Appendix 1. Home program exercise sheets

SHOULDER HOME PROGRAM

Orthopedic and Arthroscopic Unit

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There are four exercise phases:

1 - Essential preparation exercises: «Cowboy» and «Mirror»

If these exercises are not performed correctly, the other exercises will not help you. The Mirror exercise will show you how to stand normally with your shoulders lowered and how to lift your arm without straining your shoulder. The Cowboy exercise will help you relax, eliminate pain, and prevent poor postures that could add to your shoulder stiffness. It can be performed anytime, but especially before the exercises in the next phase.

2 - Gentle exercises to increase or maintain muscle awareness: «Gymnast» and «Assisted active elevation» These are used to mobilize the shoulder while limiting muscular contraction and protecting any repaired tendons.

3 - Natural mobilization exercises: «active elevation», birdy and movements in front of a mirror These exercises will help you relearn muscle synchronization and avoid poor posture when lifting up your arm.

4 - Exercises to incorporate into daily living: «Dangling arms», «Chicken» and «Thumb».

«Home exercise program – daily patient education»

Main principles:

The shoulder is a fragile, mechanically complex joint. If the joint does not move normally, normal sensations are lost and painful reflex reactions occur that can something be impossible to control (complex regional pain syndrome). A joint is made to be moved. If it is not moved through its full range of motion, it will quickly develop adhesions, which can then take months to release.

Pain will occur in a shoulder that does not have full flexibility. Since the joint no longer functions naturally, rotation becomes abnormal, rubbing against the acromion causes pain and muscles quickly lose strength.

The pain-stiffness vicious circle occurs if joint mobility is not maintained through continuous exercises or if an existing poor reflex posture results in blocking and lifting of the shoulder, even if the patient is often not conscious of this posture. This instinctive posture is a protective shoulder reflex that often starts well before surgery. Although a challenging condition, it must be addressed. For each exercise, it is absolutely necessary to keep the shoulder down.

Continuous work by the patient throughout the day is needed to ensure that the shoulder does not stiffen up and that reflex postures do not develop. Home exercise programs are based on patient education. Caregivers provide education so that the patient understands, becomes aware and manages the pathology by himself or herself.

The exercises in this document have multiple goals:
- avoid poor reflex postures,
- avoid stiffness and keep the shoulder flexible,
- keep as much muscle strength as possible,
- protect, gently revive, and then naturally add muscle mass to repaired muscles.

Practical advice:

Pain should not restrict the exercises except if it leads to a poor reflex posture of the shoulder that must be eliminated (Cowboy exercise) before starting other exercises.

Pain will go away when rotation returns to normal, since rubbing against the acromion will be progressively reduced. Each patient, supervised by the massage therapist / physical therapist, must find a balance between «trying to hard» and needlessly being in pain, and «not trying hard enough» that will result in progressive stiffening, which once in place will need many months to resolve, independent of how successful the surgical procedure was.

Work sessions must be short and as frequent as possible. In return, if the exercises are performed correctly and often enough, the shoulder will become fully functional with normal strength and flexibility as soon as dynamic shoulder re-centering returns.
PREPARATION EXERCISE: GOOD SHOULDER POSITION DURING MOVEMENT

« MIROIR»
1- Stand in front of a mirror.
2- Keep your head straight, try to make yourself taller by lifting your chin and lowering your shoulders.
3- If possible, lift both arms equally while keeping your shoulders low and your chin raised.

« COW BOY »
1- Sit on a chair with your legs apart. Put your healthy arm on the knee of the non-injured side.
2- Let your injured arm hang between your legs.
3- Your shoulder must be completely relaxed and hanging freely.
4- Slowly lean forward until your injured arm is vertical and your fingers nearly touch the ground.
5- WAIT until your shoulder is completely relaxed (a few seconds). Make circular movements (go in circles) and swing your arm side-to-side and front-back.
6- Once you feel the desired effect, lift yourself back up making sure that your shoulder stays down.

This exercise will provide pain relief and should be performed as needed depending on your pain level.

EXERCISES TO REVIVE MUSCLES: ASSISTED MUSCLE WORK

« GYMNASI »
1- Sit on a chair, with the palm of both hands placed on each side of the chair in front of your hips.
2- Pull your shoulders back and stick out your chest.
3- Gently press down into the palms of your hands. (hold for 6 seconds, repeat 5 times).

CAUTION: If you had rotator cuff repair surgery and your doctor gives the go-ahead, the pressure on the palms of your hands can be progressively increased until your buttocks are unloaded and then completely lifted off the chair.

4- During this exercise, do not go beyond your pain threshold to make that any surgical repair that was performed is not damaged.
**ASSISTED ELEVATION**

1. Lie on your back, preferably on a hard surface with your head flat. Bend your knees.
2. Make sure that your back is flat and that your shoulder stays low (be aware of this during the entire time you are performing the exercise).
3. Before lifting up your arm, pretend that your arm is completely asleep. Relax.
4. Make sure that elbow of the injured arm is extended with the palm facing up before starting the movement.
5. Take the wrist of the injured arm with your other hand and pull it towards your foot.
6. Use your healthy arm to slowly lift up your injured arm. Keep your elbow straight. Your "asleep" injured arm does not participate in the movement; it should feel heavy, like it is paralyzed.
7. Go as far back as possible and try to touch back behind you with the palm facing up.
8. Rest a few seconds in maximum extension.
9. To return to the starting position, bring the injured arm back while pushing again the healthy arm, which provides resistance. This return motion must be slow, controlled and resisted by the other arm up to where the injured arm is back at the starting position. When you are lowering your arm, it is no longer asleep since it pushes against the other hand.

**NATURAL MOBILIZATION EXERCISES**

**NORMAL ELEVATION**

1. Lie on your back, preferably on a hard surface with your head flat. Bend your knees.
2. Make sure that your back is flat and that your shoulder stays low (be aware of this during the entire time you are performing the exercise).
3. Make sure that the elbow of the injured arm is extended with palm facing up before starting the exercise.
4. Without assistance, lift your arm as far as possible towards the back until it touches the mattress, with the palm facing up.
5. Rest a few seconds.
6. Return to the starting position by pushing against your healthy arm, which provides resistance.

When you can easily perform this exercise lying down, start doing it while sitting down or standing up:

1. Stand with your back straight against the wall and your knees slightly bent.
2. Bring both arms up backwards as far as possible.
3. Rest a few seconds.
4. Return to the starting position by pushing against

**BIRDY** variation: same movement but spread your arms.
Effect of classic rehabilitation exercises on clinical progression. Deleterious exercise (red); useless exercise (blue); useful exercise (green).

DAILY EXERCISES: MUSCLE AND RANGE OF MOTION WORK

**Dangling Arms**
1. Any time you walk (without a brace).
2. Before starting off, relax your neck then let your arm hang down and pull your shoulder back on your injured side.
3. When you are walking, try to feel your shoulder dangling naturally with your arm hanging like it was asleep.
4. Do not lift your shoulder by pushing in your elbow against your trunk when you encounter an obstacle or when you use your hand.

**Chicken**
1. Perform this any time you are seated.
2. Cross your arms across your stomach and let your elbows drop to your sides.
3. Slowly move your elbows forward without moving your hands.
4. Drop your elbows again.

**Thumb**
1. Perform this any time you are seated.
2. Let your arm drop to your side with elbow extended.
3. Let your arm really relax and hang.
4. Slowly turn your thumb towards the inside until it faces backwards.
5. Wait a few seconds.
6. Return to the starting position (thumb facing slightly forward).
7. Slowly turn your thumb towards the outside this time until it faces backwards.
8. Repeat as many times as you want.

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