



# Breaking the Barriers of Shoulder Calcific Tendinopathy

Michael Erdman MD PGY-3, Jorge A. Gonzalez MD, ABIM, CAQSM, DABRM, RMSK.

Larkin Community Hospital, Family Medicine, South Miami, FL.

Institute of Regenerative Orthopedics & Sports Medicine, Ft. Lauderdale, FL



## Abstract

Shoulder calcific tendinopathy is an inflammatory process of calcium being deposited within the rotator cuff tendons resulting in symptoms of impingement and limited range of motion of the affected joint.

Adults between ages of 30-50 are most affected and the incidence in women is twice as much as men. Risk factors include hormonal imbalances such as diabetes and thyroid disorders as well as inflammatory and autoimmune diseases such as rheumatoid arthritis.

Treatment options vary on a case-by-case basis and may range from noninvasive, minimally invasive, or arthroscopic surgery. The goal is to get the patient functioning with little to no pain as soon as possible.

In this case presentation a minimally invasive in-office procedure called Ultrasound Guided Barbotage with intra-tendinous LR-PRP was performed resulting in complete resolution of symptoms.

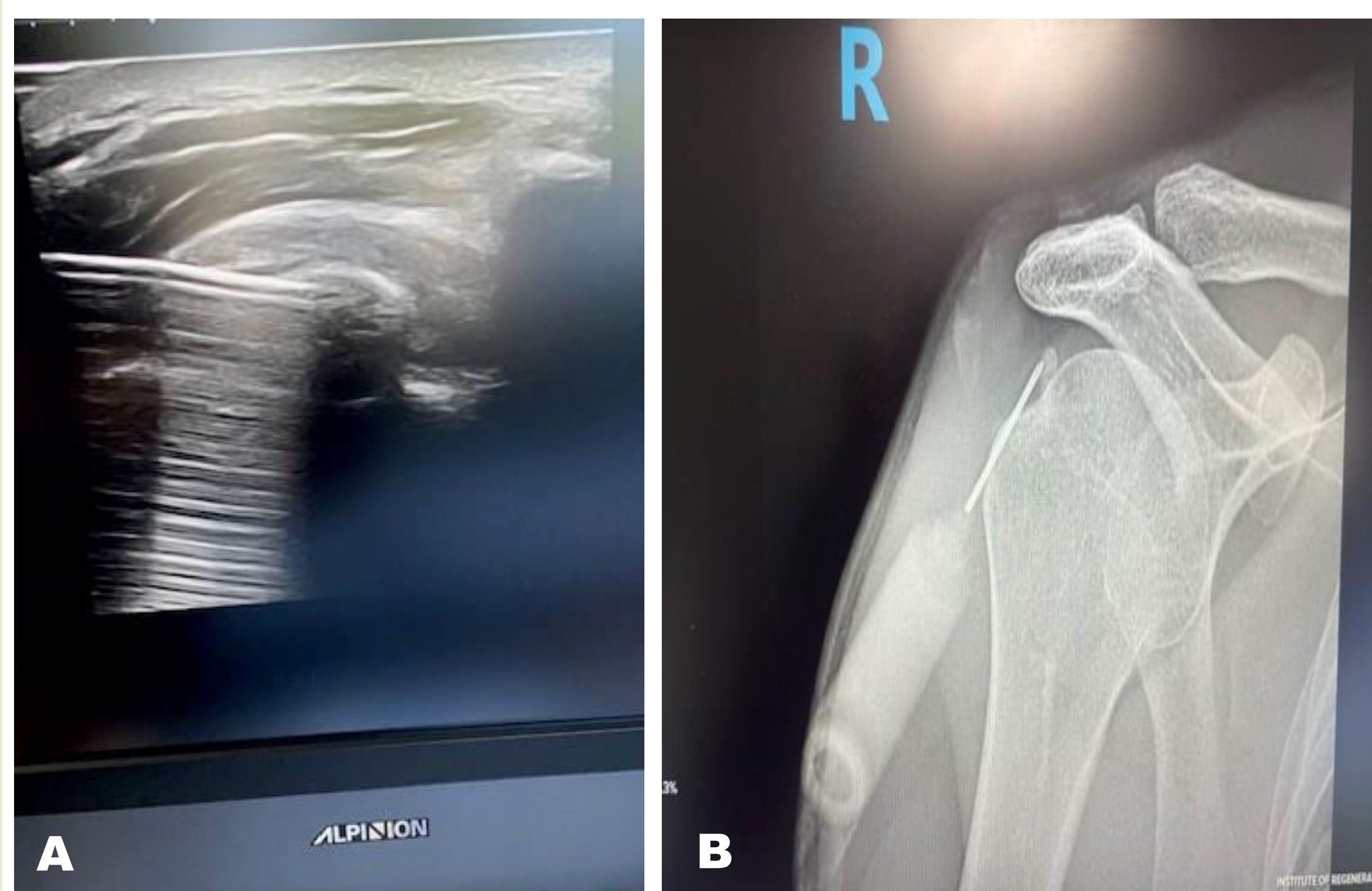
## Patient Presentation

Imaging Performed in office:

- **X-rays of Rt. Shoulder:** Three views showing calcification measuring approximately 1.5 cm in diameter within the supraspinatus tendon (see below).
- **US assessment of Rt. Shoulder:** Evidence of a heterotopic hyperechoic calcification of the supraspinatus tendon measuring 1.5 cm in diameter.

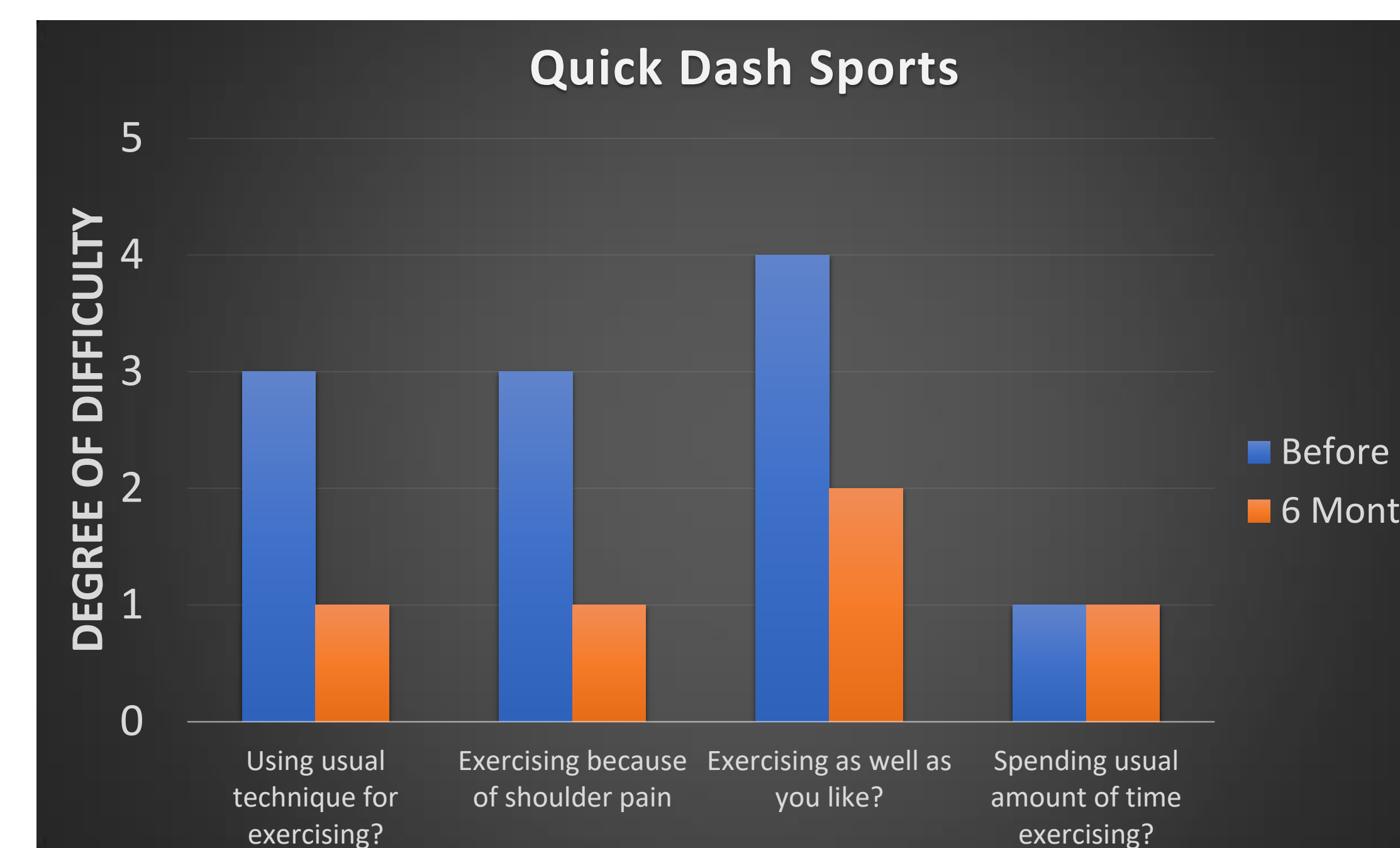


**Image 1.** An X-ray of the Rt. Shoulder upon initial office visit showing a large calcification measuring approximately 1.5 cm in diameter located within the supraspinatus tendon.

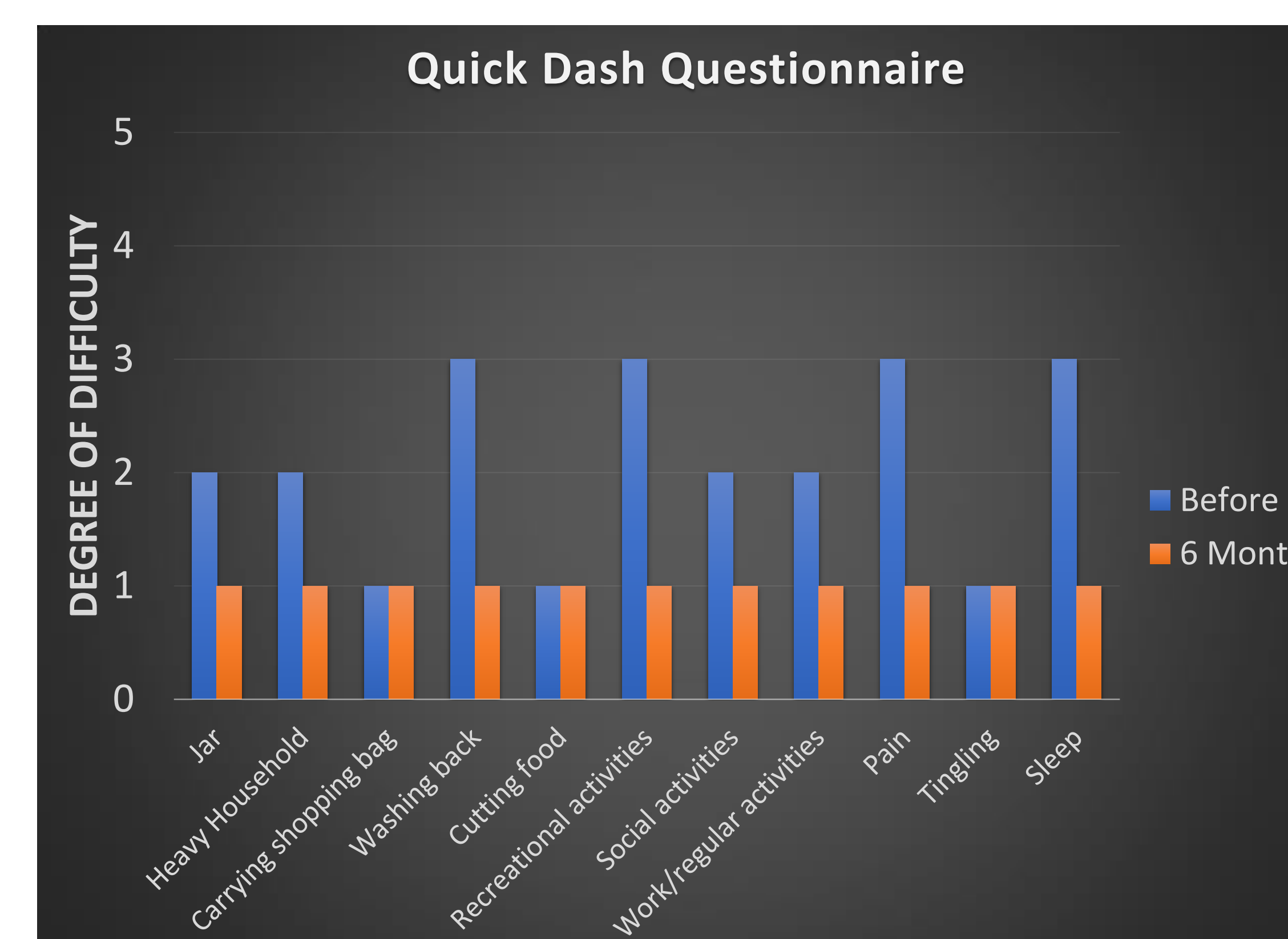


**Image 2.** A. Shows Ultrasound of the Rt. Shoulder during the USG-Barbotage procedure breaking away and removing the calcification. B. Fluoroscopic guidance documentation of barbotage procedure to ensure complete removal of calcification.

## Case Description



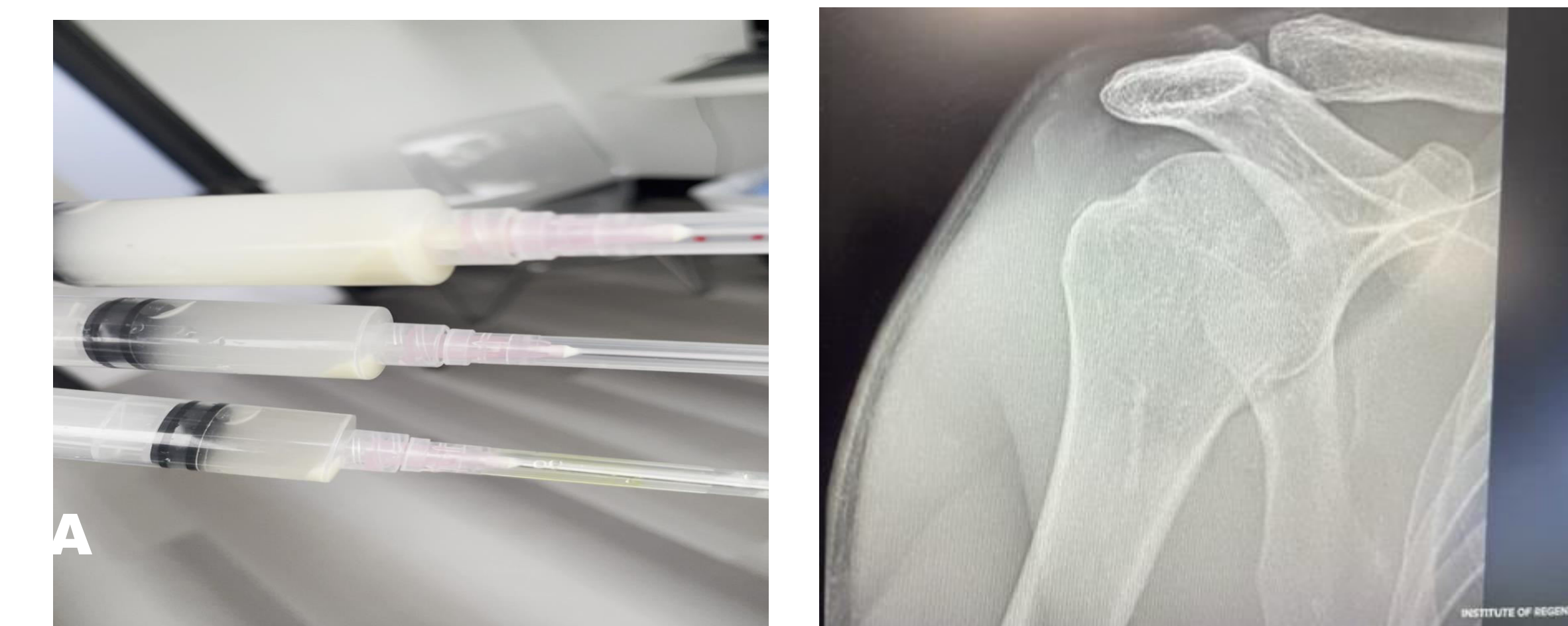
**Figure 1.** Did you have any difficulty...Before and after (6 month later) Quick Dash Sports/Exercise questionnaire results (1 being no difficulty & 5 being unable to perform). Patient shows significant improvement in exercise technique, amount of pain, and quality of exercise.



**Figure 3.** Quick Dash Questionnaire Shows before and after (6 months later) results of the 11 item Quick DASH questionnaire regarding patient's difficulty in regular daily activities. As you can see all 11 items improved dramatically including his pain and sleep issues after the calcific barbotage procedure and injection of LR- PRP.

## Method

- 10 cc of 1% lidocaine used for local anesthesia was injected around the calcification.
- Under direct USG using multiple 10cc syringes of normal saline with an 18G needle were used to penetrate the calcium deposit.
- Using direct negative pressure, the calcium deposit was aspirated.
- Upon complete calcification removal, an intra-tendinous autologous injection of LR-PRP was performed. Total of 7 cc of 8x above baseline product was used.



**Image 3.** A. 10 cc syringes filled with hydroxyapatite crystals B. X-ray after barbotage showing complete removal of 1.5 cm calcification.

## Patient Presentation

- Patient is a 62-year-old, retired male with PMHx of hypercholesterolemia and a right clavicular fracture in 2003, who presented to the office with a previously diagnosed right shoulder calcification.
- Patient described the pain as a “constant nuisance,” intermittent, 8/10 in severity, and worsening over the past year.
- At the time of initial presentation, he felt restricted with his exercise routines, having to eliminate overhead motions such as the bench press, shoulder press, and push-ups.
- Past treatments: NSAIDs, steroid injections and Physical Therapy with minimal improvement.
- Physical Exam of Right Shoulder:
  - Inspection: No atrophy, swelling, or erythema
  - Tender to Palpation: ACJ (-), Acromion (-), Coracoid (-), Biceps (-), PJI (-)
  - Range of Motion: abduction: 45° , FF: 90° , ER: 45° , IR: within normal range (to L5)
  - Strength: Deltoid 5/5, Supraspinatus 4/5, Infraspinatus 5/5, Subscapularis 5/5
  - Special Testing: Neer (+), Hawkins (+)

## Conclusion

- Patient was able to return to normal activities without pain or discomfort within 6 weeks after procedure.
- This is an alternative, in-office procedure, that should be considered in those patients with recalcitrant calcific tendonitis resulting in minimal to no side-effects and high success rate.

## References

1. DE Carli A, Pulcinelli F, Ross GD, Phtno D, Ferretti A. Calcific tendinitis of the shoulder. *Joints*. 2014 Aug 1;2(3):130-6. doi: 10.1133/jts/2014.2.3.130. PMID: 2506556; PMCID: PMC4295680. Only those references actually cited should be included in the reference list.
2. Quick Dash Questionnaire; Institute for Work & Health 2006
3. Kalayer CB, Kuzilkaya E. Calcific tendinitis: intramuscular and intraosseous migration. *Diagn Interv Radiol*. 2019 Nov;25(6):480-484. doi: 10.5152/dir.2019.18593. PMID: 31650966; PMCID: PMC6837299.
4. Carr JB. Editorial Commentary: Platelet-Rich Plasma Shows Promise for Improving Shoulder Tendinopathy. *Arthroscopy*. 2021 Sep;37(9):2754-2755. doi: 10.1016/j.arthro.2021.05.045. PMID: 34481617.
5. Chianca V, Albano D, Messina C, Midiri F, Mauri G, Aliprandi A, Catapano M, Pescatori LC, Monaco CG, Gitto S, Pisani Mainini A, Corazza A, Rapisarda S, Pozzi G, Barile A, Masciocchi C, Scornfienza LM. Rotator cuff calcific tendinopathy: from diagnosis to treatment. *Acta Biomed*. 2018 Jan 19;89(1-S):186-196. doi: 10.23750/abm.v89i1-S.7022. PMID: 29350647; PMCID: PMC6179075.

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