Jan 13, 2021

Differences in supraspinatus occupation ratio betweenthe symptomatic, the contralateral asymptomatic shoulder and control subjects: A cross-sectional study.

snl [1]

[1]University of Granada

1 Works for me This protocol is published without a DOI.

snl snl

ABSTRACT

Background: The relationship between supraspinatus tendon thickness and the acromiohumeral distance at both rest position and shoulder elevation is still to be explored in those with chronic shoulder pain.The aim is to compare supraspinatus occupation ratio (OR) at 0° and 60° of shoulder elevation measured by ultrasound imaging in the symptomatic shoulder, the contralateral asymptomatic shoulder and in healthy subjects.

Material and Methods:This was across-sectional, observational study.A sample of fifty-six participants with subacromial pain syndrome (SAPS) in their dominant arm was recruited in three different primary care centres. Forty participants without shoulder pain were also recruited.The acromiohumeral distance at 0° and 60° of active shoulder abduction as well as the supraspinatus tendon thickness were measured by ultrasound in these groups.

Results: Supraspinatus OR at 60° was significantly greater in symptomatic compared to asymptomatic shoulders (p=0.04)and healthy shoulders (p = 0.008).The percentage of change in supraspinatus OR from rest position to 60° was also greater in symptomatic shoulders when comparing with asymptomatic (p=0.01) and healthy shoulders (p=0.03). No other statistically significant differences for the rest of comparisons were found.

Conclusions: Supraspinatus OR may explain shoulder pain in chronic conditions. Further studies at acute and chronic conditions after a physiotherapy treatment are needed to explore its usefulness in clinical practice.

Keywords: Shoulder pain; ultrasonography; chronic pain; rotator cuff; occupation ratio; supraspinatus.

PROTOCOL CITATION

snl 2021. Differences in supraspinatus occupation ratio betweenthe symptomatic, the contralateral asymptomatic shoulder and control subjects: A cross-sectional study.. **protocols.io** https://protocols.io/view/differences-in-supraspinatus-occupation-ratio-betw-brd6m29e

CREATED

Jan 13, 2021

LAST MODIFIED

Jan 13, 2021

PROTOCOL INTEGER ID

46238

GUIDELINES

The study has been reported following the recommendations of STROBE statement for observational studies.

MATERIALS TEXT

Images in grey scale using a B-mode were captured, and an ultrasound imaging system, Sonosite M-turbo (GE Healthcare, Wauwatosa, WI) with a 6– 13 MHz linear transducer, was used. Images were obtained by a physiotherapistwith 8 years of experience on rehabilitative ultrasound imaging (RUSI).

Integrity of both shoulders was assessed in patients with unilateral chronic SAPS, where the standard III, IV and V views according to the modified 5-grade Wiener and Seitz classification[24] were supposed to be an exclusion criteria. In healthy subjects, the dominant arm was assessed, where the presence of asymptomatic rotator cuff abnormality was understood as exclusion criteria. Three measurements were taken for all the structures and spaces by the examiner (supraspinatus tendon thickness and the acromiohumeral distance respectively). An interval of one minute was provided between the three measurements, during which the patient was encouraged to move freely. Patients were then repositioned and the second and third set of measurements was successively taken. The ultrasound examiner was blind to all measurements (values were obscured by placing a shield on the ultrasound screen, meanwhile a research assistant registered the data), and was blind to the previous condition of each patient (shoulder function and pain severity) as well as to the affected side and dominant upper limb. All the ultrasound measurements were expressed in centimeters.

SAFETY WARNINGS

Data from the study will be only accessible to the research team and will be stored on password-protected computers at the University of Malaga. Paper-form data are stored in locked cabinets located at the Department of Physiotherapy of that same university. In order to preserve data confidentiality study participants wereassigned an identification number which will be kept for the duration of the study. A list of participant identification numbers were created and separated from the de-identified data.

ABSTRACT

Background: The relationship between supraspinatus tendon thickness and the acromiohumeral distance at both rest position and shoulder elevation is still to be explored in those with chronic shoulder pain.The aim is to compare supraspinatus occupation ratio (OR) at 0° and 60° of shoulder elevation measured by ultrasound imaging in the symptomatic shoulder, the contralateral asymptomatic shoulder and in healthy subjects.

Material and Methods:This was across-sectional, observational study.A sample of fifty-six participants with subacromial pain syndrome (SAPS) in their dominant arm was recruited in three different primary care centres. Forty participants without shoulder pain were also recruited.The acromiohumeral distance at 0° and 60° of active shoulder abduction as well as the supraspinatus tendon thickness were measured by ultrasound in these groups.

Results: Supraspinatus OR at 60° was significantly greater in symptomatic compared to asymptomatic shoulders (p=0.04)and healthy shoulders (p = 0.008).The percentage of change in supraspinatus OR from rest position to 60° was also greater in symptomatic shoulders when comparing with asymptomatic (p=0.01) and healthy shoulders (p=0.03). No other statistically significant differences for the rest of comparisons were found.

Conclusions: Supraspinatus OR may explain shoulder pain in chronic conditions. Further studies at acute and chronic conditions after a physiotherapy treatment are needed to explore its usefulness in clinical practice.

Keywords: Shoulder pain; ultrasonography; chronic pain; rotator cuff; occupation ratio; supraspinatus.

1