

To Study the Impact of Groin Injury in Semi-Professional Male Footballers of Pune City

Joasel Santamaria¹, Dr. Tejaswini Jadhav², Dr. Albin Jerome³

¹Physiotherapy Intern, St. Andrews College of Physiotherapy, Pune

²Assistant Professor, St. Andrews College of Physiotherapy, Pune

³Principal, St. Andrews College of Physiotherapy, Pune

Corresponding Author: Joasel Santamaria

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ABSTRACT

Aim: To study the impact of groin injury in semi-professional male footballers of Pune city.

Objectives: To study the affection of Groin injury through HAGOS scale

Methodology: The study enrolled 80 participants who were semi – professional footballers and had experienced groin pain in the past week. 80 subjects were selected according to the inclusion and exclusion criteria. A written informed consent was taken from the subjects in the language best understood by them. The study subjects were explained about the procedure. The HAGOS scale was administered to the subjects. The data was collected and was statistically analyzed.

Statistics & Results: The impact of groin injury studied through HAGOS questionnaire were Symptoms (68%), Pain (76%), ADL (68%), Sports/RA (47%), Physical Activities (70%), QOL (61%).

Conclusions: According to the results it can be concluded that the impact of groin injury from most to least affected are as follows: Sports and recreational activity, Symptoms, ADL, QOL, Physical Activity, Pain.

Clinical Implications: This study implies that there is a need to focus on injury prevention. The association between injuries and performance is very likely one of the most important messages to convey to management and coaching staff, as well as to other collaborators in professional sports clubs, with the aim of continuing to improve medical services to the football players and to extend the focus on groin injury prevention and continuation of medical services to reduce the affection of the athlete performance.

Keywords: Groin injury, Groin Pain, Semi – professional footballer, Athlete performance, Quality of Life.

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. ^[1] Football is a sport characterized by a continuous increase in athletic commitment and intensity and the

pelvis and hip are subjected to considerable biomechanical stresses. In football players high running loads, sprinting, sudden change of direction, and kicking are considered potential groin injury mechanisms.

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]

Athletes within semi-professional environments often train and compete to standards similar to those of their professional counterparts yet also face the challenge of a substantial commitment to work and/or study. This is in contrast to the professional or 'full time athlete' where the development of the "alternative career" is subsidiary to their athletic career.^[4]

Overuse injuries usually present with a gradual onset of symptoms, such as pain or functional limitations, which can fluctuate over time. This is often the case for groin injuries, of which 76% have a gradual onset, allowing players to adapt their training, postponing time loss, and continuing participation.^[5]

Groin injuries are among the most common injuries in men's soccer, accounting for 14% to 19% of all injuries.^[6] Groin injuries make up 2-5% of all sports-induced injuries. Groin injuries comprise of 10-18% of all football injuries.^[1]

Prevalence of groin injuries in male club football is 4-19% of all injuries. It was reported in 2002, that about 9.5% of all male football players had groin injuries.^[7]

Recent epidemiological data suggest that 20–25% of all players sustain a time-loss groin injury in a season with recurrence injury rate ranging from 14% to 30%.^[6]

Risk Factors for groin injuries are 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.^[1]

The combination of adductor muscle weakness and previous groin injury could further increase the probability of developing groin pain. Clinical Features are tenderness, swelling, increase in local skin temperature, pain on abduction, restriction of hip range of motion.^[1]

Mechanism of Injury: 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. are the common modes of injury.^[8]

The measurement of injury severity should be considered with the level of sports-related function, such as reduced sporting performance. The Copenhagen Hip And Groin Outcome Score (HAGOS) questionnaire is a patient-reported outcome measure that contains a specific subscale assessing Physical function in Sports and Recreation (HAGOS, Sport/ Rec).^{[5][10]}

It is suggested that the HAGOS questionnaire be used by considering its domains individually rather than calculating a cumulative score. Its individual dimensions are Symptoms, Pain, Physical Function/Daily living, Sports/Recreational Activity, Physical Activity, Quality Of Life.^[1]

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.^[1]

NEED OF THE STUDY

Studies investigating the severity of adductor related groin problems are lacking in India. The number of observational

studies investigating the impact of groin injuries is low.

Studies for estimating both the severity of hip- and groin-related sporting function and quality of life.

Groin problems represent a significant health and performance burden in men's soccer. In order to successfully implement preventive measures to reduce the risk of injury incidence, the identification of the risk factors associated with the occurrence of groin injury and their monitoring is essential.

A study found prevalence of groin injuries in male football players and it was found to be statistically significant. Individuals playing for longer durations were found to have more injuries as compared to those who played for lesser periods of time. Thus, here 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.

Although previous research demonstrates footballers with groin pain exhibit reduced sporting function, it is unknown whether the severity of hip and groin symptoms are related to time loss. Studies investigating the prevalence and severity of groin problems beyond the time-loss approach are lacking.

AIM AND OBJECTIVES

AIM: To study the Impact of Groin injury in Semi – professional Male Footballers of Pune city.

OBJECTIVES: To study the affection of Groin injury through HAGOS scale

MATERIALS & METHODS

STUDY DESIGN

Type of study: Observational Study

Duration of study: 6 Months

Area: Pune Region.

SAMPLING DESIGN

Sample size: 80

Sample population: Semi – professional male footballers

Sampling: Convenient Sampling

SELECTION CRITERIA

INCLUSION CRITERIA: Individuals presenting with groin injury, Semi – professional male footballers, Age group is from 18 to 25 years

EXCLUSION CRITERIA: Recent surgery in the groin region, Fracture and dislocations of lower limb, Any other injuries in the hip and groin

PROCEDURE

The study enrolled 80 participants who were semi – professional footballers and had experienced groin pain in the past week. 80 subjects were selected according to the inclusion and exclusion criteria. A written informed consent was taken from the subjects in the language best understood by them. The study subjects were explained about the procedure. The HAGOS scale was administered to the subjects. All subjects were evaluated by using the HAGOS questionnaire form including demographic data. The data was collected and was statistically analyzed.

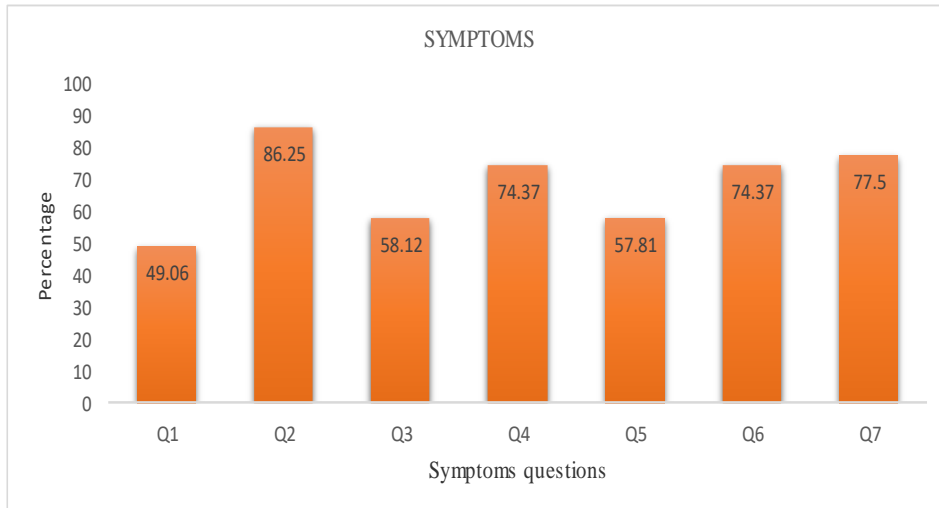
RESULT

The research was conducted to study the impact of groin injury on semi – professional male footballers. A total of 80 participants were included in this study from varying age groups, BMI, educational backgrounds and different occupations.

The result shows that majority of the athletes experienced discomfort because of symptoms and pain affecting their sporting and physical performance to the intensity wherein they face challenges even in their day to day activities.

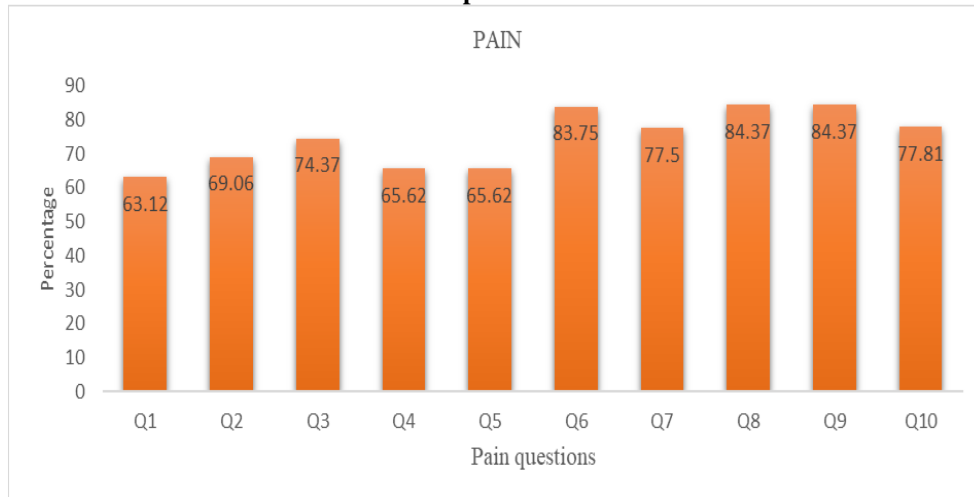
The impact of groin injury was studied through HAGOS questionnaire, the most affected was Sports/RA at 47% followed by QOL at 61%, Symptoms at 68%, ADL at 68%, Physical Activities 70% and Pain at 76% which was the least affected.

Graph 1: Symptoms



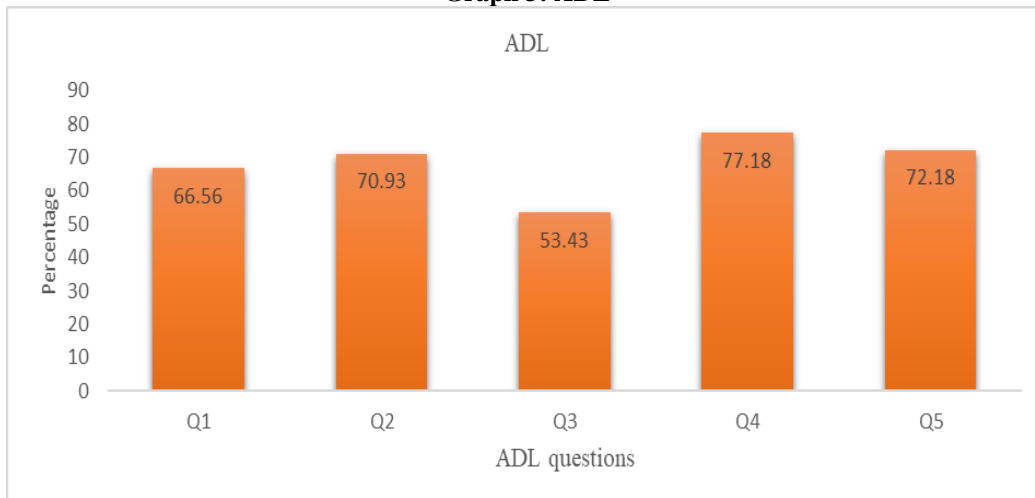
INTERPRETATION: Out of 7 Symptom questions, maximum experienced discomfort

Graph 2: Pain



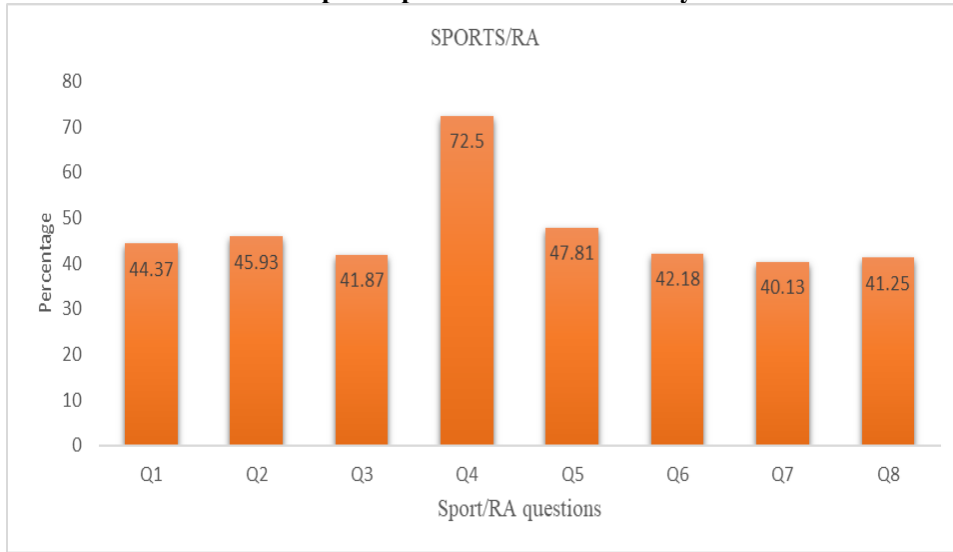
INTERPRETATION: Out of the 10 Pain questions, maximum found their groin often painful

Graph 3: ADL



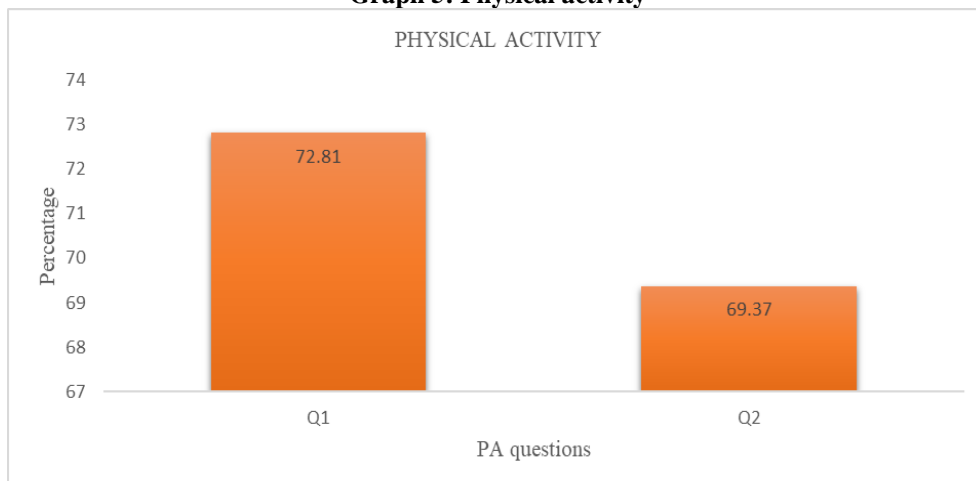
INTERPRETATION: Out of the 5 ADL questions, maximum found it difficult to get in/out of automobile

Graph 4: Sport/Recreational activity



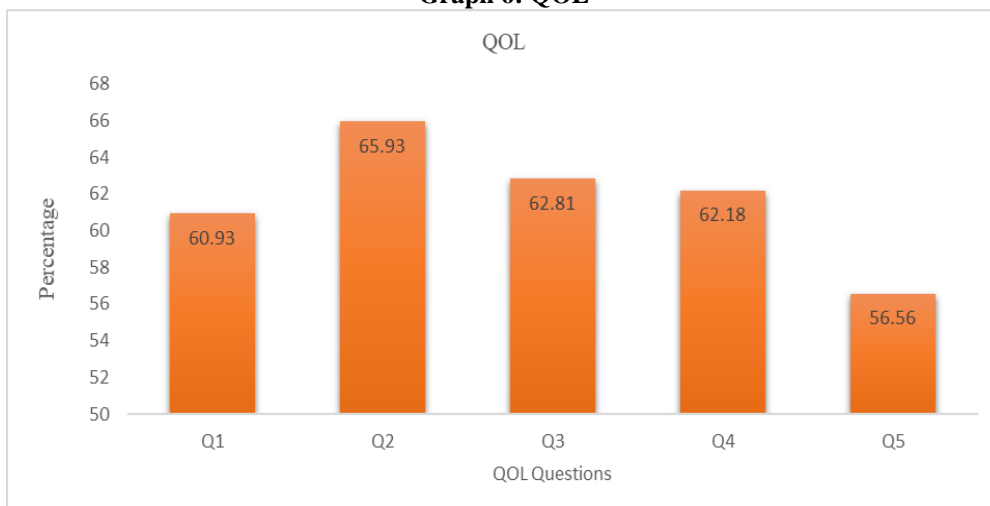
INTERPRETATION: Out of the 8 Sport/RA questions, maximum found it difficult in sudden explosive movements that involve quick footwork, such as accelerations, decelerations, change of directions

Graph 5: Physical activity

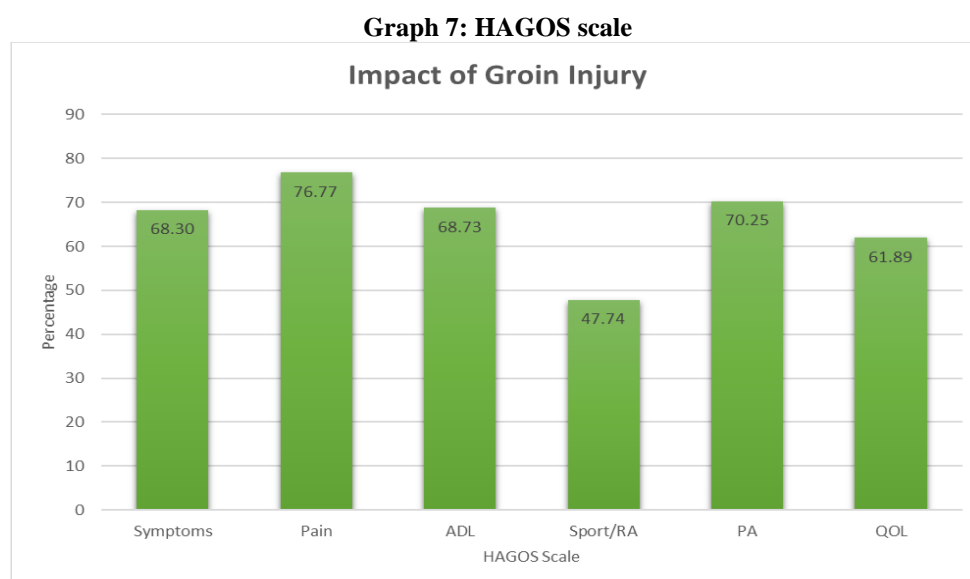


INTERPRETATION: Out of 2 Physical Activity questions, maximum were able to participate but couldn't give their normal level of performance

Graph 6: QOL



INTERPRETATION: Out of the 5 QOL questions, maximum felt restricted due to their groin problem



INTERPRETATION: The impact of groin injury as per the percentage of subscales affection are Sports/RA, QOL, Symptoms, ADL, Physical Activities and Pain from most to least respectively.

DISCUSSION

The aim of this study is to study the impact of groin injury in semi-professional male footballers. The objectives of this study were to determine the affection of the different subscales through the HAGOS questionnaire.^[10]

In this study 80 individuals within the age group of 18-25 years who play football as their professional counterpart along with their commitment to work/study and had experienced groin injury were included.

The scoring of the subscales was done individually that accumulates all the tasks physically and mentally that posed as a challenge post groin injury.

The reasons for the scoring are as follows:

According to graph 1, 68% of the footballers have affected symptoms due to the groin injury as, Athletic groin pain (AGP) is prevalent in football due to the nature of the sport which includes repetitive motions of accelerations, decelerations, sudden changes in direction, running and kicking.^{[1][16]}

A study reported that to oppose hip adduction, the ipsilateral hip abductors act eccentrically, producing a concomitant increase in ipsilateral hip joint reaction forces. An increase in the force transmitted from the femur to the pelvis requires adjacent muscular, ligamentous, and

cartilaginous structures to assist load transfer that may overload pubic symphysis region which is considered the fulcrum around which many forces are exerted at the pelvis and thus cause groin injury.^[16]

Mechanical symptoms such as locking, catching, popping or sharp stabbing sensations are the prognostic indicators of extra articular injuries of hip which includes groin injury.^[17]

Whereas stiffness in athletic groin pain may be represented as a compensatory technique. This compensatory technique takes place in order to reduce loading on the painful pubic symphysis region post-injury.^[16]

According to graph 2, 76% of the footballers experience pain in their groin region and secondarily to the other areas related to groin injury.

It has been demonstrated that stiffness in individual joints of the lower extremity may change when performing activities under varying conditions^[16], therefore the footballer may experience pain in the groin as well as other areas which is primarily linked to the groin injury.

According to graph 3, 68% found it difficult to perform their ADL as symptoms and pain together worsen the injured condition.

Sitting may be uncomfortable, especially if the hip is placed in excessive flexion. Rising from the seated position is especially

painful, and the patient may experience an accompanying catch or sharp stabbing sensation.^[17]

Symptoms are worse with ascending or descending stairs or other inclines.^[17]

Entering and exiting an automobiles often difficult with accompanying pain as this loads the hip in a flexed position along with twisting manoeuvres.^[17]

The reason being as the adductor group of muscles that are strained in the groin injury have the primary action of hip joint adduction and secondary action of hip flexion range of motions.

According to graph 4, Sports and recreational activities scored about 47% since football is a contact sport which requires high athletic dedication as it puts substantial amount of biomechanical stresses on the pelvis and hip.^[2]

In football players high running loads, sprinting, sudden change of direction, and kicking are considered potential groin injury mechanisms.^[2]

Higher levels of play, reduced hip adduction strength (absolute), reduced hip adductor strength relative to abductor strength, lower levels of training, inadequate warm up may lead to the decrease in the performance level of the footballers.^[8]

According to graph 5, it was found that 70% of the footballers were able to participate in the physical activities but performance was comparatively lowered as to the pre-injury state.

As post injury the groin is accompanied by pain in various activities and also leads to weakness of the adductor muscles.

According to graph 6, the QOL was scored to about 61% as footballers feel restricted in carrying out their activities as restriction of motion is one of the clinical features of groin injury.^[1]

In relation to emotional response, there seems to be a unanimous agreement between researchers, who all coincide in affirming that sportsmen suffer from adverse emotional states as a consequence of the stress generated by injury, both

immediately after its occurrence and during the recovery period.^[18]

This turns the occurrence of a sporting injury into a potentially stressful situation for a number of different reasons including pain in the injured area and general uncomfortableness; the triggering of adverse emotional reactions (anger, irritability, depression, etc.); the occasional necessity for hospitalization and surgical intervention; the perception of a lack of control over the situation; and finally, on occasions, chronic deterioration or permanent disability.^[18]

Thus, changes in the injured person's mood state are intrinsically linked to his or her perception of recovery.^[18]

CONCLUSION

Abiding by the HAGOS user guide which states that the raw scores are transformed to a 0-100 scale, with zero representing extreme hip and/or groin problems and 100 representing no hip and/or groin problems and that the scores between 0 and 100 represent the percentage of total possible score achieved.

According to the results it can be concluded that the impact of groin injury from most to least affected are as follows:

- 1) Sports and recreational activity
- 2) Symptoms
- 3) ADL
- 4) QOL
- 5) Physical Activity
- 6) Pain

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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