
Comfort during treatment of ankle sprain with short leg slab. Study of 30 patients and introduction to "faisal's discomfort score"

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ABSTRACT

Ankle sprain is managed by slab immobilization. Most patients recover but there haven't been any studies on effect of slabs on patient's comfort during treatment phase. We study effect of ankle sprain and slab on patient comfort. However main aim of this study was as an introduction and to study the use of a new discomfort/comfort scale (Faisal's discomfort/comforts core). Even without pain patients may be experiencing discomfort. Many other factors that cause discomfort are mentioned in our paper. Most scales compare the end results of the interventions. But our score can evaluate condition of patients during and after intervention.

Keywords: Short legs lab, Ankle sprain, Pain, Faisal's discomforts core, Faisal's comforts core.

Introduction

Ankle sprain is injury of the ligaments of the ankle. Ankle sprain is one of the most common orthopaedic injuries coming to emergency ward. It can happen with or more commonly without associated ankle fracture.[1] It most commonly occurs following ankle twist. Ankle twists in inversion in 75-85% cases [2] and sprain usually occurs on the lateral side of the ankle. Ankle sprain is most common in 10-19 year old individuals [3] and more than 50% ankle sprains are due to sport related injuries [4]. In under 25 age group males have a greater rate of ankle sprains while at ages 30 and over, females show a higher incidence of ankle sprains.[5] Symptoms include pain, which is increased on weight bearing or ankle movement. There is varying amount of swelling and ecchymosis. Ankle sprains can be diagnosed by the history of ankle inversion, and the typical location of pain and tenderness-rays are done to rule out any bony injury.[6] Vast majority of cases including severe sprains can be treated non-operatively. Those that can be weight are likely to heal very quickly. Treatment includes (RICE) rest (non-weight

bearing), icing, compressing with acepab and age and elevating the limb[7]. A short period of immobilization in a short leg slab leads to a faster recovery at 3 months compared to a compression band age.[8] Following immobilization the patient may need physical therapy. Our study monitors the comfort level of patients with ankle sprain managed in as lab. Our score and study was designed to study the effect of short leg slab during the treatment phase only. Our study does not comment on the effectiveness of Short leg slab as a treatment of ankle sprain. There are many scales to measure pain and discomfort. These scales mainly focus on pain, leaving a side other factors that affect comfort. Although pain is a major contributor in discomfort, there are other factors that also play in discomforting the patient and should also be considered when planning an intervention. The main aim of this study was as an introduction and as a test study for a new discomfort and comforts core (Faisal's discomfort and comforts core). Most scales are designed to compare the end results of the interventions. But our score can evaluate the condition of the patient during the intervention as well as after the intervention. This scale can be used as a discomfort scale during the treatment/recovery phase and as a disability scale in the post rehabilitation phase.

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Materials and Methods

The study is based on observations inpatients complaining of ankle twist. The patients were examined and associated injuries were ruled out. The patients were advised x-rays of ankle (AP and Lateral views) and x-rays of foot (AP and Oblique views). The ones without bony injury were selected. The limbs were immobilized in a well-padded posterior short legs lab, starting from the level of tibial tubercle up to the metatarsophalangeal joints. The patients were advised not to walk on the affected limb; they were advised to use crutches to walk on the uninjured leg and to do full range of motion exercise at knee and hip of the injured limb. They were advised to elevate the injured limb when lying or when sitting on the floor. This is the standard protocol of our institute for the management of all ankle sprains. We merely observed and followed the patients in their recovery phase. From among these the first 30 patients were selected and were followed for a period of 7 days and were questioned for discomfort

level using Faisal's discomfort score (FDS). The score of 7 days was averaged.

Faisal's Discomfort Score (FDS)

Comfort is a sense of physical as well as psychological ease, often characterized as a lack of pain, hardship, stress or distress. Persons who are lacking in comfort are uncomfortable or experiencing discomfort. Comfort has both physical and psychological aspects. Physical aspects include absence of pain, body aches and other stresses. Comfort also includes the ability to independently and comfortably perform all the routine activities of life and self-care like mobilisation, eating, urination, defecation, sleep, cleaning, changing clothes and sexual activity. Comfort also includes psychological factors like happiness, laughing, casual talk, energy, absence of fear and interest in daily activities. Based on these factors as core has been developed in an attempt to quantify a person's discomfort (Faisal's Discomfort Score or FDS). This Score has a maximum score of 100.

A score of 0-5 will be considered no discomfort, 6-20 will be considered mild discomfort, 21-40 will be considered moderate discomfort and a score of 41 or above will be considered severe discomfort.

Comfort score (Faisal's Comfort Score) is simply derived by subtracting FDS from 100.

$$FCS=100-FDS$$

FDS is as follows:

Location:	Alone(10)...Hospital with friends/family(5)...Home with friends/family(0)
Pain at fracture:	Severe(25)...Moderate(12)...mild(6)...with movement(3)...no pain(0)
Does chair/bed/Implant/Traction/orthosis/prosthesis/cast/crutch hurt:	Very much(4)...Sometimes(2)...No(0)
Mobilisation:	Immobile in Bed(5)...Bedridden(4)...wheel chair bound(3)...Needs devices/help to mobilise(2)...Independent uncomfortable(1)...comfortable(0)
Food:	Rhyles tube/Hyper alimentation (5)...Nausea/vomiting (4)...liquid diet (3)...decreased appetite(2)...Needs help to feed(1)...good appetite(0)
Urination:	Catheterised(5)...struggles to urinate(4)...urination cause spain at fracture/sprain(3)...urination messy/uses diaper(2)...need help to urinate/has to urinate in bed pan(1)...Independent urination in bathroom(0)
Defecation:	Constipated >3d/Diarrhea (5)...constipated ≤3d/defecation is difficult (2)...comfortable (0)
Sleep:	No sleep(5)...frequent waking(4)...wakes 2-3times/needs sleeping aids(3)...difficulty in falling asleep(2)...normal(0)
Sexual activity:	Nil(5)...Difficult(2)...Normal/Already sexually inactive(0)

Cleaning: Assisted and painful (2)...Assisted (1)...Independent/comfortable(0)
Change of clothes: Assisted and painful (2)...Assisted (1)...Independent/comfortable (0)
Back/Neck/Shoulder Ache: Yes(3)...No(0)
AnkleAche: Yes(2)...No(0)
Other Pains: Yes(2)...No(0)
where.....
Are you unhappy: Yes(5)...No(0)
Does the pt. Laugh: No (2)...Yes (0)
Does the pt. casual talk normally: No(2)...Yes(0)
Headache: Yes(2)...No(0)
Laziness/tired: Yes(2)...No(0)
Fear: Yes(3)...No(0)
Does the pt. ask for Cleaning/Brushing teeth: Iforeach “No”
Has the pt. asked for change of clothes/specific foods/Shaving-combing/news of home and relatives:
 1/2foreach “No”
Result

30 patients were observed for discomfort level over 7 days.
 Following results were found:

Table1: FDS of the patients of Day1,day7and the average FDS over 7days.

PATIENT NUMBER	Day 1FDS	Day 7FDS	Average of 7days	PATIENT NUMBER	Day 1FDS	Day 7FDS	Average of 7days
1	13	17.5	13.5	16	17	15	16
2	20	12	16	17	17.5	8	16
3	14	11	11	18	18	11	15
4	20	13	16	19	18	25	22
5	27	18	24	20	15	5	12
6	10.5	2	6	21	14	6	12
7	32	23	27	22	38	32	38
8	21	6	13	23	12	10	9
9	47	44	45	24	29	12	19.5
10	10.5	6.5	7.5	25	11	3	6
11	13	18	16	26	20.5	11	15
12	3	2	2	27	39	15	30
13	12	10	12	28	25	20	22
14	29	25	27	29	5	11	11
15	22.5	17	18	30	26.5	19	23

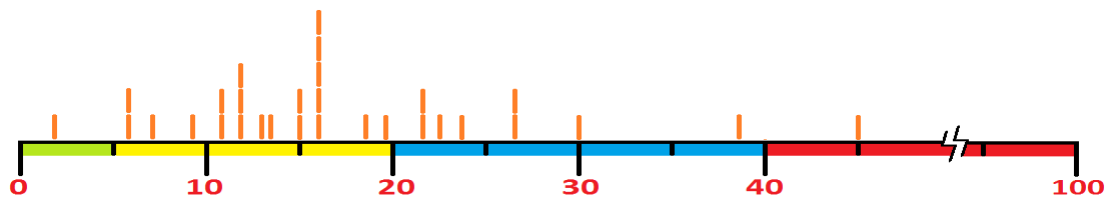


Fig1: Bargraph of the7day average FDS

1 patient had no discomfort, 20 patients had mild discomfort, 8 patients had moderate discomfort while 1patient had severe discomfort. The graph roughly showed a bell shaped distribution.

Out of the 21 patients with no or mild discomfort 13 had no pain, while 8 had mild pain. Out of 9 patients with moderate to severe discomfort 7 had mild to severe pain while 2 had no pain. There was an overall improvement in the comfort level of the patient's overtime. The table shows that 26 patients showed improvement in discomfort over the 7 day study period. While 4 showed worsening of discomfort.

Discussion and Conclusion

Patients with minor ankle sprain who are managed in a lab have some discomfort. Majority of them only have no to mild discomfort. Few have even moderate to severe discomfort. The average score of all the patients was around 17 (mild discomfort). There is a general trend of improvement in comfort level in patients managed with this method over a 7 day period. However the main aim of this study was as an introduction and a safest study for a new discomfort/comfort scale (Faisal's discomfort/comfort score). Even though half of patients with ankle sprain had no pain yet they had some amount of discomfort. This discomfort was due to the slab and inability to perform normal functions of life. Although pain is a major contributor in discomfort, there are other factors that also play in discomforting the patient and should also be considered when planning an intervention. Most scales are designed to compare the end results of the interventions. But our scale can evaluate the condition of the patient during the intervention as well as after the intervention. There are many scales to measure pain and discomfort. Visual Analog Scale, Numeric Rating Scale, Verbal Descriptor Scale, Verbal Numeric Analog Scale, etc. These scales mainly focus on pain, leaving aside other factors that affect comfort. On the other hand there are many psychological scales that are primarily based on psychological state of patient and do not consider the physical discomfort of the patient. We could not find any scale that truly tried to measure the comfort level of patients especially during the treatment phase. This scale can be used as a discomfort scale during the

treatment/recovery phase and as a disability scale in the post rehabilitation phase.

The scale shows a rough bell shaped distribution in this very small sample of patients. There is a general improvement in the score with treatment of patients. We are hopeful that the score will find a place in patient evaluation and research. We are also starting a new randomized controlled study using this score.

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