Manipulation under anesthesia with home exercises versus home exercises alone in the treatment of frozen shoulder: A randomized, controlled trial with 125 patients


Introduction
Frozen Shoulder is characterized by fibrous adhesions in the joint capsule & causes pain & increasing stiffness in the affected shoulder. The cause is unknown but those with hemiplegia & diabetes are predisposed. If untreated, it can last up to 3 years. There is little evidence for any one treatment to shorten the duration of the symptoms. Manipulation under anesthesia (MUA) is widely used but there are no randomizes trials on its effectiveness.

Aims and objectives
This is a blinded randomized trial with a one-year follow-up in 3 hospitals in Southern Finland between 1999 and 2002. The aim of the trial was to evaluate the effect of home exercises and MUA on frozen shoulder by comparing the intervention with home exercises alone in 125 patients.

Methods
Three hospitals in Finland recruited patients who were diagnosed with frozen shoulder. The specialists in physical medicine and rehabilitation ensured that the history and physical findings fit the diagnosis of frozen shoulder in all patients. They also controlled the list of exclusion and inclusion criteria and carried out the manipulations. The physicians measured ROM of each patient with goniometry & a tape measure. All patients underwent radiography of the shoulder joint. Shoulder mobility of no more than 140° in elevation and 30° in external rotation was allowed. Exclusion criteria included arthritis, OA, Rotator Cuff tear & traumatic bone or tendon changes.
A structured questionnaire was used to inquire about health status, intensity of shoulder pain, chronic disorders, disability & medication.
Data on shoulder symptoms was obtained with a modified version of the Shoulder Disability Questionnaire pretreatment, at 6 weeks, 3, 6 and 12 months. The 125 patients were randomized into 1 of 2 study groups by the physician in a sealed opaque envelope and the MUS’s were performed on one group (n= 65) within 2 weeks. Physiotherapists (unaware of the treatment group) were trained to give similar instructions to each patient. Each patient was seen twice & gave a written daily training program including pendular exercises and shoulder stretches. The advice was to exercise within pain limits.
Follow-up examinations were performed at 6 weeks, 3, 6 and 12 months by a Physiotherapist who was unaware of the treatment group.

Results
The demographics and clinical characteristics of the patients at baseline were similar. In outpatient treatment the most frequently used treatment was a
prescription for analgesia. The dropout rate was significant with 15 patients absent from follow-up at 6 weeks, 34 at 3 months, 42 at 6 months and 46 at one year. The patient’s condition improved more quickly than expected in both groups. The patients in the manipulation group had slightly better shoulder mobility at 6 weeks and 3 months. There was only a slight difference between the 2 groups in pain intensity and no difference in disability at 6 months and one year.

Limitations and considerations

- The authors noted that glenohumeral mobility was almost normal within one year of onset of shoulder symptoms whereas medical literature generally notes the condition lasts much longer.
- There was a significant drop out rate of 20% at 3 months, and one-third at later follow up.
- There is a risk of complications associated with manipulation of the glenohumeral joint under anesthesia.
- The authors felt no cost-effectiveness analysis was indicated, as there was no difference in outcomes between the 2 groups.
- There are still questions for future trials, e.g. patients only saw a Physiotherapist twice in both groups for instructions on exercises so another question is a training program more effective than no treatment at all?

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Conclusion

In this study, shoulder pain & mobility was almost normal within a year of onset of symptoms (6 months after randomization) in both groups. MUA only had slight advantage over exercise alone for up to 3 months but had no advantage over an exercise program after one year.