

ORIGINAL RESEARCH

ASSESSMENT OF THE FIBULAR INCISURA OF THE TIBIA**Mohd. Imtiyaz R.A. Shaikh**Assistant Professor, Department of Anatomy, SUT ACADEMY OF MEDICAL SCIENCES,
Kerala, India**Abstract****Background:** The present study was conducted for assessing fibular incisura of the tibia.**Materials & methods:** 20 males and 20 females were included in the present study. Complete details of all the subjects were obtained. Subjects not willing to participate in the study were excluded. Evaluation of fibular incisura of the tibia was done in all the subjects. All the individuals were subjected to radio-imaging using MRI. Evaluation of results was done followed by statistical analysis.**Results:** Mean depth of fibular incisura of tibia of right side and left side among males was 3.2 mm and 3.5 mm respectively. Mean depth of fibular incisura of tibia of right side and left side among females was 3.1 mm and 2.8 mm respectively. Mean Vertical distance of tibiofibular overlapping of right side and left side among males was 7.7 mm and 7.8 mm respectively. Mean Vertical distance of tibiofibular overlapping of right side and left side among females was 7.0 mm and 6.9 mm respectively.**Conclusion:** MR imaging is valuable and is non-invasive. However; further studies are recommended.**Key words:** Fibular incisura, Tibia**INTRODUCTION**

Forensic anthropology encompasses the examination of skeletal remains for the purposes of identification. It is a sub-field of physical anthropology that has medico-legal implications. The traditional goal of forensic anthropology is to identify human remains once they have been skeletonized, although the forensic anthropologist may be confronted with burned remains, hair samples, footprints, fingerprints, blood or any other tissue sample for blood typing and DNA profiling. Included in the typical forensic anthropological analysis is the determination of age, sex, race and ante-mortem stature of the unknown individual.¹⁻³

Syndesmotoc injury may be difficult to appreciate by radiographic criteria because of variations in the amount of rotation, the wide anatomic variability in the depth of the fibular incisure of the tibia, and the shape of the tibial tubercle. An intact syndesmosis is critical in maintaining normal ankle function. The medial aspect of the distal fibula lies in the fibular incisure of the tibia (incisura fibularis tibia, incisural notch, fibular notch of the tibia, peroneal groove of the tibia, or syndesmotoc notch), which is bordered by a broad anterior tubercle and a smaller posterior tubercle.⁴⁻⁶ Hence; the present study was conducted for assessing fibular incisura of the tibia.

MATERIALS & METHODS

The present study was conducted for assessing fibular incisura of the tibia. 20 males and 20 females were included in the present study. Complete details of all the subjects were obtained. Subjects not willing to participate in the study were excluded. Evaluation of fibular incisura of the tibia was done in all the subjects. All the individuals were subjected to radio-imaging using MRI. Evaluation of results was done followed by statistical analysis.

RESULTS

Mean age of the males and female subjects was 25.6 years and 26.4 years respectively. Mean depth of fibular incisura of tibia of right side and left side among males was 3.2 mm and 3.5 mm respectively. Mean depth of fibular incisura of tibia of right side and left side among females was 3.1 mm and 2.8 mm respectively. Mean Vertical distance of tibiofibular overlapping of right side and left side among males was 7.7 mm and 7.8 mm respectively. Mean Vertical distance of tibiofibular overlapping of right side and left side among females was 7.0 mm and 6.9 mm respectively.

Table 1: Fibular incisura of the tibia

Variable	Males		Females	
	Left	Right	Left	Right
Depth of fibular incisura of tibia (mm)	3.5	3.2	2.8	3.1
Vertical distance of tibiofibular overlapping (mm)	7.8	7.7	6.9	7

DISCUSSION

The hand-wrist region has received the greatest attention in assessment of skeletal maturation. It is the maxim of age estimation that we should combine information from as many epiphyses as possible to provide the most accurate estimate of biological age and therefore chronological age. By diverting research on maturation to other areas we can provide new information that has the possibility of being used in combination with these well-established techniques to maximize the accuracy of age estimation.⁷⁻⁹ Hence; the present study was conducted for assessing fibular incisura of the tibia.

Mean age of the males and female subjects was 25.6 years and 26.4 years respectively. Mean depth of fibular incisura of tibia of right side and left side among males was 3.2 mm and 3.5 mm respectively. Mean depth of fibular incisura of tibia of right side and left side among females was 3.1 mm and 2.8 mm respectively. Ebraheim NA et al assessed the fibular incisure of the tibia on CT scan. Twenty cadaver lower limbs were used for CT assessment of the fibular incisure of the tibia. The length of the syndesmotric facet is shorter in the anterior (11.20 +/- 1.90 mm) than in the posterior (14.89 +/- 2.72 mm) (P < 0.001). The angle

between anterior and posterior facets is 135.18 ± 9.27 degrees. The depth of the fibular incisure of the tibia is 4.29 ± 1.26 mm. The vertical distance of tibiofibular overlapping is 7.81 ± 1.93 mm. The distance between anterior margin of the tibia and anterior margin of the fibula is 17.40 ± 3.61 mm. The distance between the medial fibular border and the lateral border of the posterior tibia is 2.01 ± 0.49 mm. The syndesmotic notch could be divided into two groups: significant concave surface and shallow concave surface. The position of the fibula in the incisural notch may depend on the depth of the fibular incisure of the tibia during traumatic forces applied on the syndesmosis. CT can display the tibial tubercles and clearly demonstrates the fibular incisure of the tibia and the interior of the tibiofibular space.¹⁰

Mean Vertical distance of tibiofibular overlapping of right side and left side among males was 7.7 mm and 7.8 mm respectively. Mean Vertical distance of tibiofibular overlapping of right side and left side among females was 7.0 mm and 6.9 mm respectively. Mavi A et al investigated the fibular incisura of the tibia in type I and II recurrent sprained ankle. A total of 18 limbs (9 right, 9 left) were examined for the fibular incisura of the tibia by magnetic resonance imaging at Gunmar Magnetic Resonance Imaging Center between September 2000 to May 2001. This group consisted of 10 males and 8 females and their age ranged between 18-61 years. The control group was made up of 75 participating volunteers without previous history of trauma in the ankle. The measurements of the length of the anterior and posterior facets, depth of the fibular incisura of the tibia and the distance between anterior margin of the tibia and anterior margin of the fibula in the patient group were visibly different from the measurements of the control group. In recurrent sprained ankle, the anterior and posterior tubercles were lengthier, the depth of the fibular incisura of the tibia was deeper and the fibula was more anterior than the control group. The measurements of the angle between anterior and posterior facets and the vertical distance of tibiofibular overlapping in the patient group were slight different from the measurements of the control groups. These characteristics, which were observed in the recurrent sprained ankles, may be anatomically predisposed to recurrent ankle sprains.¹¹

CONCLUSION

MR imaging is valuable and is non-invasive. However; further studies are recommended.

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