

Prevalence of Groin Injury in Recreational Male Football Players

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Abstract

Objectives: The objective of this study was to find out the occurrence of respective types of groin injury on the basis of duration of play and their age and their severity. On the basis of palpation and resisted manoeuvre's assessment was done. Severity was graded on the basis of Hip and Groin Outcome Score (HAGOS).

Method: There were total 143 subjects, out of which 100 subjects were participants of this study. This was a study on presence of groin injury in recreational male football players. Here we evaluated presence of groin injury, classified them into their respective types and assessed their severity using HAGOS questionnaire.

Result: There is a relation between groin injuries and recreational male football players. Groin injury is found more within the age group 21-23 years as compared to 24-26 years. Also, groin injury was seen more in individuals who played for 4-7 days compared to those who played for 1-3 days.

Conclusion: There is prevalence of groin injury in recreational male football players.

Keywords: Groin injury, football, recreation, HAGOS, adductor, iliopsoas, abdominal.

Introduction

Football is a contact sport that has been played all over the world. In India, football has gained recognition just recently. The craze for football has spread like wildfire and many young adults have taken a liking to this sport. However most of the players only play for recreation. Such recreational players are those who play only for enjoyment and not to compete in any leagues.¹

The term 'adductor related groin pain' first originated in the literature in 1997.

Definition of Injury: According to the Injury Consensus Group of federation Internationale de Football Association (FIFA).(2006), an injury is defined as any physical complaint sustained by a player that results from a football match or football training, irrespective of the need for medical attention or time loss from football activities.²

Definition of Groin Injury: Groin injuries are defined as any physical symptom in the groin related to participation in soccer training or match play, incapacitating the player while playing soccer or demanding special medical attention.³

Classification⁴:

There are three major subheadings.

- Adductor-related groin injury

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Pain on palpation and pain on resisted adduction of legs.

- Iliopsoas related groin injury

Pain on palpation and pain with resisted hip flexion.

- Abdominal groin injury

Pain on palpation and pain with abdominal flexion against resistance.

To be classified as a groin injury, a set of two tests need to be positive.

Causes⁵:

- Jumping too quickly
- Sudden restriction to hip adduction leading to abduction of hip
- Snapping psoas
- Hip pathology
- Stress fractures
- Hamstring muscle strain
- Activities requiring speed and acceleration changes

Risk Factors⁶:

- Previous groin injury
- Higher level of play
- Reduced hip adduction strength (absolute)
- Reduced hip adductor strength relative to abductor strength
- Lower levels of training
- Inadequate warm up

Clinical Features⁷:

- Tenderness
- Swelling
- Increase in local skin temperature
- Pain on abduction
- Restriction of hip range of motion

Mechanism of Injury⁸: Groin injuries occur most commonly in non-contact situations (71%). Here, a rapid muscle contraction during a rapid muscle lengthening is the fundamental mechanism. A quick reaction to a change in play, such as sudden change in direction,

running, kicking etc. were the common modes of injury.

Prevalence^{6,9}: Groin injuries make up 2-5% of all sports-induced injuries.

Groin injuries comprise of 10-18% of all football injuries.

Prevalence of groin injuries in male cub football is 4-19% of all injuries. It was reported in 2002, that about 9.5% of all male football players had groin injuries.

Methodology

In this study 143 individuals were approached of which 100 were chosen according to the inclusion criteria in the city of Karad. The motive and procedure of the study was thoroughly explained to them. Appropriate consent was taken from the subjects. Soft tissue palpation and HAGOS pain questionnaire are the outcome measures that were used. A questionnaire was provided to the subjects to assess the type, incidence, severity, duration and other characteristics of pain. Next, the groin was palpated and tested for signs of injury.

- For Adductor-related groin pain

Palpation and resisted adduction of legs was performed

- For Iliopsoas related groin pain

Palpation and resisted hip flexion was performed

- For Abdominal groin pain

Palpation and abdominal flexion against resistance was performed

Data Presentation, Analysis and Interpretation

1. Prevalence of Groin Injury:

Table No. 1: Distribution of Groin Injury

	Groin Injury	Percentage
Present	61	61 %
Absent	39	39%
Total	100	100%

Interpretation: From table no. 1 it is suggested that among 100 individuals playing football for recreation, groin injuries were found in 61 individuals. Hence the prevalence that was found to be 61%.

2. Distribution of Groin Injury in Accordance to Types of Injury:

Table No. 2: Distribution of Groin Injury in accordance to type of injury.

	Adductor		Iliopsoas		Abdominal		Total
	Add	Add + IP	IP	IP + Add	ABD	ABD+IP	
		28	6	12	6	8	
Total	34		18		9		61

(ADD-adductor, ABD- abdominal, IP- Iliopsoas):

Interpretation: From table no.2, it was observed that out of 34 individuals with adductor related groin injury maximum 28 suffered from adductor related injury alone and remaining 6 suffered from both adductor and iliopsoas related injury. Out of 18 individuals suffering from iliopsoas related injury, 12 suffered from iliopsoas related injury alone. Also, out of 9 individuals suffering from abdominal related injury, 8 suffered from abdominal related injury alone and 1 suffered from both iliopsoas and abdominal related injury.

3. Distribution of groin injury in accordance to the dimensions of HAGOS questionnaire:

Table No. 3: Distribution of groin injury in accordance to dimensions of HAGOS

Subtypes	Mean Score ± SD
Symptoms	51.98 ± 7.26
Pain	55.43 ± 5.71
Physical functions	59.18 ± 7.70
Sports	30.26 ± 3.92
Physical activity	17.92 ± 5.95
Quality of life	46.39 ± 5.09

Interpretation: From table no.3 its observed that, the mean score of ‘symptoms’ was 51.98, ‘pain’ was 55.43, ‘physical function’ was 59.18, ‘sports and recreation’ was 30.26, ‘physical activity’ was 17.92 and ‘quality of life’ was 46.39

4. Association between duration of play and the dimensions of HAGOS questionnaire:

Subtypes	Mean Score ± SD	Spearman’s Correlation	
		r-Value	p-Value
Symptoms	51.98 ± 7.26	-0.3846	<0.0001(S)
Pain	55.43 ± 5.71	-0.3887	<0.0001(S)
Physical functions	59.18 ± 7.70	-0.3028	0.0022(S)
Sports	30.26 ± 3.92	-0.3246	0.0010(S)
Physical activity	17.92 ± 5.95	-0.1847	0.0658(NS)
Quality of life	46.39 ± 5.09	-0.3598	0.0002(S)

Interpretation: Table No. 6 shows, the association between severity of injury assessed by individual domains of the HAGOS questionnaire and the duration of play by Spearman Rank Correlation Test. For ‘Symptoms’ of injury it was found to be (-0.3846) with

a p-value of <0.0001 which was extremely significant. For ‘Pain’ it was found to be (-0.3887) with a p-value of <0.0001 which was extremely significant. For ‘Activity of daily living’ it was found to be (-0.3028) with a p-value of 0.0022 which was significant. For ‘Sports and

Recreation' it was found to be (-0.3246) with a p-value of 0.0010 which was significant. For 'Physical Activity' it was (-0.1847) with a p-value of 0.0658 which was not significant. For 'Quality of Life' it was (-0.3598) with a p-value of 0.0002 which was significant.

Illustrations:



Figure 1: Palpation of iliopsoas muscle

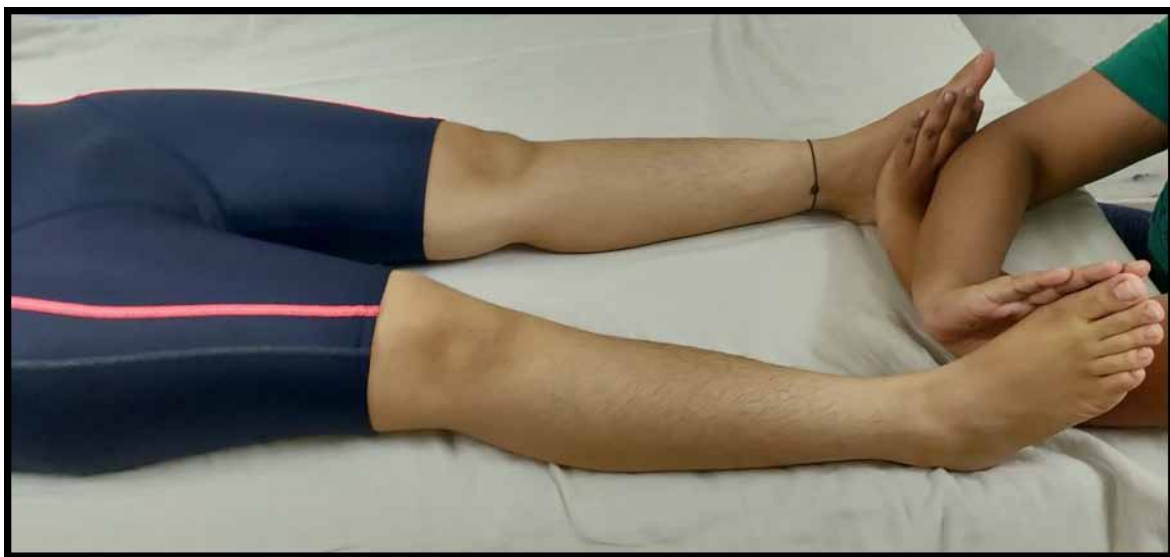


Figure 2: Functional testing of adductors

Discussion

The aim of this study is to study the prevalence of groin injuries in individuals who play football for recreation. The objectives of this study were to determine which of the types of groin injuries is more common in recreational players i.e. adductor, abdominal, iliopsoas and to determine the severity and duration of groin injuries. An effort to find the association between duration of play and severity of injury was also made.

A study reported that groin injuries occur due to insufficient training, reduced adductor range of motion and due to any previous groin injuries.

In this study, 100 individuals who played football for recreation (all male) were taken. It was found that, 61 individuals (61%) had groin injury; in which a maximum of 34 individuals (55.74%) suffered from adductor related groin injury, 18 individuals (29.51%) suffered from iliopsoas injury and the remaining 9(14.75%) suffered from abdominal injury. A reason for this may be that the adductor group of muscles is the primary adductor of the hip. Also, the attachment of the adductor longus muscle gives it a disadvantage during multidirectional movements of the hip making this group of muscles most likely to be injured. The iliopsoas muscle is the only link between the spine and

the lower limb which may make it more susceptible to strain compared to the abdominals. A previous study done in male professional football players over a period of 2 years found that adductor related groin injury was the most common entity (68%) followed by iliopsoas (12%) and abdominal related groin pain(9%).¹⁰

Also, the injuries found in this study were divided into various groups. Out of 34 individuals suffering adductor related injury, 28 had purely adductor injuries and remaining 6 had both adductor and groin injuries. From the 18 individuals who had iliopsoas groin injury, 12 had purely iliopsoas injury. Out of the 9 individuals with abdominal related injury, 8 had purely abdominal injury and remaining 1 had both abdominal and iliopsoas injury.

A reason for these injuries occurring together may be because the adductor and iliopsoas muscles are the commonly injured muscles so any severe trauma may have caused both these groups to get injured together. Since both iliopsoas and the abdominal muscles have a link with the spine, they may suffer injury together.

Individuals in the age group of 21-30 years were included in this study, out of which 70 individuals were in the (21-23) age group and 30 individuals were in the (24-26) age group. This age group consisted of those who played recreational football and did not have any training or experience in professional football.

It was clear that out of these 61 individuals with injury, groin injury was found to be more prevalent in the age group of 21-23 years (42) and the least was seen in the age group of 24-26 years (19). The cause due to which groin injury was found more in the age group of 21-23 years might be due to an imbalance in the sample size with the class 1 sample size being significantly greater than class 2. This might have led to a higher positive result.

Individuals who played for 1-3 days in a week (39) had a lesser prevalence of groin injury than those who played for 4-7 days per week (61). The individuals with groin injury who played for 1-3 days had a prevalence of 42.6% and those who played for 4-7 days had a prevalence of 57.4%. This may be due to the fact that greater play time proportionally increases the risk for injury. It may also be due to the imbalance in the sample size as greater duration of play leads to better conditioning as compared to lesser duration of play.

The groin injuries were assessed using the HAGOS questionnaire. It is suggested that the HAGOS questionnaire be used by considering its domains individually rather than calculating a cumulative score. Its individual dimensions were tested and it was found that 'physical activity' was affected the most with a mean score of 17.92 followed by 'sports and recreation' with a mean score of 30.26. 'Quality of life' was moderately affected with a mean score of 46.39. 'Symptoms' had a mean score of 51.98, 'pain' had a mean score of 55.43 and 'physical function' had a mean score of 59.18.

There is a greater affection of physical activity probably due to the hip being one of the most used joints and any physical activity will be affected by the hip. Also, any change in a person's routine is quickly noticed and has a significant impact on them.

Association between duration of play and the severity of injury was calculated. This too was done with considering individuals domains of the HAGOS questionnaire. The association for 'symptoms' and 'pain' was found to have a p-value of (<0.0001) which was extremely significant. The association for physical function had a p-value of (0.0022) and for 'sports and recreation' the p-value was (0.0010). Thus, both these associations were significant. For 'Physical Activity' the p-value was (0.0658) which is not significant and for 'quality of life' the p-value was (0.0002) which was significant.

The reason for the association between duration of play and symptoms, pain, physical function, sports and recreation and quality of life may be due to the fact that when individuals play for a shorter period of time, the body is not conditioned well enough and hence any injury causes sudden and severe pain which is manifested as an increase in the severity of the symptoms. This in turn causes a decrease in the physical function, participation abilities and consequentially decreases the quality of life.

This study found a prevalence of groin injuries in recreational male football players and it was found to be statistically significant. Thus there is a need to focus on the preventive as well as treatment measures for such players as most of the factors causing injury in these individuals are easily reversible.

Conclusion

On the basis of the results of the study, it was

concluded that there is prevalence of groin injury in recreational male football players. Groin injury was found more within the age group of 21 to 23 years as compared to the other age group of 24 to 26 years. Individuals playing for longer durations were found to have more injuries as compared to those who played for lesser periods of time. A significant association was found between the duration of play and severity of injury.

Conflict of Interest: There were no conflicts of interest in this study

Ethical Clearance: Ethical clearance was taken from institutional committee of Krishna Institute of Medical Sciences, Deemed to be University, Karad.

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