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A Rehabilitation Program Using Some Rehabilitative Exercises and Thermal Equipment to Treat a Torn Ligament in the Shoulder Joint in Athletes

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ABSTRACT

A torn ligament is called a shoulder sprain, and torn ligaments and shoulder sprains can occur as a result of a single event or from repetitive overuse activities, such as friction or high-impact sports, such as football, wrestling and skiing. Sports activities that involve repetitive movements over the head, such as swimming, tennis, throwing or weightlifting. From here, the importance of the research appeared through the development of a rehabilitation program using some rehabilitative exercises and thermal equipment to treat the injury of the internal ligament rupture of the shoulder joint among athletes. The problem of the research to be studied lies in the injury to which the shoulder joint is exposed due to multiple reasons, where the researcher decided to prepare a rehabilitative program that includes a set of exercises Rehabilitation in addition to thermal devices intended to rehabilitate the injury of a torn ligament of the shoulder joint in some athletes, where the aim of the research is to identify the effect of rehabilitative exercises and thermal devices in the treatment of ruptured ligaments of the shoulder joint to identify the effect of rehabilitative exercises on the range of motion and strength of the shoulder joint The researcher used the experimental method to design the group The one is after me, due to its relevance to the nature of the research problem. The research community is the athletes who practice different sports in the province of Diwaniyah. The research sample was chosen by the intentional method, and they are the (6) athletes who have suffered a torn ligament injury in the shoulder joint, who are (6) injured and various games (handball, volleyball, wrestling, weights, arena and field) After presenting and discussing the results, the researchers reached several conclusions, including that the use of exercises in the rehabilitation program had an effective effect on improving the variables of strength and range of motion, and the researcher recommended that the injured should continue to perform exercises assigned to the shoulder joint for the purpose of preventing future injuries.

Keywords: Shoulder sprain, Rehabilitation exercises, Ligament rupture

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INTRODUCTION

The shoulder joint is one of the joints that suffer most injuries in sports. The reason is due to the wide movements it makes and this weakness in its muscles on the one hand, and on the other hand, the sudden stress that may be more than the bearing strength of the tissues is what leads to injury to the shoulder ligaments are strong bands of fibrous tissue that connect the bones to each other in or around The shoulder joint, so a ligament tear is not an injury to the shoulder joint, but rather includes the acromioclavicular joint (also called the AC joint and is the place where the collarbone meets the highest point in the shoulder (the acromion). A tear of the ligament is called a shoulder sprain, and ligament tears and sprains can occur. In the shoulder as a result of a single event or from repeated excessive use activities, such as friction or high-impact sports, such as football, wrestling and skiing. Sports activities that involve repetitive movements over the head, such as swimming, tennis, throwing, or weight lifting. During the development of a rehabilitation program using some rehabilitative exercises and thermal devices to treat the torn inner ligament injury of the shoulder joint in athletes.

Research Problem: Research

The problem to be studied lies in the injury of the shoulder joint for various reasons, as the researcher decided to prepare a rehabilitation program that includes a set of rehabilitative exercises in addition to thermal devices designed to rehabilitate a torn ligament injury in the shoulder joint in some athletes

Research Objectives

1. Preparing a rehabilitation program using rehabilitative exercises and thermal devices to treat the shoulder ligament tear injury in the research sample.
2. Knowing the effect of rehabilitative exercises and thermal devices in the treatment of torn ligaments of the shoulder joint
3. Knowing the effect of rehabilitative exercises on the range of motion and strength of the shoulder joint
4. Knowing the effect of rehabilitative exercises on the degree of shoulder joint pain

Research hypotheses

1. The equipped rehabilitation program has a positive effect in treating a torn shoulder ligament injury on the research sample
2. There are statistically significant differences between the pre and posttests in the extent of movement and strength of the shoulder joint.
3. There are statistically significant differences between the pre and posttests in the degree of shoulder joint pain

Research areas

Human field: Athletes' shoulder injury and ligament rupture (6) patients

Time range: for the period from 05/12/2019 to 1/1/2020

Spatial domain: The Platinum Hall for physical fitness and body building, and the physical therapy centers for Al Diwaniyah.

Research Methodology and Field Procedures

Research Methodology

A used the researcher to approach the pilot my design Group b one - dimensional titles Ah ,and that suits the nature of the research problem.

Research community and sample

The research community is the athletes who practice different sports in Al-Diwaniyah Governorate. The research sample was selected by the intended method, and they are (6) athletes who suffered a tear in the ligaments of the shoulder joint and they are (6) injuries and various matches (handball, volleyball, wrestling, weights, arena and field). The program prepared by the researcher consisting of rehabilitative exercises was implemented. And some thermal devices that have been identified by experts that are appropriate to the type of injury. The duration of the implementation of the rehabilitation program was (6) weeks, with an average of (3) weekly rehabilitation sessions.

Sample homogeneity

Table (1) shows the homogeneity of the members of the research sample

indication	Coefficient of torsion	Mediator	standard deviation	Arithmetic mean	measuring unit	Variables
homogeneous	0.344	123.10	2.325	123.33	Degree	Bend forward
homogeneous	-0.243	15.40	2.677	15.30	Degree	Tide back
homogeneous	-0.344	120.00	2.800	120.55	Degree	Dimensions
homogeneous	0.222	10.00	2.232	10.40	Degree	Rounding
homogeneous	-0.346	85.60	3.333	85.30	Degree	Rotate in
homogeneous	0.876	45.70	8.543	45.20	Degree	Rotate out
homogeneous	0.670-	5.30	1.600	5.40	Kg	Maximum strength
homogeneous	0.171	7.230	0.532	7.222	Degree	Degree of pain

The devices, tools and means of gathering information

Machinery and tools used in the search

- Straps with elastic cords.
- Medicine balls of different weights.
- Short wave device.
- Electronic stopwatch.

Shafts (kunzats)

Means the collection of information

- FORM data.
- Arab and foreign sources and references.
- Personal interviews.
- Observation.
- The internet

Diagnosis

The infection is diagnosed by a specialist doctor through a clinical examination and rays (A. R. M) And through examination it has been identified infection (type of medium)


Natural remedies used
Tests used in the research

First - A test of the maximum strength of the shoulder joint

- Test objective :to measure the maximum strength of the shoulder joint.
- Tools used : single dumbbells of different weights and a bench
- Performance characteristics :The player sits on the bench while holding a dumbbell with the injured hand while placing the sound hand on the chest, and then the injured raises the injured hand with the dumbbells to the upper side with straight awareness through dimensional movement.
- Score recording: The highest weight a person can lift to the point of feeling pain.

Second - Description of the test to measure the range of motion of the shoulder joint (basic movements)

1. The aim of the test :To measure the range of motion of the shoulder joint in the basic (6) movements.
2. Tools used :Genometer device.
3. Description of the test :The patient performs the test by performing various movements in order to measure the range of motion of those movements, as follows:
   - The extension of the successor .
   - The bending of the front
   - Dimensions.
   - Rounding.
   - No turning in.
   - The rotation outside.

Extend backward bend forward dimensions

Recording :The score that appears on the geometers is recorded

Experience reconnaissance

The result of an exploratory experiment on 5/8/2018 on one of the injured, with the purpose here is to identify the method of performing the qualifying exercises, as well as to acquaint only with the method of measuring strength and measuring the extent of movement of the shoulder joint and to identify the obstacles that the researcher may encounter, of course, from the period of the qualifying program

Main experience

Before the exam

The researcher who conducted the preliminary test for the subjects of the research sample examines the strength, range of motion, and degree of pain data for the subjects of the research sample for the period from 9/20/20 1 8-15 / 4/20 19, as they began to test the degree of pain and the length of the movement day after measuring the maximum strength. The motor range and maximum strength test in the Platinum Hall was the agility, body building and pain measure performed by a specialist physician where tribal examinations were performed individually according to the date of each mouth.

Qualification program

A rehabilitation program was prepared from a group of rehabilitative exercises aimed at rehabilitating the shoulder joint, which is a set of exercises that include all elements of physical fitness in addition to the short wave device, where the duration of the program was (6). Weeks at a rate of (3) rehabilitation units per week throughout the program period for the sessions. Short wave therapy was used in the first and second weeks only

After the test

The researcher who conducted the initial test of the members of the research sample tested the strength data, range of motion, and the degree of pain of the subjects of the research sample for a period of 5/11/20 19 - 30/5/20 19 where they began to test the degree of pain and the long movement day after measuring maximum strength. The range of motion and maximum strength was performed in the Platinum Hall for agility and body building, and the degree of pain was measured by a specialist physician, where the examinations were performed individually according to the date of each mouth.

Statistical methods used in the research

The researcher used the statistical bag (SPSS) to obtain the data

Presentation, analysis and discussion of the negatives

Display, analyze and discuss the results of the range of motion test for the research sample

Table (2)Explains the differences between the pre and posttests to test the range of motion of the research sample

Statistical significance	Indication level	Values (T)	Dimensional		Tribal		measuring unit	the test
			±p	s	±p	s		
moral	0.000	29.672	1.455	150.40	2.325	123.33	Degree	Bend forward
moral	0.000	9.766	2.300	40.40	2.277	15.30	Degree	Tide back
moral	0.000	32.434	1.344	170.50	2.800	120.55	Degree	Dimensions
moral	0.000	17.655	1.345	20.40	2.232	40.40	Degree	Rounding
moral	0.000	33.444	1.334	150.40	3.333	85.30	Degree	Rotate in
moral	0.000	30.553	2.453	145.30	8.543	45.20	Degree	Rotate out
moral	0.000	7.321	1.454	10.40	1.600	5.40	Kg	Maximum strength
moral	0.000	7.454	1.656	3.20	0.532	7.222	Degree	Degree of pain

Discussion of range of motion outcomes

Through the results that emerged, testing the post-test variables, the extent of movement and development that occurred due to the rehabilitation program, had an effective role in overcoming the critical stage of the injury, as exercises and short waves were used to focus on the injury area during the treatment of this and the fact that the data of polytheism is the broad shoulder joint. So the researcher attributed that. Walt's moral improvement in the field of movement and passing the therapeutic phase with an appropriate range of motion for short facial waves that helped the early injury to heal under study. This causes the affected area to take a break, as it reduces spasticity and also increases the joint's range of motion. As for the rehabilitative exercises used, they helped the joint gain enough strength to help it get a good range of motion after healing the tissues. He was injured and became well-active because “the therapeutic exercise increases the flexibility and activity of the body and increases the nerve-muscle compatibility” (1) (2). The role of rehabilitative exercises that helped in obtaining the working muscles on the shoulder joint gave him sufficient strength and flexibility, which in turn led to an improvement in the angle of the joint as the joint increased its mobility as flexibility increased in the working muscle on that joint. "Gaining adequate flexibility of the muscles, tendons, and ligaments of a particular joint or joints in a specific group movement or activity depends on the amount and intensity of exercise that results in a wide range of movement as well as on the degree of flexibility acquired before the individual" (3).

Discuss the results of maximum strength and degree of pain

The rates of development that occurred to the variable maximum strength came in the subsequent test through short wave gas for the face and rehabilitative exercises first because it was a complementary one like those exercises for the last action "to stimulate blood circulation in the muscles and reduce muscle atrophy and contraction of fibrosis and muscles Maintains elasticity of the muscles surrounding the joint" (4). Where strength increases with the increase in the use of rehabilitative exercises, the correct and scientific progress in the specific pressures, in addition to giving rehabilitative exercises at the same time that lead to the development of strength, as (the development of moral strength is chosen) rehabilitative exercises that were conducted in the training curriculum, i.e. to reach Better results for strength development [5]. The shortwave workout device and the only qualified exercises in Q Buaan A for the first and second of the curriculum are one complementary to the other, because these exercises work "to stimulate blood circulation in the muscles, reduce muscular dystrophy, and muscle contraction." And fibrosis, and maintains muscle flexibility "(6).

Sixty Mania 1991 (7) and (Wolky D. 1998) (8) emphasized. There is a need to increase the tension and the amount of work done to develop the extreme forces, with an emphasis on the importance of the size of the resistance used and attention to its size, point of influence, success and longitudinal amount. Muscle tension, as well as the point of contact of the muscle tendon and its relationship to the joint. Special tables showed the qualifying work in the rehabilitation curriculum (the degree of pain that spreads statistically significant between the pre and post tests for this variable in the experimental group, and the researcher believes that the reasons for the development in the post tests of the causes were the result of a number of deficiencies in the degree of pain: This pain factor causes impedance of muscle work. Functional and affects the restriction of movement and causes inflammation that impedes the functioning of functional muscles as well as affects the ability of the joints to move and there is a common relationship between pain and movements of the spine in the area, so it is normal for motor ranges, maximum strength and prolonged strength to improve as a result of reduced pain as well as the positive effects of treatment and is included in the therapeutic approach used as exercises that allow the incoming and develop the flexible fixed and moving strength) o back muscles that have had a role in reducing

the degree of muscle pain, improving the motor ranges and developing strength and Thalassemia, in addition to the effects of the used analytical exercise, the commitment of the sample members through the application of the alternative approach In which the researcher was keen to give exercises that do not directly affect the back, which allowed the experimental sample individuals to benefit from a to rest the positivity and reduce tension, tension and pressure on the back, which will positively affect the health status of the research sample.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION

1. Rehabilitation exercises have an effective role in improving the variable range of motion of the shoulder joint among the subjects of the research sample
2. Rehabilitation exercises have an effective role in improving the maximum strength variable of the shoulder joint among the subjects of the research sample
3. Rehabilitation exercises have an effective role in improving the degree of pain of the shoulder joint among the subjects of the research sample

RECOMMENDATIONS

1. The necessity of continuing rehabilitative exercises in the future for the injured part to prevent the recurrence of the injury
2. The use of some physical therapy devices along with rehabilitative exercises speeds up the return of the affected organ to its normal position before the injury
3. The rehabilitation exercises given must be comprehensive exercises for all elements of the physical fitness so that the rehabilitation process for the injured joint is an integrated process.

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CONFLICT OF INTEREST

The researchers declare that there is no any conflict of interest

Table (3)It shows the number of sessions per day and the duration of each session for the devices used (first and second week)

Notes	Type of effect	The ratio of treatment time	Session duration	Number of sessions per day	Used devices	The week
thermal%80	thermal	% 50	5 min	2	micro wave	the first
thermal%80	thermal	% 50	5 min	2	micro wave	The second

The third week

Comforts	Totals	Duplicates	Distress	the exercise	Unit

3min	3	7	50%	1	First
	3	7	50%	2	
	3	7	50%	3	
3m	3	8	45%	1	the second
	3	8	45%	2	
	3	8	45%	3	
3m	3	7	55%	1	The third
	3	7	55%	2	
	3	7	55%	3	

A week of the fourth

Comforts	Totals	Duplicates	Distress	the exercise	Unit
3min	3	6	60%	1	First
	3	6	60%	2	
	3	6	60%	3	
3min	3	8	55%	1	the second
	3	8	55%	2	
	3	8	55%	3	
3 min	3	6	65%	1	The third
	3	6	65%	2	
	3	6	65%	3	

A week of the fifth

Comforts	Totals	Duplicates	Distress	the exercise	Unit
3 min	3	5	70%	1	First
	3	5	70%	2	
	3	5	70%	3	
3 m	3	6	65%	1	the second
	3	6	65%	2	
	3	6	65%	3	
3 m	3	5	75%	1	The third
	3	5	75%	2	
	3	5	75%	3	

A week of the sixth

Comforts	Totals	Duplicates	Distress	the exercise	Unit

3 min	3	5	80%	1	First
	3	5	80%	2	
	3	5	80%	3	
3 min	3	5	75%	1	the second
	3	5	75%	2	
	3	5	75%	3	
3 min	3	5	85%	1	The third
	3	5	85%	2	
	3	5	85%	3	