



SEVEN POSTOPERATIVE CONTROLLED HOME REHABILITATION PROTOCOLS BASED ON PATHOLOGY AFTER ARTHROSCOPIC ROTATOR CUFF SURGERY

Basim Fleega MD

Shoulder Service, Global Orthopaedic Clinic Giza, Cairo, EGYPT

Aim

The concept of rehabilitation after arthroscopic rotator cuff repair is described many times in the literature. Although there are many different types and degrees of rotator cuff tear no sophisticated protocol is presented in the literature as far as our knowledge. In this study we present seven protocols developed by the second Author and based on the different types of the rotator cuff pathologies. The program is done with coordination of the patient, the physiotherapist, and the surgeon.

SPECIAL CONSIDERATIONS IN ROTATOR CUFF REPAIR REHABILITATION

- **TRAUMA** (Direct trauma , Micro-trauma) (5%)
- (NO Adhesions, No Muscle Atrophy, No Scapular muscular contraction imbalance)
- **IMPINGEMENT** (90%)
- (Tendon Muscle Atrophy , Adhesions, Scapular muscle changes)
- **INSTABILITY** (Instability or dislocation tear)
- (Tear repair maybe associated with instability surgery)
- **FROZEN SHOULDER** (mobilization tear repair)
- (Stiff shortening of all tendons)

The main muscles that control scapular movement 35% of shoulder elevation

- **Upper Trapezius** Upward rotation, retraction, elevation
- **Middle Trapezius** Upward rotation, retraction
- **Lower Trapezius** Upward rotation, retraction, depression
- **Serratus Anterior** Upward rotation, protraction
- **Rhomboids** Downward rotation, retraction, elevation
- **Levator Scapulae** Downward rotation, elevation
- **Pectoralis Minor** Anterior tipping

Methods

Seven protocols for the different rotator cuff tear pathologies will be described. It is mainly in general a home exercises done by the patient 3 to 5 times a day with a clinic visit to the physiotherapist twice a week and the surgeon once every two. Weeks for 4 months. The program is in 3 phases, the passive assisted exercises phase, the active assisted phase and the strengthening and stretching phase.

The seven pathology classifications are: PARTIAL INSERTION SUPRASPINATUS (SSP) TEAR, PATIAL MEDIAL SSP TEAR, SMALL COMPLETE SSP TEAR, MEDIUM SIZE SSP TEAR, LARGE SSP TEAR, MASSIVE AND RECCURRENT TEAR, SUBSCAPULARIS TEAR, INFRASPINATUS TEAR AND THE BICEPS TEAR. Consideration must be made to the type of surgery if it was an Anchor suture fixation or transosseous, as Anchor implants may cause pain in the first postoperative weeks.

7 TYPES

1- PARTIAL INSERTION SSP TEAR 1
PATIAL MEDIAL SSP TEAR 1
SMALL TEAR SSP 1

2- MEDIUM TEAR SSP 2

3- LARGE TEAR SSP 3

4- MASSIVE and recurrent TEAR 4

5- SUBSCAPULARIS TEAR 5

6- INFRASPINATUS TEAR 6

7- BICEPS TEAR 7



PHASE 1	START	EXERCISES	SCAPULAR	SLING	RESTRICTIONS
Partial and Small	1ST	All 3 Passive exercises	1 st	Out doors	NO active Elbow Elev.
Medium	1ST	Pendulum 1 st Ext. Rot. 2 nd Elevation 3 rd	3 rd	Out doors	NO active Elbow Elev.
Large	3RD	Pendulum 3 rd Ext. Rot. 4 th Elevation 5 th	3rd	Out doors +mobile	NO active Elbow Elev.
Massive Recurrent	3RD	Pendulum 3 rd Ext. Rot. 4 th Elevation 5 th	7 th	All the time	Only Hand use
Subscapularis	3RD	Pendulum 3 rd NO Ext. Rot. Elevation 7 th	1st	Out doors	NO Active Elbow Elev. Or Int. Rot.
Infraspinatus	1ST	Pendulum 3 rd Ext. Rot. 4 th Elevation 5 th	14 th	All the time	NO Active Elbow Elev. Or Ext. Rot.
Biceps	3RD	Pendulum 3 rd Ext. Rot. 4 th Elevation 5 th	1 st	All the time	NO Active Elbow Flexion



PHASE 2	START	EXERCISES	RESTRICTIONS	SCAPULAR
Partial and Small	4 weeks	All exercises		Manual
Medium	6 weeks	2-3-4-5-6 Act. weeks 7-8 Stretching		Manual
Large	6 weeks	2-3-4-5-6 Act. weeks 7-8 Stretching	NO weight elev. > 2Kgm	Manual
Massive Recurrent	6 weeks	2-4-6 Active weeks 7-8 Stretching	NO weight elev. > 2Kgm	Manual
Subscapularis	6 weeks	All exercises Except 9	NO weight Int. Rot. > 2Kgm	Manual
Infraspinatus	6 weeks	All exercises Except 9	NO weight Int. Rot. > 2Kgm	Manual
Biceps	6 weeks	All exercises Except 9	NO Active Elbow Flexion	Manual



PHASE 3	START	EXERCISES	RESTRICTIONS	SCAPULAR
Partial and Small	10 weeks	All exercises		Manual
Medium	12 weeks	1-2-3-4-5c Strengthening 1-3 Stretching		Manual
Large	12 weeks	1-2-3-4-5b Strengthening 1-3 Stretching	NO weight elev. > 4Kgm	Manual
Massive Recurrent	12 weeks	1-2-3-4-5a Strengthening 1-3 Stretching	NO weight elev. > 4Kgm	Manual
Subscapularis	12 weeks	All exercises		Manual
Infraspinatus	12 weeks	All exercises		Manual
Biceps	12 weeks	All exercises		Manual



RANGE OF MOTION FOLLOW UPOF ELEVATION-EXTERNAL ROTATION AND INTERNAL ROTATION(Report to surgeon)

Phase III Follow up Chart athletes 3P Home Rehabilitation

Results

The results of this program are widely more effective than other programs as reported by ten physiotherapists involved in the study of 100 cases of outlet impingement rotator cuff tears. No financial problems as the rehabilitation cost were inclusive in the surgery cost which increases the commitment level of the patients.

Conclusions

In the last 10 years the senior last Author has been using this rehabilitation protocols with distinguished results so that we recommend this segmentation of rehabilitation of rotator cuff repair according to the pathology and type of repair.

RECOMMENDATIONS

- 1- YOU HAVE TO KNOW THE HISTORY
- 2- YOU HAVE TO KNOW THE PATHOLOGY
- 3- MAKE YOUR REHABILITATION PROGRAM ACCODINGLY
- 4- YOUR WORK HAS TO BE ASSISTED BY THE PATIENT WORK AT HOME 3-5 TIMES A DAY SELF ASSISSTED EXERCIESES NOT EXCEEDING 5 TO 8 MONUTES EVERY TIME)
- 5- SURGEON HAS TO MONITOR THE PROGRESS AT LEAST EVERY 3 WEEKS FOR THE FIRST 4 MONTHS
- 6- DOCUMENT THE PROGRESS TO BE SEEN BY ALL 3 PARTIES