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Research Article

Epidemiology of Fibula Fracture in Trauma Cases – An Autopsy Study

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Abstract: The lower limb contains two long bones, the fibula and tibia, which are situated beside each other. The fibula bone lies on the lateral aspect of the lower limb and forms joints with the tibia and the talus in the ankle. Fractures of the tibia generally are associated with fibula fracture, because the force is transmitted along the interosseous membrane to the fibula. Fibular fractures may be complete, incomplete or displaced fracture. Fibular fractures are usually not so dangerous, because the bone is supports only about 17% of the body weight. The materials and methods in this study, all fatal road traffic accident and fall from height cases autopsied during the period 1stJanuary 2011 to 31st December 2014 were analyzed at the Department of Forensic Medicine & Toxicology, AIMS, BG Nagar, and Karnataka. The incidence, age wise distribution of cases and types of fibula fracture were noted. In Results and Discussion in our study total numbers of autopsied cases during 2011 to 2014 are 453. In that 21 cases had FIBULA fracture. Maximum number of victims belongs to 21-30 years (08 cases) decade followed by 31-40 years (07 cases). Manner of fracture was Road traffic accident in 19 cases and fall from height in 2 cases. 14 cases had lower 1/3 rd fibula Fractures and 05 cases had fracture at middle 1/3rd region. In Conclusion the fibula is the non-weight bearing bone of the ankle, located on the lateral side of the leg. Fibula fractures occur generally with trauma or are associated with lateral ankle sprains.
Keywords: Fibulas, fracture, road traffic accident, fall from height.

INTRODUCTION

The lower limb contains two long bones, the fibula and tibia, which are situated beside each other. The fibula bone lies on the lateral side of the lower limb and forms joints with the tibia bone and the talus bone in the ankle region. Fractures of the tibia generally are associated with fibula fracture, because the force is transmitted along the interosseous membrane to the fibula. Fibular fractures may be complete, incomplete or displaced fracture. Fibular fractures are usually simple injuries, because the bone supports the body weight partially.

During Road traffic accident, high jump, trauma to the outer lower limb, more pressure is created on the fibula bone. When this pressure is beyond the power of the bone will lead to a fibula fracture. Fibular fractures, particularly those involving the lower 1/3rd and shaft are more commonly produced by high energy trauma.

Fibula Fractures alone are one of the most common types of lower limb bone fracture. Most stable fibular fractures can be treated without surgery. If the ankle joint is unstable, then surgery is the treatment of choice. Usually lower 1/3rd of fibula fractures can be treated non-surgically without much complication.

Whenever there is a sudden contraction of the biceps femoris muscle that pulls its site of attachment on the bone leading to fibular head fracture, this is known as avulsion fracture [1].

MATERIAL AND METHODS

In this study, all the fibula fracture cases autopsied at the Department of Forensic Medicine & Toxicology, AIMS, BG Nagar, and Karnataka were studied. The incidence, age wise distribution of cases and types of fibula fracture were noted.

RESULTS

Table 1: Incidence of FIBULA fracture cases

Total no. of autopsied cases	Total no. of FIBULA fracture cases
453	**21**

Table 2: Age and Sex wise distribution of cases

SI. NO.	AGE GROUP	NO. OF CASES	MALE	FEMALE	TOTAL
1	<20 YEARS	0	0	0	0
2	20-30 YEARS	08	06	02	08
3	31-40 YEARS	07	06	01	07
4	41-50 YEARS	03	03	00	03
5	>50 YEARS	02	01	01	02
TOTAL		**21**			**21**

Table 3: Manner of FIBULA fracture

SI. NO	MECHANISM OF INJURY	NUMBER OF CASES
1	**ROAD TRAFFIC ACCIDENT**	**19**
	PEDESTRIAN	02
	MOTOR CYCLE RIDER	06
	DRIVER	08
	PASSENGER	03
2	**FALL FROM HEIGHT**	**02**
	TOTAL	**21**

Table 4: Type of FIBULA Fracture

Type of fracture	No. of cases
Upper 1/3rd	**02**
Middle 1/3rd	**05**
Lower 1/3rd	**14**

DISCUSSION

In our study total numbers of autopsied cases during 2011 to 2014 are 453. In that 21 cases had FIBULA fracture. Maximum number of victims belongs to 21-30 years (08 cases) decade followed by 31-40 years (07 cases). Manner of fracture was Road traffic accident in 19 cases and fall from height in 2 cases. 14 cases had lower 1/3 rd fibula Fractures and 05 cases had fracture at middle 1/3rd region.

Stress fracture is most commonly seen in sport persons and in soldiers. In a study of 320 sport persons, tibia bone fractures were seen in 49.1 % and fibula bone were seen in 16.6%. Isolated reports have indicated the development of these fractures in patients with specific clinical conditions such as rheumatoid arthritis, systemic lupus erythematosus, and calcium pyrophosphate deposition. Stress fractures occur when normal or physiological muscular activity stresses a bone that is deficient in mineral or elastic resistance. The exact mechanical phenomenon responsible for initiating stress fractures remains unclear [2, 3, 4, 5, 6].

CONCLUSION

Fibula fractures are usually produced by road traffic accident cases, fall from height and ankle sprains. Stable fractures can be treated by immobilization and unstable fractures should be treated by surgery. Physiotheraphy and strengthening exercises are very important in reducing the pain and in restoring the normal movements.

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