

ABSTRACT

Enhancement of Glenohumeral Joint Stability by Capsular Shrinkage via Thermal Assisted Surgery

Kristine D. Braun, DPT

Purpose

The purpose of this study was to determine, through a review of the existing literature, the role thermal energy plays in relation to four factors: enhancement of glenohumeral joint stability, current applications of the thermal energy devices, historical effects and their clinical implications, and the effects on rehabilitation guidelines.

Methodology

The research design for this study consisted of identifying articles in the literature that pertained to one of the four factors under investigation.

Sources and kinds of data included the professional journals, books, and conference proceedings that were identifiable through a computerized search of the MEDLINE database.

Analysis of the data involved allocating the documents identified through the literature search to the most appropriate factor in the study, composing synopses of each document in order to provide a manageable amount of data with which to work, and synthesizing the information contained in the synopses to form answers to each of the factors under investigation.

Findings

Glenohumeral joint stability can be enhanced by thermally assisted capsular shift, which addresses the capsular redundancy that is the primary cause of shoulder subluxators/dislocators.

The Ho:YAG laser is the thermal energy device that is used most frequently but the radiofrequency device is also used. Both devices have strengths and weaknesses when used to produce shrinkage.

In addition to thermal energy devices, open procedures such as the Bankart and modified Bankart have been used to enhance joint stability, but thermal energy devices provide patients with advantages not available in open procedures.

Because there is little pain after the procedure, rehabilitation guidelines need to take into account the possibility of treatment compliance problems. Treatment needs to

include a short immobilization period, active and passive range of motion, local measures, strengthening, proprioceptive neuromuscular facilitation and plyometrics..

Conclusions

Based on the findings of the current study, it is clear that glenohumeral joint stability can be enhanced through capsular shrinkage by thermal assisted surgery, however little is known about the long term histological effects of thermally treated tissue. Further, more comparisons need to be made between stable and unstable joints, since it has been determined that they have a different histological makeup.