

PHYSIOTHERAPEUTIC AND WATER TREATMENT OF THE SUBACUTE INJURIES OF THE MAIN PECTORALS SURGICALLY TREATED.

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Introduction

During our ten years in the shoulder treatment experience, we have seen two clinical cases of main pectorals completely torn in professional athletes. This is a very rare injury, of which in the world literature about thirty cases are described. Both injuries were caused by an exercise at the flat bench in the moment of the lifting of the balance wheel, so during a maximal effort of the pectorals.

Patients and methods

Both patients underwent an operation *in the open air* with reinsertion of the tendon into the humerus diaphysis with little ancors and reinforcement of the suture with Marlex net. Both operations were executed by the same surgical equipe. The patients did not suffer from short and middle term complications and on both of them rehabilitative protocol followed the same phases.

The rehabilitative program provided for:

- 0-21 days: immobilization with a guard-cast;
- from 21st day: passive mobilization avoiding extra rotation up to 42 days;
- from the 42nd day: beginning of exercise in water and auto-mobilization with stretching exercises. The water sessions, which last about 45-60 minutes, were made three times a week;
- from the 49th day: beginning of exercises with elastics for internal and external rotatives muscles and for the lower bundles of the main pectorals and of the main dorsal muscles;
 - progressive insertion of the horizontal bundles of the main pectorals;
- from the 3rd month after surgery, the return to the sporting activity was allowed after some evaluation tests with an isometric machine (Total Shoulder – Technogym®, Gambettola, Italy).

Results

The first patient, a professional bodybuilder operated in March 2001, took up his professional activity again after about six months since the operation. The second patient, a basketball player operated in September 2002, took up his activity again after three month from the operation. In the isometric test the intra-extra rotation muscles ratio after four months since the operation, resulted well-balanced (intra-rotation 50% over the extra-rotation). For the basketball player we noticed a 10% difference between the injured arm and the healthy one, both in intra and extra-rotary actions, justified also by the fact that the operated arm was the not dominant left one. For the bodybuilder, the difference was of 23% as to intra-rotation and of 17% in extra-rotation. For the basketball player the peak of maximum strength at 0° with adducted arm resulted of 168N in intra-rotation and of 82N in extra-rotation for the injured arm, against 186 and 70N for the healthy one. For the bodybuilder the result was 170 and 79N for the injured arm and 208 and 92N for the healthy one.

Discussion

In these rare cases of main pectorals injuries we could point out the important qualities of the water exercises and of the tests made with the isometric machine. The Total Shoulder isometric machine let us do isometric tests both with adducted arm and with the arm at 90° at 90 days since the operation, made with an isometric progressive and maximal contraction of about five seconds. The test was done on both arms to compare the strength of the healthy arm to that of the operated one. This allows us to identify if muscle work done on the intra and extra rotary muscles can be sufficient or if it is necessary to change exercise in the rehabilitative plan. The water exercise plays a prevalent role during the initial phases of the active work as it allows us to train the shoulder muscles with a reduced load and thus without an excessive traction on tissues not yet healed. After 49 days we added a gradual isotonic reinforcement with elastic resistance (tubing) to the water exercise. Water has also given the possibility of an early restoration of the specific athletic gesture which has been done also in immersion.



The Rehabilitation of Sports Muscle and Tendon Injuries

Conclusions

The difference in the recover times did not depend on the type of injury but from the practiced sport. The body building requires a maximal undertaking of fibres for efforts which end in a short time, whereas for basket a greater muscle stretch ability is necessary. However we advised the basketball player, despite his return to the ground, to continue with the specific shoulder exercises. For the bodybuilder the return to sport has been more gradual getting to the maximal loads preceding the operation after about six months. In conclusion we think the description of cases very useful since the injuries are rare and hard to habilitate and they underline the important role of water and of the isometric tests as an essential assessment in strength recovering.