

Supplemental appendix: Full description of the interventions.

INTERVENTION	EXPERIMENTAL GROUP	CONTROL GROUP
<p>MULTIMODAL PHYSICAL EXERCISES</p>	<p>→Timing, mode and setting: 1- hour sessions, 3 times a week; individually-based; rehabilitation room.</p> <p>→Intensity, repetitions and duration: Medium; 10-12 per exercise; 3-5 minutes each exercise (adequate periods of rest are warranted if the patient feels tired).</p> <p>Week 1-2: Initial mobility and upper limb awareness exercises. Exercises to recover shoulder and upper limb movements based on physiological patterns of movement and active postural control (ideal postures of the upper spine, shoulder and upper limb (as per *) when supine, sitting and standing.</p> <p>Week 3-12: Mobility and strengthening exercises. Exercises for scapula-humeral mobility and exercises for muscles mainly involved (rotator cuff muscles, thoraco-appendicular muscles and scapulo-humeral muscles), progressively increasing their strength, resistance, speed, power and complexity of movement patterns.</p> <p>Week 3-12: Task-oriented training. Moving objects of different shapes and sizes in different directions, picking up objects on a table from different positions, composing complex objects by merging components placed on a table, catching objects thrown at different heights and velocities.</p> <p>Week 9-12: Task-oriented training (the same as above and) while moving from a lying position to a sitting position and from a chair to a standing position, walking and turning at the preferred speed, ascending/descending stairs, and climbing obstacles.</p> <p>Week 1-12: Implementation of graded exposure to and pacing of exercises and activities learned.</p> <p>Week 11-12: Round-up of exercises learned while checking</p>	<p>→Timing, mode and setting: 1-hour sessions, once a week; group-based; rehabilitation room.</p> <p>→Intensity, repetitions and duration: Medium; 10-12 per exercise; 3-5 minutes each exercise (adequate periods of rest are warranted if the patient feels tired).</p> <p>Week 1-12: Mobility exercises with passive mobilization of shoulder joints.</p> <p>Week 3-12: Strengthening exercises by involving humeral and upper limb muscles.</p> <p>Week 3-9: Segmentary muscle stretching by including shoulder girdle and upper limb muscles.</p> <p>Week 1-12: Postural control by involving exercises to develop motor control of cervico-thoracic region, shoulder and upper limb.</p> <p>Week 11-12: Round-up of exercises learned while checking their correct execution.</p>

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OCCUPATIONAL THERAPY	<p>Sling care information. Patients are instructed on how to use the sling correctly to ensure the upper arm remains hanging at all times to keep the fracture in the correct position. Patients are instructed to keep the arm in the collar and cuff and not to rest their elbow on cushions, pillows or chair arms for example, as this may move the shoulder up.</p> <p>Ergonomic principles based on previous working activities. Patients are instructed on: i) physiology of muscle contraction and movements (e.g. general information on skeletal system, structure of muscles and contraction characteristics, metabolism during exercises, principles of biomechanics); ii) trauma mechanisms of proximal humeral fractures and main consequences on bones, joints, nerves, and soft tissues; iii) ergonomic advice such as modifications of working equipment, workstation layout, work practices, and raw material packaging. Furthermore, administrative changes are discussed such as employee rotation, longer rest breaks, and reduced production rates.</p>	Sling care information. As per experimental group.

*Kendall F, McCreary E, Provance P. Muscles: testing and function. 4th ed. Baltimore: Williams & Wilkins. 1993.