7 – 15 MHz) ultra sound was performed with acute ankle injury. If the oedema was more or severe USG was deferred and repeated after 3-5 days once oedema subsides. Grade I ankle sprains was given semi rigid splint for one week followed by elastic compression bandage applied for next 2 weeks with

regular life style and proprioceptive and balancing exercise from 3rd month. For grade 2 ligament sprain around 45 to 50% ligament tear associated with oedema around peroneus ligament and swelling around ankle. Initially patients were advised rest, icing, foot elevation crepe bandage and anti inflammatory drugs for 5-7 days. Once oedema reduced they were given short leg synthetic for six weeks. they were allowed full weight bearing from 4th week. After 6th week cast was removed, and proprioceptive and balancing board exercises were advised. All the patients were asked for follow up a regular interval at 1st week, 3rd week, 6th week and monthly there after till one year. The duration of study was from October 2015 to September 2019.

Statistical analysis: The patients were classified right ankle and left ankle and management and recovery also classified with percentage. Moreover previous studies were also compared for recurrence. The ratio of Male and female was 2:1. The statistical analysis was done in 2007 SPSS soft ware. The ratio of Male and female was 2:1.

OBSERVATION AND RESULTS

Table – 1: In the present study 52 patients (72.2%) had right side ankle sprain, 20 (27.7%) left side ankle sprain.

Total no. of patient	72	Right ankle sprain	Left ankle sprain
		52	20
%	10	72.2	27.7

Table – 2: Out 72 patients 69 (95.8%) 3 (4.16%) had partial recovery.

Result	No. of patients	Complete recovery	Partial recovery
Total no. of Patents	72	69	3
	100%	95.8	4.16

Table – 3 : The present study of sides and rate of recovery was compared with previous workers.

Name of the workers with date	Mean age	Side	Partial recovery	Mode of injury
Bosein etal (1955)	28 year	Rt. 79% Lt. 21%	47	--
Elias (2002)	22.7	Rt 66% Lt. 33%	--	Sports
Yeugm et.al (1994)	28	Rt 75% Lt. 25%	75	Leisure activity
Glasgrow (1980)	30	--	26	Leisure activity
Alaneu et.al (1998)	30	Rt = Lt	--	Leisure Activity
Mattam Sanjay (2018)	33	Rt = Lt	1%	Leisure Activity
Present study (2019)	30	Rt = 2.2% Lt. = 27.7	4.6%	Leisure Activity



Figure 1



Figure 2

DISCUSSION

In the present study of management of ankle sprain under guide lines of USG contrast. Total number of patients were 72, among them 52(72%) had right ankle sprain, 20(27.7%) had left ankle sprain (Table-1). The result of management was out 72 patients 3(4.16%) has incomplete or partial recovery (Table-2). These findings were more or less in agreement with previous studies.^{7,8,9} The probable reason for incomplete or partial recovery could be the malnutrition, under nutrition or un-diagnosed diabetes, alcoholism which resort the bone considerable and leads to Osteoporosis. Such types of cases require muscle strength evaluation by manual muscle testing (MMT). MMT assesses strength using an ordinal grading scale without quantifying strength¹⁰. MMT at ankle joint include heel rises where the patient is asked to repeat heel rises as many as times possible to assess muscle strength. Joint range of motion (ROM) also play contributory role in recovery of ankle sprain but these-measurement need to be the standard, reliable and techniques to assess ROM. In addition to this proprioception which has ability to detect the movement and position is a key component in balance and injury prevention.¹¹ The computerised dynamometers or custom - built devices move the ankle joint at low speeds approximately 0.4%. A part from this gait analysis methods which has three-dimensional capture or two-dimensional video may be employed to evaluate the gait.¹² In addition to this calcium – supplemented nutrition will be more effective in early and complete stability of joint.

SUMMARY AND CONCLUSION

The present study of management of ankle sprain under USG guide lines will be helpful in the grade. I ankle sprain healing completely without recurrence but grade – II remains a challenge for healing but six weeks of rigid

immobilization was effective method for joint stability. But this study demands to rule out some intrinsic risk factors including lateral ankle ligaments laxity balance and ankle plantar flexion must be focussed during management of ankle sprain. As ligament are rich in nerve supply, hence sprain will be very painful.

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