CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

EVIDENCE SUMMARY

Calcific Tendinitis

Calcific Tendinitis of the Rotator Cuff — Staged Management & Post-operative Rehabilitation (Arthroscopic Excision)

Topic scope: (A) the natural history and stepped non-operative management of rotator-cuff calcific tendinitis (rest/analgesia → barbotage ± subacromial steroid → ESWT), and (B) post-operative rehabilitation after **arthroscopic excision of the calcific deposit** (± subacromial decompression; the cuff-repair pathway defers to the rotator-cuff-repair protocol).

> *Defining principle of the surgical rehab here: arthroscopic excision removes the source of pain and does not, by itself, create a construct that needs months of protection — provided the rotator cuff is left intact. So (like a debridement/decompression, and unlike a cuff repair) the rehab is an early-movement pathway: short sling for comfort only, unrestricted use below shoulder height from day one, assisted elevation to prevent stiffness, strengthening from ~8 weeks. The single branch point is whether removing the deposit left a tendon defect that needed repair — if so, the recovery converts to the slower, protected rotator-cuff-repair pathway.*

A. NATURAL HISTORY & NON-OPERATIVE MANAGEMENT

NATURAL HISTORY (SELF-LIMITING IN MOST)

Rotator-cuff calcific tendinitis is **self-limiting in the majority**: after a variable quiescent period the deposit enters a **resorptive phase** (peripheral vascularisation + phagocytosis), and **spontaneous resorption occurs in roughly two-thirds of cases within 1–2 years** [Uhthoff & Loehr; Chianca 2018 review]. This underpins a non-operative-first approach and explains why post-operative residual calcium that "dissolves spontaneously" does not harm the outcome.

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STEPPED NON-OPERATIVE INTERVENTIONS

1. **Analgesia / activity modification / physiotherapy** — first line; many settle as the deposit resorbs. *Consensus.*
2. **Ultrasound-guided barbotage (needling + lavage), usually + subacromial corticosteroid** — the best-supported interventional option. A systematic review of **908 patients** and subsequent meta-analyses favour barbotage for medium-term pain/function; **barbotage + subacromial steroid improves Constant–Murley score and reduces deposit size vs steroid alone**. Notably, **clinical improvement is NOT dependent on how much calcium is aspirated** — perforating the deposit to trigger resorption is the active mechanism. *Moderate–strong (SR/RCT).*
3. **Extracorporeal shock-wave therapy (ESWT)** — reduces deposit size and pain; broadly comparable to barbotage in several comparisons. *Moderate (RCT).*

B. POST-OPERATIVE REHABILITATION (arthroscopic excision ± subacromial decompression)

Surgery is reserved for deposits **recalcitrant to adequate non-operative care**. The operation locates and removes the deposit from within the cuff tendon, often with a **subacromial decompression** for room. Key surgical-outcome facts that shape the rehab:

- **Preserving cuff integrity while removing as much deposit as possible gives good-to-excellent results in ~90%** and avoids iatrogenic tendon defects [arthroscopic excision series].
- **Complete vs near-complete removal gives equivalent outcomes** — residual calcium resorbs spontaneously afterwards; the surgeon need not chase every fleck at the cost of the tendon.
- **Arthroscopic decompression WITHOUT cuff repair** is a validated strategy with good outcomes where the residual defect is not repaired [Bone & Joint 2023].
- **Symptom settling is gradual** — significant pain relief and ROM gains are the norm, but the pre-operative symptoms can take **up to ~9 months** to fade fully; recovery to unrestricted activity after excision alone is **~3 months**.

PHASED POST-OP TIMELINE (NO CUFF REPAIR)

Phase	Window	Sling	ROM / use	Strengthening	Notes
I — Early movement	**Week 0–2**	Comfort only, **days (rarely > 2 wk)**, off ASAP	Unrestricted use **below** shoulder height from day 1; assisted elevation **above** shoulder height several ×	—	Settle post-op flare; calcific patients are **stiffness-prone** → motion is the priority. ≤ ~2 kg,

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Phase	Window	Sling	ROM / use	Strengthening	Notes
			daily to prevent stiffness		no driving while in sling
II – Regaining range	**Week 2–8**	Off	Progress active elevation; restore full passive + active ROM	Begin gentle as pain allows	Most regain comfortable range through this window
III – Strengthening / return	**Week 8–16**	Off	Full active elevation goal by ~12 wk	**Cuff + scapular strengthening from ~8 wk**, isometric → band/light weight; advance work/sport loading wk 12–16	Full unrestricted activity ~3 months; discharge ~8–16 wk

Branch point – if a rotator cuff repair was required: recovery converts to the protected **rotator-cuff-repair** pathway (sling ~6 wk, ROM restrictions, strengthening deferred), typically **~5 months** total. The surgeon confirms post-operatively which pathway applies.

C. KEY CONTROVERSIES / EVIDENCE QUALITY

1. **Surgery is a last resort** – given high spontaneous-resorption rates and effective barbotage/ESWT, excision is reserved for genuinely recalcitrant cases. *Strong rationale.*
2. **How much to remove / whether to repair the defect.** Equivalent outcomes for complete vs partial removal, and viable decompression-without-repair, mean the surgeon balances deposit clearance against tendon integrity intra-operatively – which in turn decides the rehab pathway. *Moderate.*
3. **The post-op rehab protocol itself is consensus/expert**, drawn from surgeon patient-guidance protocols rather than a rehab RCT – phase timings are typical, not trial-derived.

D. EVIDENCE STRENGTH FLAGS (summary)

- **MODERATE–STRONG (SR / RCT):** barbotage ± steroid for non-operative calcific tendinitis (908-patient SR; barbotage + steroid > steroid alone); ESWT efficacy.
- **MODERATE (cohorts):** arthroscopic excision outcomes (~90% good-excellent; equivalence of complete vs partial removal; decompression without repair, Bone & Joint 2023); spontaneous resorption ~2/3 within 1–2 years.
- **WEAK / CONSENSUS:** the post-operative **rehabilitation protocol** (surgeon patient-guidance documents; no defining rehab RCT).

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CITATIONS

RAG CORPUS (180,000+ ORTHOPAEDIC ARTICLES) — ADJACENT ROTATOR-CUFF EVIDENCE

- Predictors of failure of non-operative treatment of chronic symptomatic rotator-cuff disease (2013 Neer Award). *J Shoulder Elbow Surg*. 2016. DOI: 10.1016/j.jse.2016.04.030
- Arthroscopic rotator cuff repair: scientific rationale, surgical technique, early clinical results. *J Shoulder Elbow Surg*. 2010. DOI: 10.1016/j.jse.2009.12.012
- Early versus delayed rehabilitation after arthroscopic rotator cuff repair. *Knee Surg Sports Traumatol Arthrosc*. 2024. DOI: 10.1002/ksa.12129
- Speed of recovery after arthroscopic rotator cuff repair. *J Shoulder Elbow Surg*. 2017. DOI: 10.1016/j.jse.2016.11.002
- (The corpus is thin on calcific-tendinitis-specific rehab; the evidence base below is the calcific literature + published surgeon protocols.)

CALCIFIC TENDINITIS LITERATURE (URLS)

- Ultrasound-guided barbotage for calcific tendonitis of the shoulder: a systematic review including **908 patients** (DARE). https://www.ncbi.nlm.nih.gov/books/NBK241935/
- Determining the efficacy of barbotage for pain relief in calcific tendinitis. *JSES Int / ScienceDirect*. 2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC11401591/
- Needling and lavage in rotator-cuff calcific tendinitis: ultrasound-guided technique. PMC. 2024. https://pmc.ncbi.nlm.nih.gov/articles/PMC10805427/
- Calcific tendinitis of the rotator cuff: a review (natural history, phases, resorption). PMC. https://pmc.ncbi.nlm.nih.gov/articles/PMC3749672/
- Recovery pattern after arthroscopic treatment for calcific tendinitis of the shoulder. *Orthop Traumatol Surg Res*. 2020. https://www.sciencedirect.com/science/article/pii/S1877056820301043
- Arthroscopic decompression of calcific tendinitis without cuff repair. *Bone Joint J*. 2023. https://boneandjoint.org.uk/Article/10.1302/0301-620X.105B6.BJJ-2022-1137.R1
- Arthroscopic treatment of calcific tendonitis (preserve cuff, ~90% good-excellent; residuals resorb). PMC. https://pmc.ncbi.nlm.nih.gov/articles/PMC4044535/

PUBLISHED REHAB PROTOCOLS (PATIENT-GUIDANCE — BASIS FOR THE PHASE STRUCTURE)

- The London Shoulder Partnership — Calcific Deposit Excision Rehabilitation. http://thelondonshoulderpartnership.co.uk/shoulder/shoulder-rehabilitation/calcific-deposit-excision-rehabilitation/
- Ko K. Arthroscopic Excision of Calcific Tendonitis – What Can I Expect? (OPA Orthopedics). https://www.kevinkomd.com/pdf/calcific-tendonitis.pdf

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• Funk L. Surgery for Calcific Tendinitis. ShoulderDoc. https://shoulderdoc.co.uk/pages/surgery-for-calcific-tendinitis

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