

ORTHOSPORTS

QUESTION FOR PHYSIOTHERAPISTS



Question

When is a partial rotator cuff tear significant enough to require surgery?

Answer

BACKGROUND:

Partial cuff tears are defined as tears involving only part of the footprint of the rotator cuff. They can occur on the bursal or articular side of the rotator cuff. Classifications of these tears have been described, as grade I (0-3mm), II (3-6mm), and III (>6mm or 50% of footprint) based on the extent of the tear.



The Ellman Classification: (left) grade I, (middle) grade II, and (grade) III.

Patients with partial rotator cuff tears usually present with impingement pain. They occasionally can show signs of weakness, mimicking the presentation of a full thickness rotator cuff tear. The diagnosis is best made using an MRI Arthrogram. The tear can sometimes be seen on plain MRI or ultrasound but ultrasound can be misleading. On the MRI increased signal intensity is present in the footprint of the supraspinatus, although the actual grade can only be determined at surgery.

EXPLANATION:

Conventionally, partial rotator cuff tears have been treated initially non-operatively, including physiotherapy, activity modification and injections. Similar to patients with impingement, physiotherapy is tried for three to six months prior to considering surgery.

When adequate physio and injections have failed to provide the patient with relief of symptoms, surgery is an appropriate next step, involving an arthroscopic procedure with debridement or repair as necessary. The only time that I would consider operating on a partial rotator cuff tear sooner is if the tear is 90% or greater (almost full thickness) with worsening of symptoms during non-operative treatment. Patients with large partial cuff tears are usually told that there is a risk that the tear can get bigger without surgery.

LITERATURE SUPPORT:

After the decision for surgery is made, the next major decision is how big a partial tear is to warrant repair. Classically, repair is performed on grade III (greater than 50%) tears. A study by Weber demonstrated better outcomes with repair of tears greater than 50%. A recent study by Mazocca looked at the strain on partial tears created on cadavers. They found that tears greater than 50% had significantly more strain (i.e. more easily torn) than intact rotator cuffs, supporting the repair of these tears. Tears less than 50% can be treated with debridement, with or without acromioplasty.

CONCLUSION:

After the decision for surgery is made, the next major decision is how big a partial tear is to warrant repair. Classically, repair is performed on grade III (greater than 50%) tears. A study by Weber demonstrated better outcomes with repair of tears greater than 50%. A recent study by Mazocca looked at the strain on partial tears created on cadavers. They found that tears greater than 50% had significantly more strain (i.e. more easily torn) than intact rotator cuffs, supporting the repair of these tears. Tears less than 50% can be treated with debridement, with or without acromioplasty.

- **Todd Gothelf, Orthopaedic Surgeon**

REFERENCES and RECOMMENDED READING

Ellman H. Diagnosis and treatment of incomplete rotator cuff tears. Clin Orthop Rel Res. 1990;254:64-74. Classifies partial rotator cuff tears and recommends treatment.
Mazocca, AD, RinconLM, O'Connor RW, Obopilwe E, Andersen M, Geaney L, Arciero RA. Intra-articular Partial-Thickness Rotator Cuff Tears. Am J Sports Med 2008 36:110. This was a biomechanical study testing the strain on the rotator cuff with increasing partial rotator cuff tears. Partial tears greater than 50% resulted in significantly increased strain compared to the intact rotator cuff. Repairing the tendon restored original strength. The authors supported repairing partial-thickness tears greater than 50%.
Weber SC. Arthroscopic debridement and acromioplasty versus mini-open repair in the treatment of significant partial-thickness rotator cuff tears. Arthroscopy. 1999; 15:126-31. Reviewed 32 patients with debridement and 33 patients with mini-open repair of >50% partial thickness tears. In Debridement group, significant number had fair results. Three patients had late ruptures, and acromioplasty did not prevent this. No re-ruptures occurred with mini-open repair.

Welcome to the first of Orthosports' new monthly "Question for Physiotherapists".

Firstly, thank you to those physiotherapists who attended our recent Annual Orthopaedic Updates Lecture. It was an extremely successful day and we hope you felt it worthwhile.

For those who didn't attend and missed our Launch of this initiative, the aim is for the doctors at Orthosports to provide answers to the most compelling questions that you may have regarding care of orthopaedic problems.

Please feel free to write in about issues that you feel we can provide some helpful tips. From technical surgical questions to routine patient care, we aim to shed some light on a broad range of issues.

Please note that we will not be answering questions about specific patients and the advice is of a general nature only.

All questions can be submitted at question@orthosports.com.au.

Regards,
The Team at Orthosports

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