



EPIDEMIOLOGY OF INTERNAL DERANGEMENT OF KNEE

Gurmeet Singh Sarla*

COL Gurmeet Singh Sarla, Military Hospital Devlali, Devlali Cantt, Nasik, Maharashtra

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ABSTRACT

Aim: In patients with traumatic knee injury, to study the spectrum of structural injury, as visualised on MRI.

Materials and Methods: 48 patients of traumatic knee injury from a military training centre who reported to a peripheral hospital with traumatic joint hemarthrosis, underwent MRI of the injured knee within 1 week of injury. Structural injury as visualised on MRI in relation to age, sex and activity at injury was studied.

Results: The majority of injuries (43.75%) occurred during training activities. ACL tear was the most common structural injury (58.33%) with a similar number of medial meniscus injury (58.33%). Isolated ACL injury was rare (4.16%) and was mostly associated Medial Meniscus injury (37.5%). The age group of 30-40 years is most commonly affected (45.83%). Male sex is more commonly affected (97.91%).

Conclusion: ACL injury is the commonest Internal derangement of knee followed closely by Medial meniscus injury. Isolated ACL tear is rare and is most commonly associated with medial meniscus injury. Male sex and the age group of 30-40 years is most commonly affected.

Limitations: This study has certain limitations. The sample size is small and may not be fully representative of the general population since the patients who reported to the health care centre involved mostly young adult males undergoing rigorous physical training. There was a single female patient who was included in this study who sustained a Road traffic accident.

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INTRODUCTION

Background

MRI based findings from patients of traumatic knee injury from a military training centre after acute traumatic hemarthrosis are presented here and related to age, sex and activity at injury.

METHODS

48 patients of traumatic knee injury from a military training centre who reported to a peripheral hospital underwent MRI of the injured knee within 1 week of injury. Structural injury as visualised on MRI in relation to age, sex and activity at injury was studied.

Table 1 Incidence of Internal derangement of knee over a period of 1 year: Age and Sex distribution:

Age group	Males	Females
20-30 years	18	-
30-40 years	22	-
40-50 years	7	1
Total	47	1

Table 2 Incidence of Internal derangement of knee over a period of 1 year: Month wise distribution

Month	Total cases
January	5
February	4
March	3
April	8
May	1
June	3
July	1
August	3
September	8
October	8
November	2
December	2

Table 3 Type of Injury in Internal derangement of knee

Type of Injury	Total cases
Isolated ACL tear/injury	2
ACL and PCL injury	2
MCL injury	2
Medial Meniscus injury	8
ACL and Medial Meniscus injury	8
ACL, Medial Meniscus and Lateral Meniscus injury	8
ACL and Medial Collateral ligament injury	6
Medial meniscus and Medial collateral ligament injury	2
ACL, PCL, Medial meniscus and Lateral meniscus injury	2
Cortical depression fracture	2

*Corresponding author: **Gurmeet Singh Sarla**
 COL Gurmeet Singh Sarla, Military Hospital Devlali, Devlali Cantt, Nasik, Maharashtra.

Table 4 Activity and Number of cases

Activity	Number of cases
Training activity	21
Sports	12
Road traffic accidents	8
Tripped and fell down	7
Total	48

DISCUSSION

Acute post traumatic effusion of the knee joint indicates haemarthrosis and is suggestive of a significant intra articular injury^{1, 2}. The most common is rupture of ACL³. Knee is the most commonly injured joint and soccer and rugby have the highest risks⁵. Traumatic knee injury is associated with Osteoarthritis later in life⁶. Literature revealed that increased height has been associated previously with patellar dislocations⁷ and knee exertion injuries⁸ in military conscripts and ligamentous injuries in civilian footballers⁹. In the acute setting, clinical examination of the knee joint is difficult with lack of accuracy in assessment³. MRI is a cost effective and non- invasive gold standard for assessing post- trauma knee joint derangement⁴. In USA, the most common intra – articular lesion of the knee occurs in the meniscus¹⁰. In a ten- year study conducted in Switzerland, Majewski *et al.* found conflicting results: soccer predominates as the main sport (35%), however skiing on snow comes as a second sport (26%), which is normal since in that country this type of practice is very common¹¹. The presence of sports with impact, trauma and rotational movements of the knee are innate characteristics to meniscus and ligament injuries¹².

RESULTS

The majority of injuries (43.75%) occurred during training activities. ACL tear was the most common structural injury (58.33%) with a similar number of medial meniscus injury (58.33%). Isolated ACL injury was rare (4.16%) and was mostly associated Medial Meniscus injury (37.5%). The age group of 30-40 years is most commonly affected (45.83%). Male sex is more commonly affected (97.91%).

CONCLUSION

ACL injury is the commonest Internal derangement of knee followed closely by Medial meniscus injury. Isolated ACL tear is rare and is most commonly associated with medial meniscus injury. Male sex and the age group of 30-40 years is most commonly affected.

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