



**Is there a roll of Anterior Acromioplasty in treatment of rotator cuff tears or chronic subacromial Bursitis? an arthroscopic study for standardizing the decision and technique**

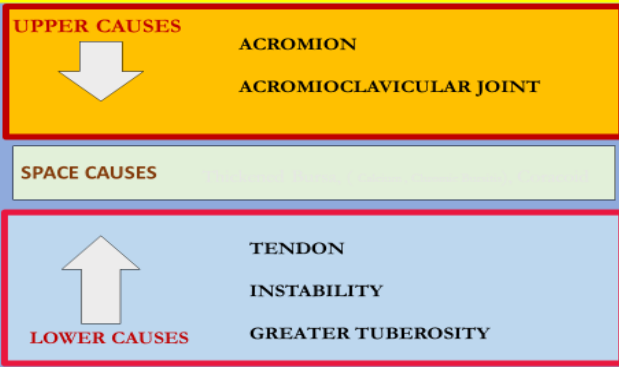
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**Aim**

The determination of the appropriate amount of bone to resect is a common technical difficulty in performing arthroscopic subacromial decompression as well as recent controversy in whether there is an indication for anterior acromioplasty or subacromial decompression. The aim of this study is to answer the question of whether to do a subacromial decompression in cases of rotator cuff tear repair or chronic impingement syndrome and if needed, how much bone should be removed from the anterior acromion.

We describe an arthroscopic technique to measure and classify the subacromial space and find any relation between the size of the space and the pathology. This technique is based on an arthroscopic classification of size of the subacromial space by using a special measuring needle. Then finding a relation between the size of the subacromial space and the pathology which give us standards for taking the decision whether to make an anterior acromioplasty and the amount of bone to be removed.

**Etiological Classification of Impingement Syndrome or Subacromial Narrowing**



**Methods**

The subacromial space is divided into four types based on arthroscopic measuring of the space between the anterior acromion and the rotator cuff (Narrowing Type 3 space: no space (the anterior acromion is in contact with the supraspinatus), Type 2 space: 1-6 mm, Type 1 space: 6-12mm, Type 0: more than 12mm). 289 cases of outlet impingement had an arthroscopic measurement of the subacromial space in a sitting position with the arm hanging (As a standard for measurement).

**TYPE 0**  
Review of 410 cases

• AAC Space more than 12mm

0% Impingement rotator cuff tear  
0% Impingement stage II  
5% calcium (after removed)  
75% Instability Impingement

**TYPE I**  
Review of 410 cases

AAC Space 6mm-12mm

5% Impingement rotator cuff tear  
14% Impingement stage II  
55% calcium (after removed)  
25% Instability Impingement

**TYPE II**  
Review of 410 cases

AAC Space 1mm-6mm

22% Impingement rotator cuff tear  
40% Impingement stage II  
40% Calcium (after removed)  
0% Instability Impingement

**TYPE III**  
Review of 410 cases

AAC Space 0 cm

75% Impingement rotator cuff tear  
40% Impingement stage II  
0% Calcium  
0% Instability Impingement



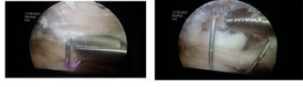
### MEASURING THE AAC SPACE

- Patient in a sitting position
- Arm is hanging
- Arthroscopic assessment
- Using measuring needles



### Arthroscopic Subacromial Decompression of the Space between the anterior Acromion and the Cuff

- Using the Measuring Needle Decompression Technique
- NEW OPTION OF DECOMPRESSION STANDARDS



### Material and Methods

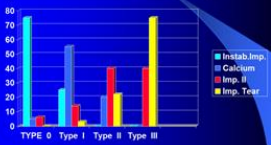
- 133 cases of small to large tears
- Massive tears were excluded
- All 410 cases Radiological and arthroscopic evaluation



## Results

direct relation between impingement syndrome pathology and the arthroscopic subacromial space classification was found. No outlet impingement pathology of rotator cuff tear was found with Type 0 space (more than 12mm) and there was a relation between the size of the tear and the narrowing of the subacromial space. This study showed no relation between the shape of the acromion and the presence of the tear, also no relation between the radiological measurement of the subacromial space and the tear.

### RESULTS : AAC space relation to pathology



### RESULTS

#### 133 cases of Impingement tears

- Average AH- space 7.9 mm (bet. 1 and 15)
- Average AAC-space 6.0 mm (bet. 0 and 15)
- Spur formation (ant acromion) 17/133 cases
- Flat 28 %
- Curved 38 %
- Hooked 34 %

### RESULTS

#### 133 cases of Impingement tears

- No relation between the Shape of the Acromion and the AAC-space
- No relation between the AH-space and the AAC-space

All the 289 cases with outlet impingement syndrome with or without tear who had subacromial decompression for narrowing (Space less than 12mm) were followed for more than ten years. All cases were satisfied with the surgery and had a normal shoulder function.

## Conclusions

according to this study indication for subacromial decompression in cases of rotator cuff tear or chronic bursitis is only to be done when the subacromial space is less than 12 mm. The long-time results of cases of anterior acromioplasty done based on this treatment standards have a long term very good results.

### Conclusion

- No relation between the shape of the acromion and the rotator cuff tear
- No relation between the radiological AH-space and the rotator cuff tear.
- Increased narrowing of the AAC -space is associated with
- increases in the incidence of rotator cuff tear
- As no Impingement stage II or Impingement Tear was found in Type 0 AAC space we recommend a subacromial decompression of more than 1.2 cm if needed