



Dr Travis Falconer

Shoulder and Elbow Surgeon

2024 South32 Rottnest Channel Swim



Out of Africa







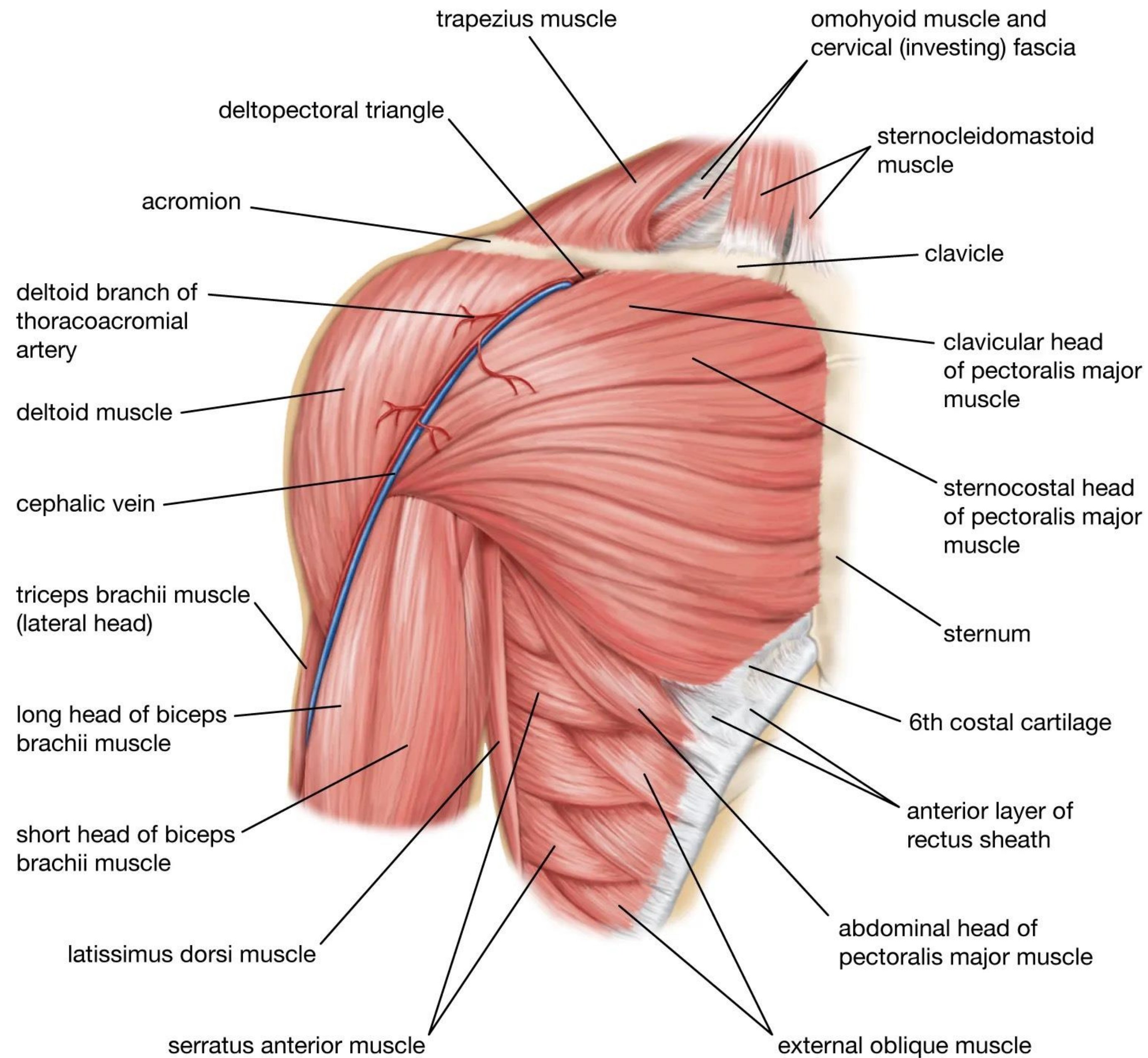


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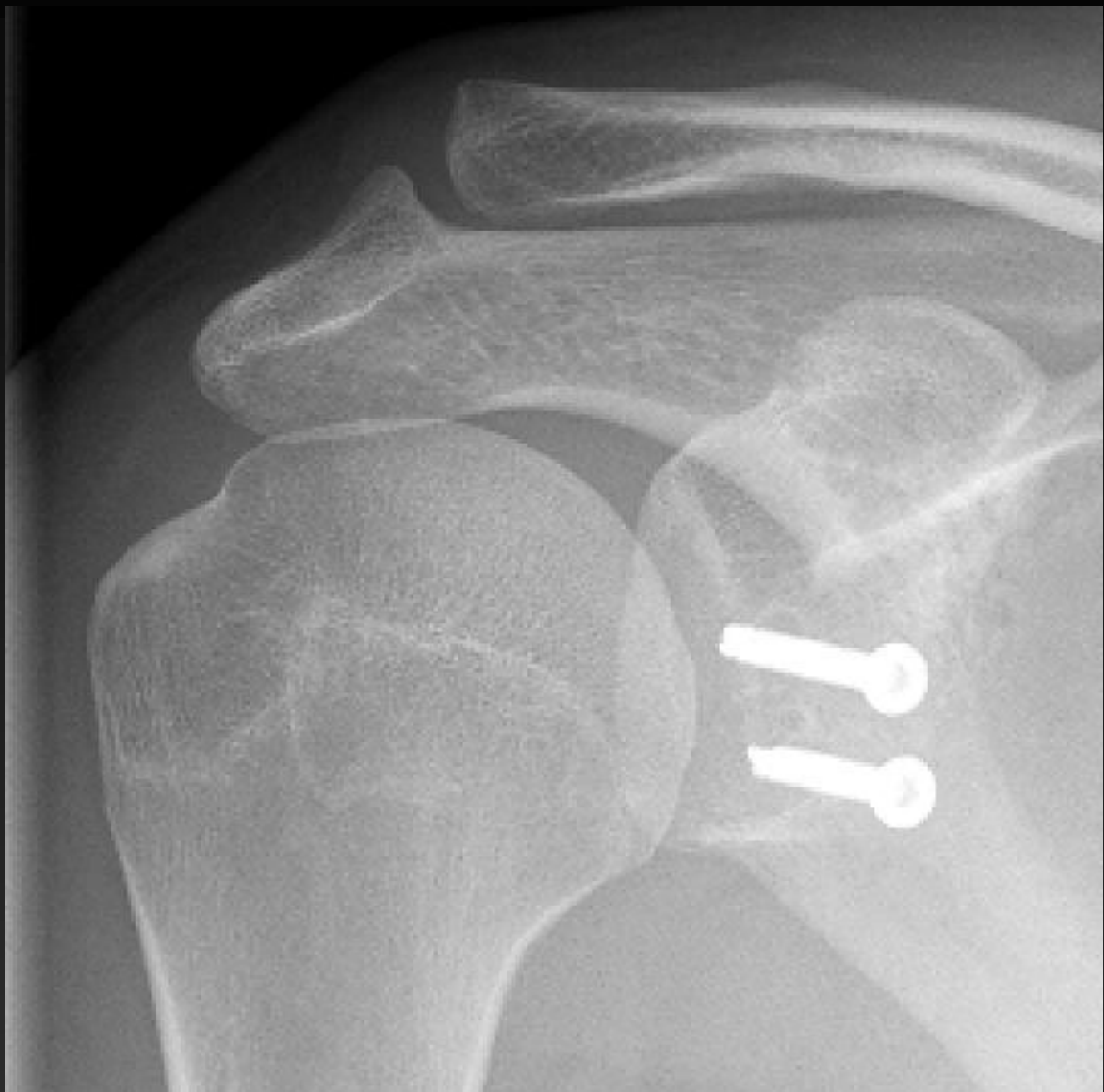
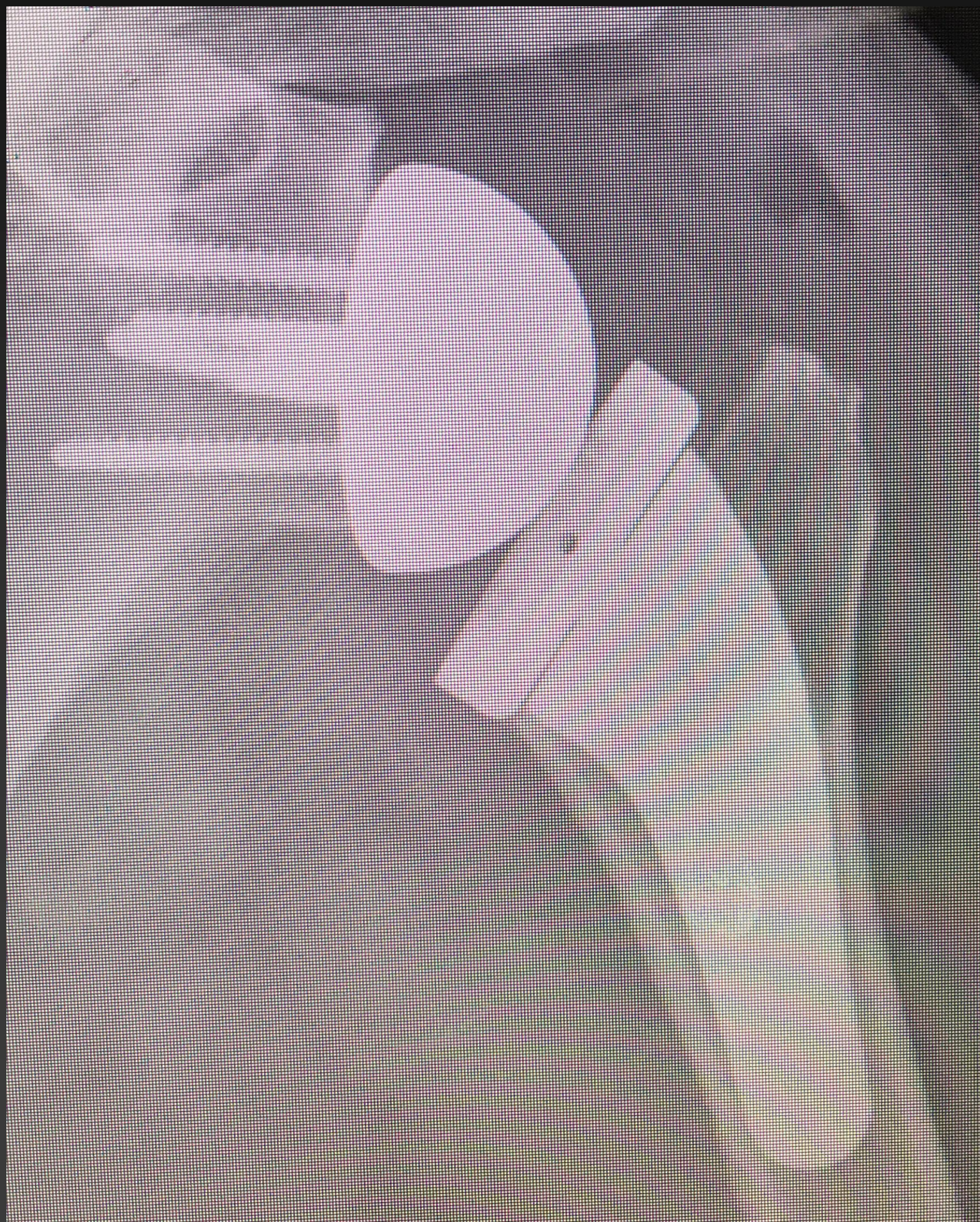
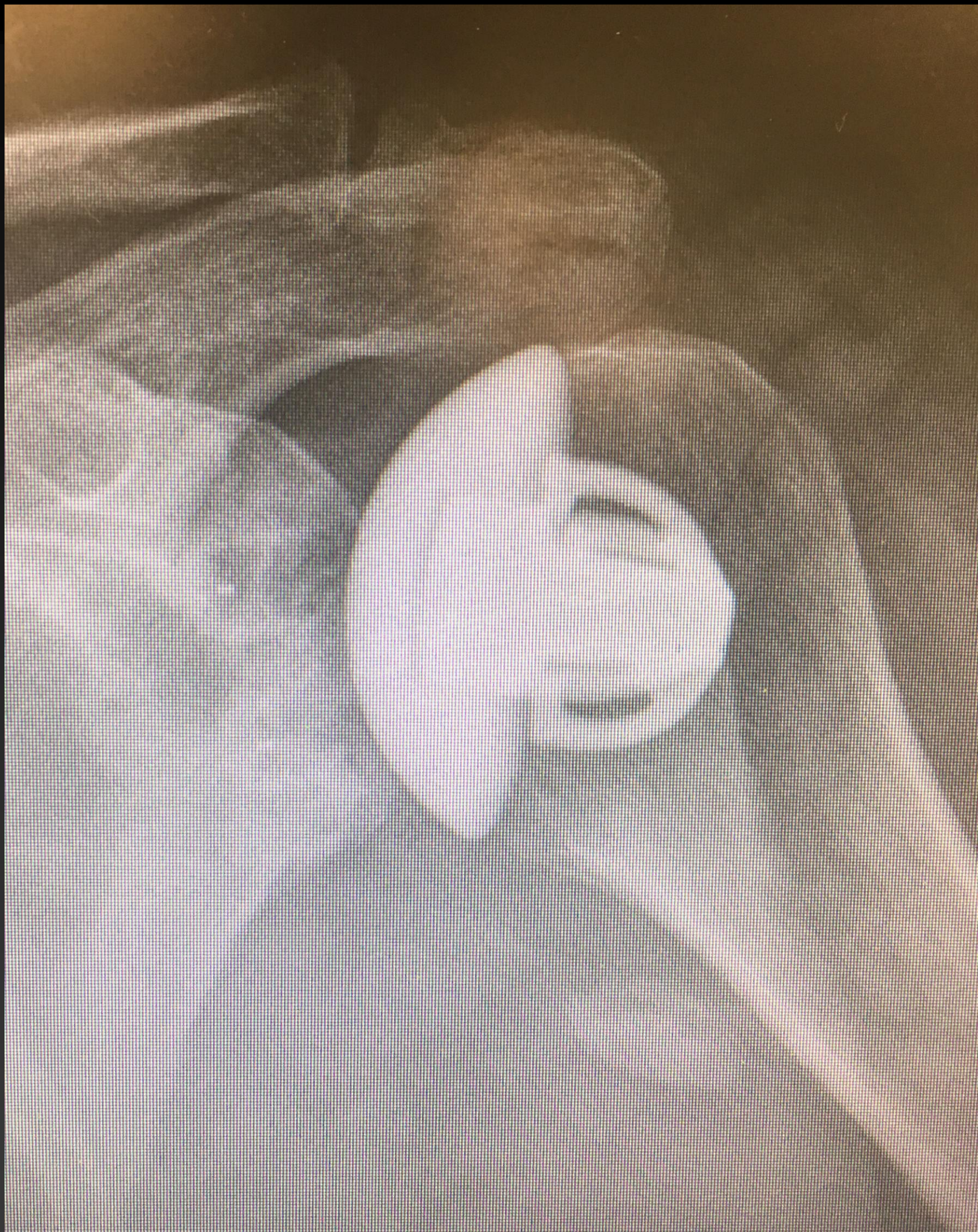
- Post operative pain control
- Biological patches
- ACJ injuries
- Shoulder replacement infections
- Bicep tendon ruptures



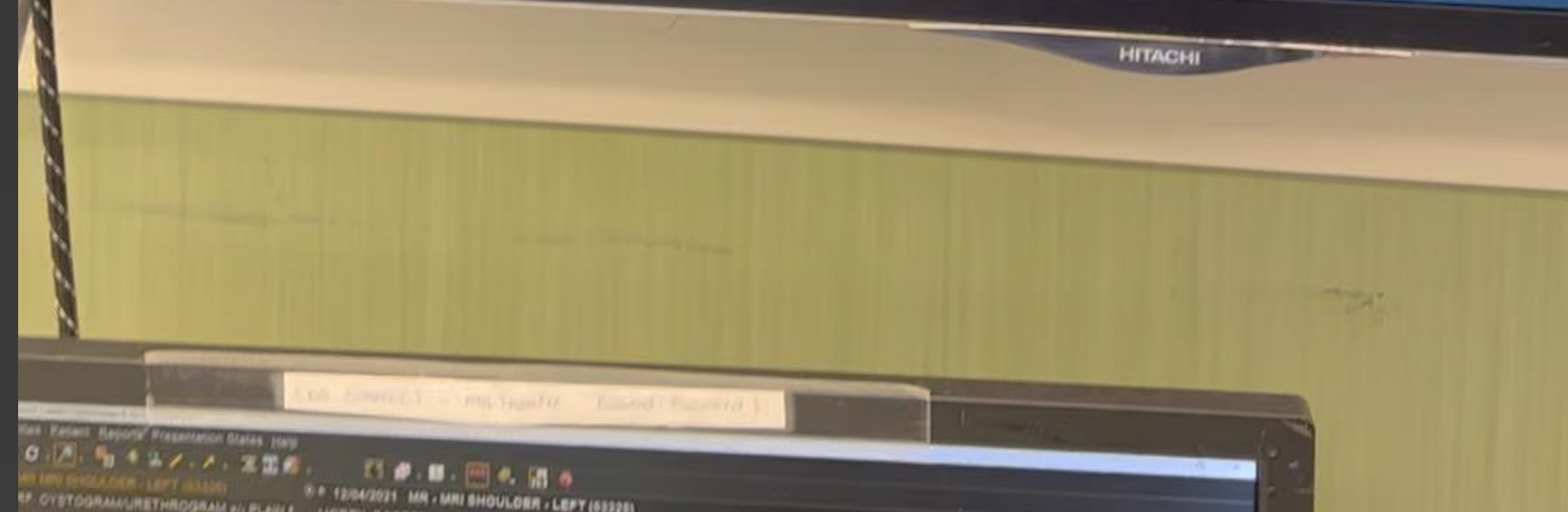
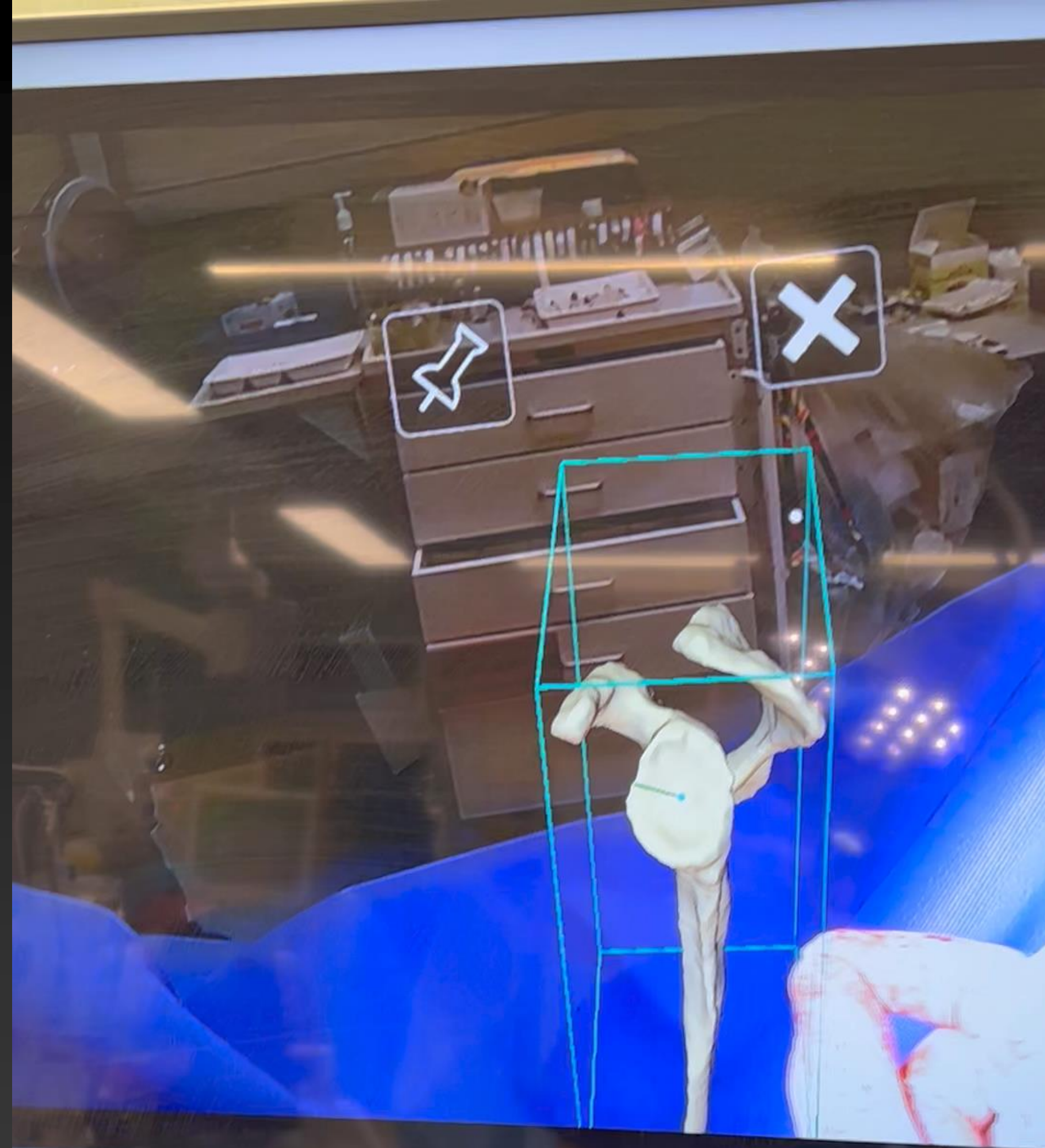




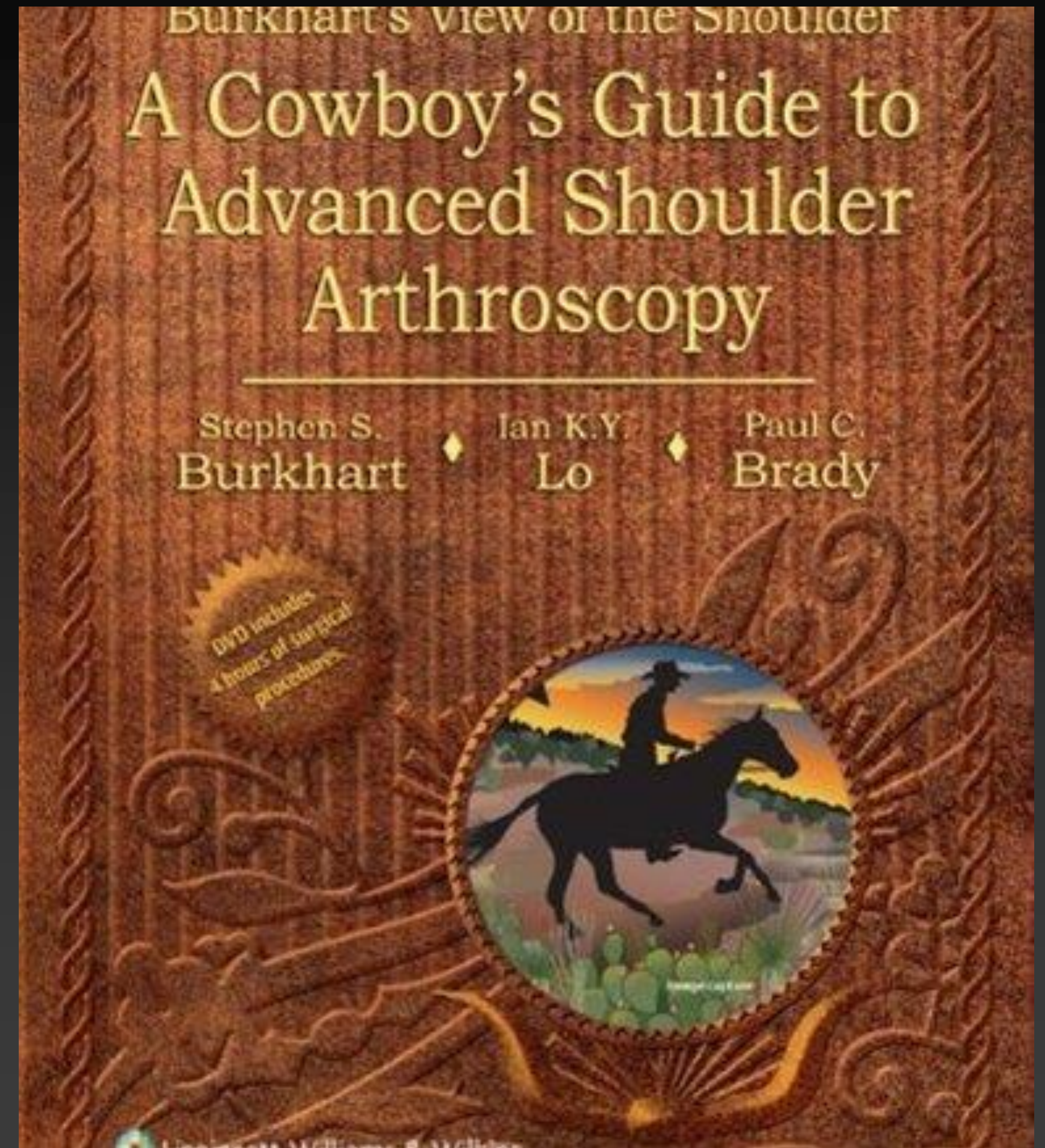
- Bursitis
- Rotator cuff tears
- Biceps problems
- Labral injuries
- Dislocations
- Frozen Shoulder
- ACJ injuries
- Arthritis
- Humeral fractures
- Pec major ruptures
- Impingement syndrome
- Calcific tendinitis
- Clavicle fractures







“The Cowboy Way”





Histological evaluation of repair of the rotator cuff in a primate model

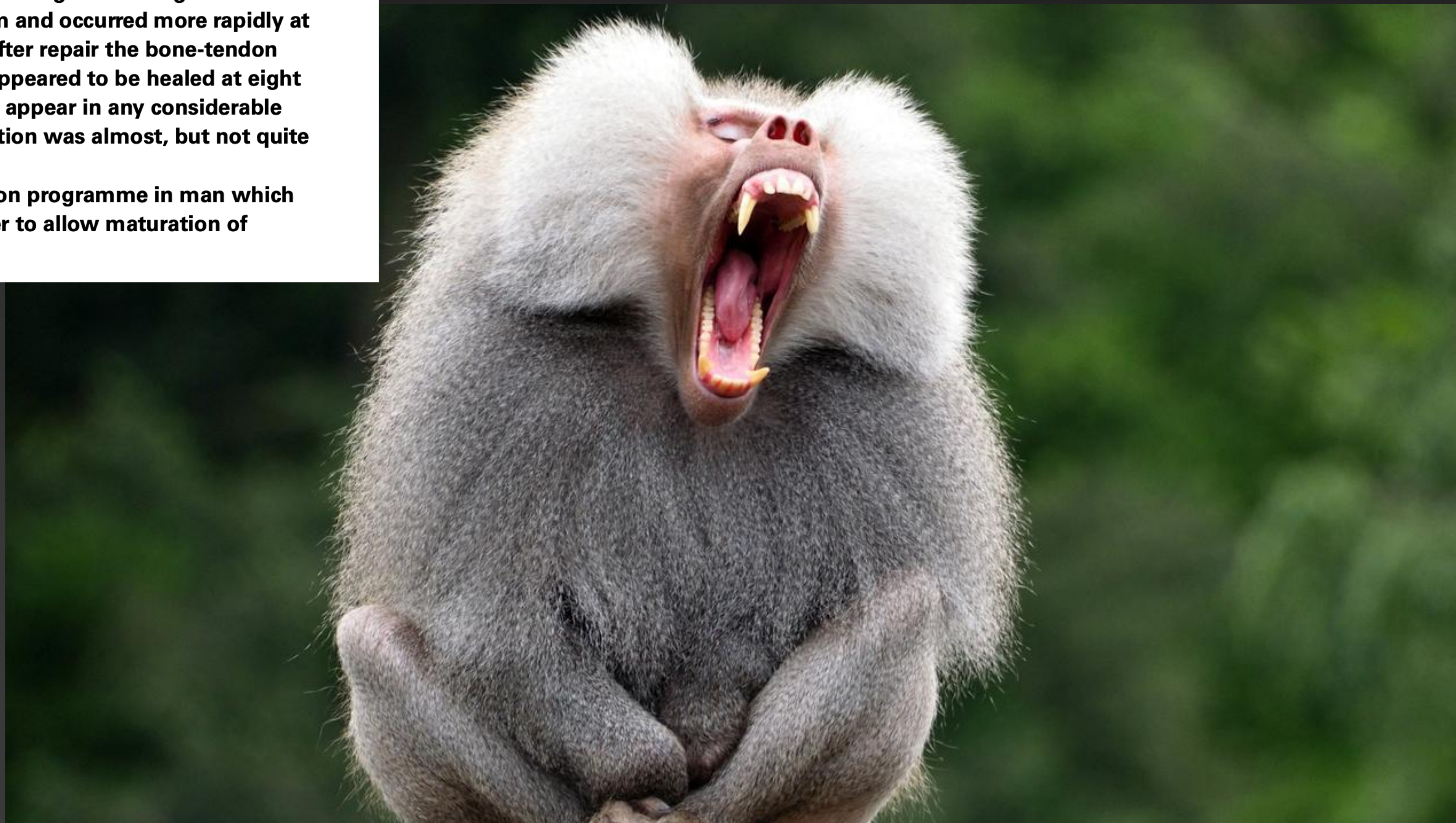
D. H. Sonnabend,
C. R. Howlett,
A. A. Young

*From the Royal
North Shore
Hospital, Sydney,
Australia*

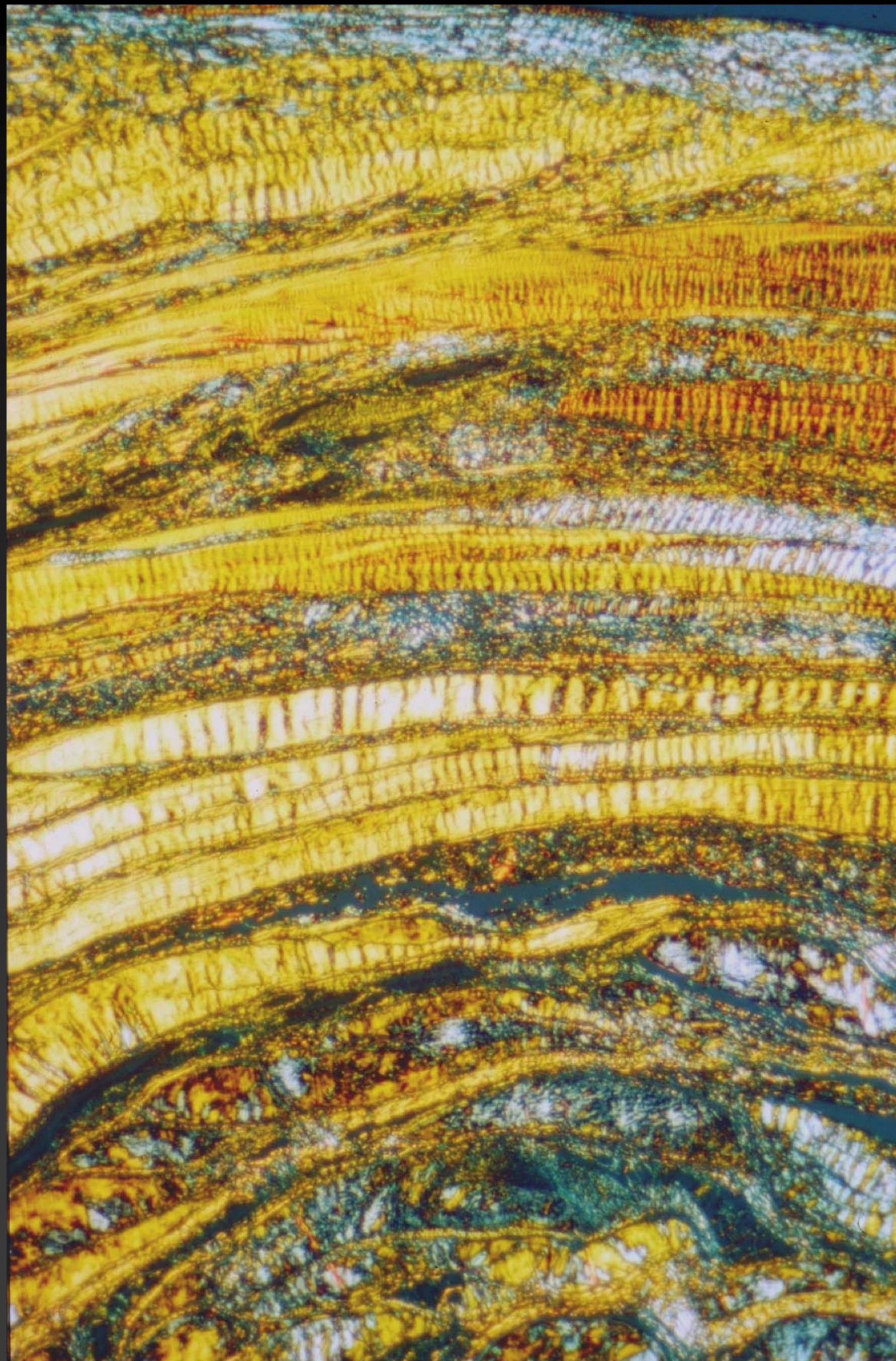
The establishment of a suitable animal model of repair of the rotator cuff is difficult since the presence of a true rotator cuff anatomically appears to be restricted almost exclusively to advanced primates. Our observational study describes the healing process after repair of the cuff in a primate model. Lesions were prepared and repaired in eight 'middle-aged' baboons. Two each were killed at four, eight, 12 and 15 weeks post-operatively. The bone-tendon repair zones were assessed macroscopically and histologically.

Healing of the baboon supraspinatus involved a sequence of stages resulting in the re-establishment of the bone-tendon junction. It was not uniform and occurred more rapidly at the sites of suture fixation than between them. Four weeks after repair the bone-tendon healing was immature. Whereas macroscopically the repair appeared to be healed at eight weeks, the Sharpey fibres holding the repair together did not appear in any considerable number before 12 weeks. By 15 weeks, the bone-tendon junction was almost, but not quite mature.

Our results support the use of a post-operative rehabilitation programme in man which protects the surgical repair for at least 12 to 15 weeks in order to allow maturation of tendon-to-bone healing.







SUPRASPINATUS TEARS IN BABOONS

- 8 females
- Euthanised at 4, 8, 12 & 15 weeks post RCR
- Macroscopic & histological examination



Interesting points...

Baboons not immobilised

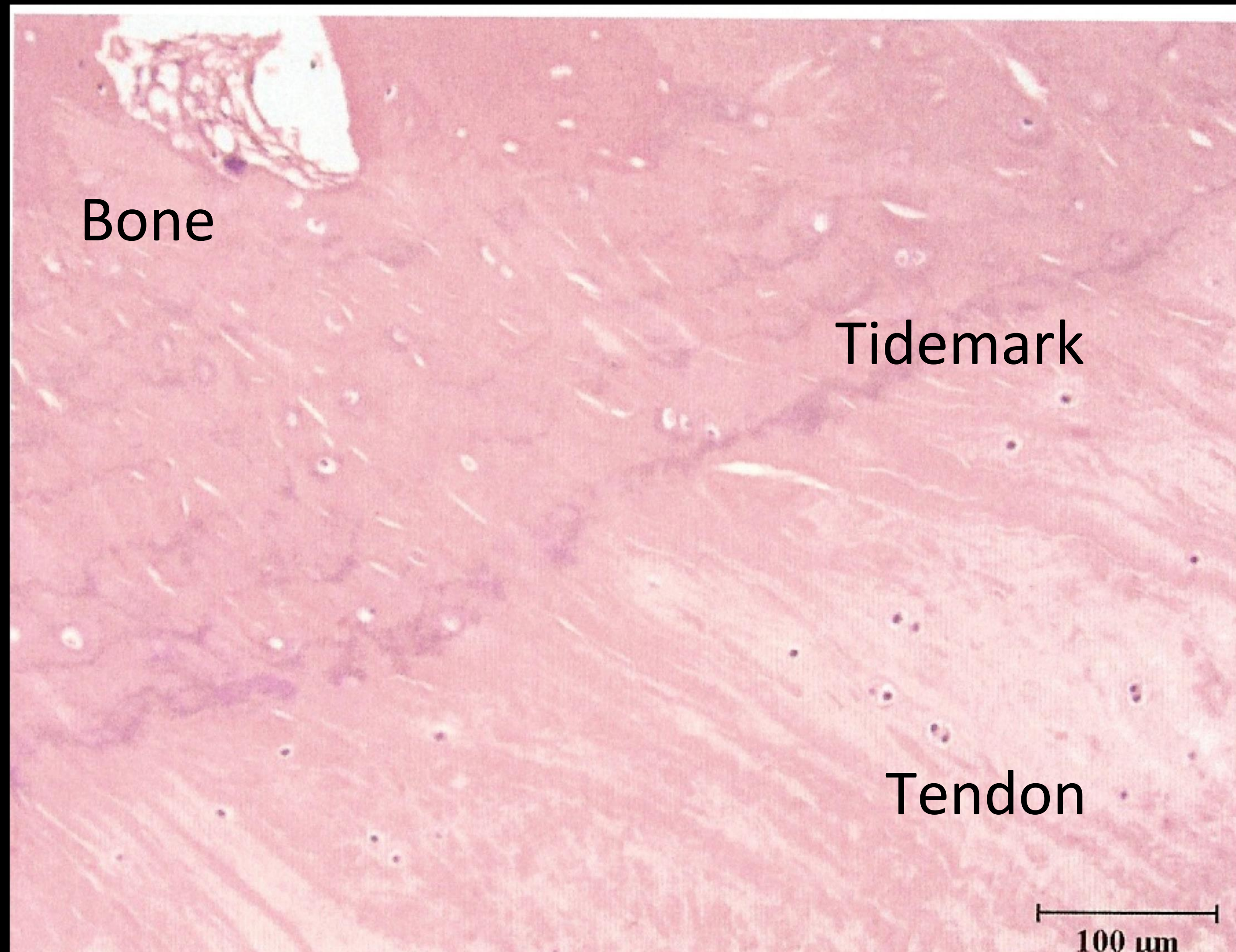
HOWEVER didn't move the arm for ~5 days

AVOIDED climbing for 3 weeks

Function *NO* different to
contralateral side by 8 weeks

*7/8 cuff repairs healed**

Does the histology give us the key to timing???



BTJ at 4 weeks

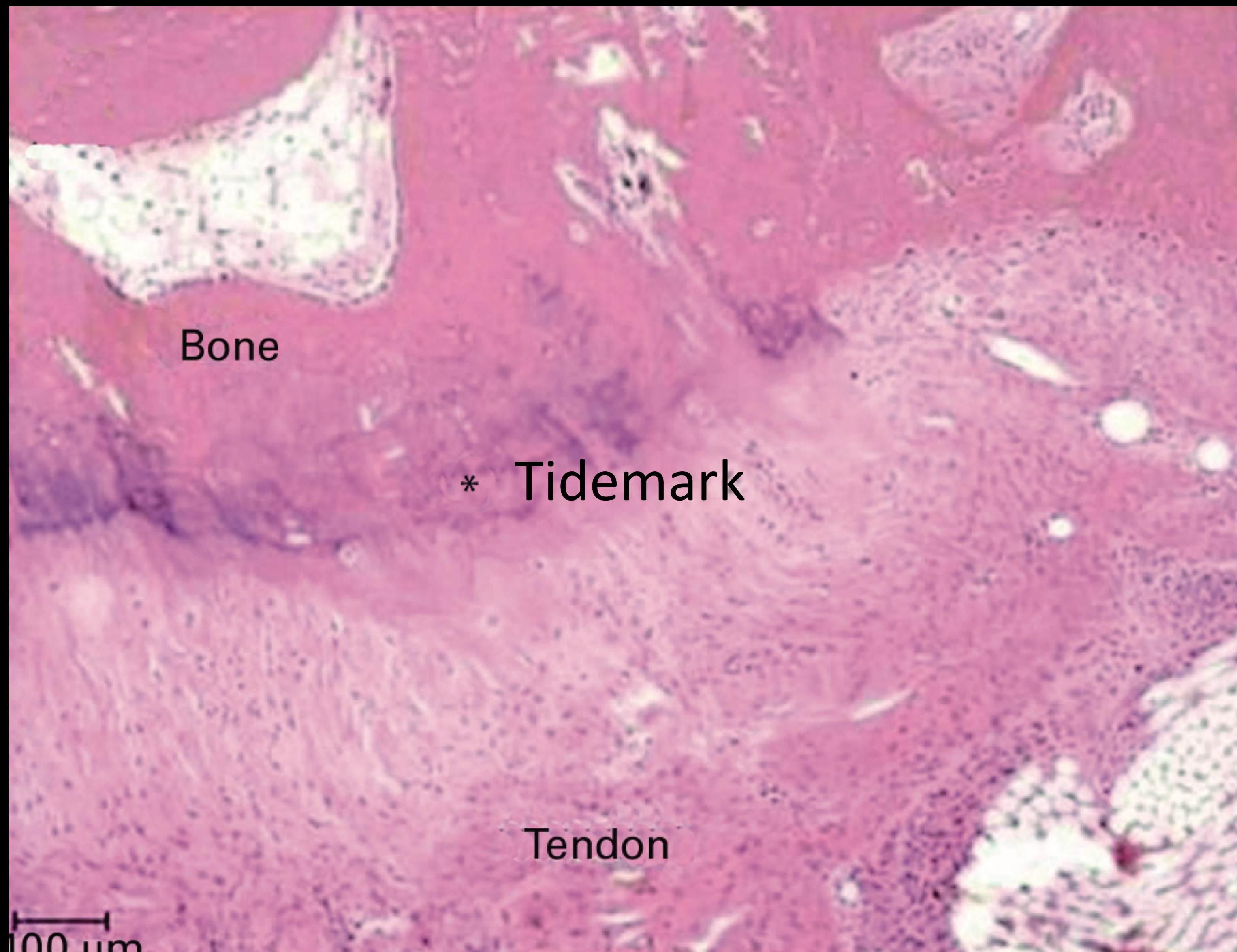




Early Sharpey's Fibres

100 μm

BTJ 8 weeks



BTJ 12 weeks

Rotator Cuff Pathology

A continuum...

- From impingement...
- To full thickness tears...



Rotator Cuff Pathology

A continuum...

95% of tears are chronic
“tendinopathic tendon”



Asymptomatic cuff tears

50% @ 50

80% @ 80

Natural Hx

No healing

40% show progression

5% arthropathy

Aetiology

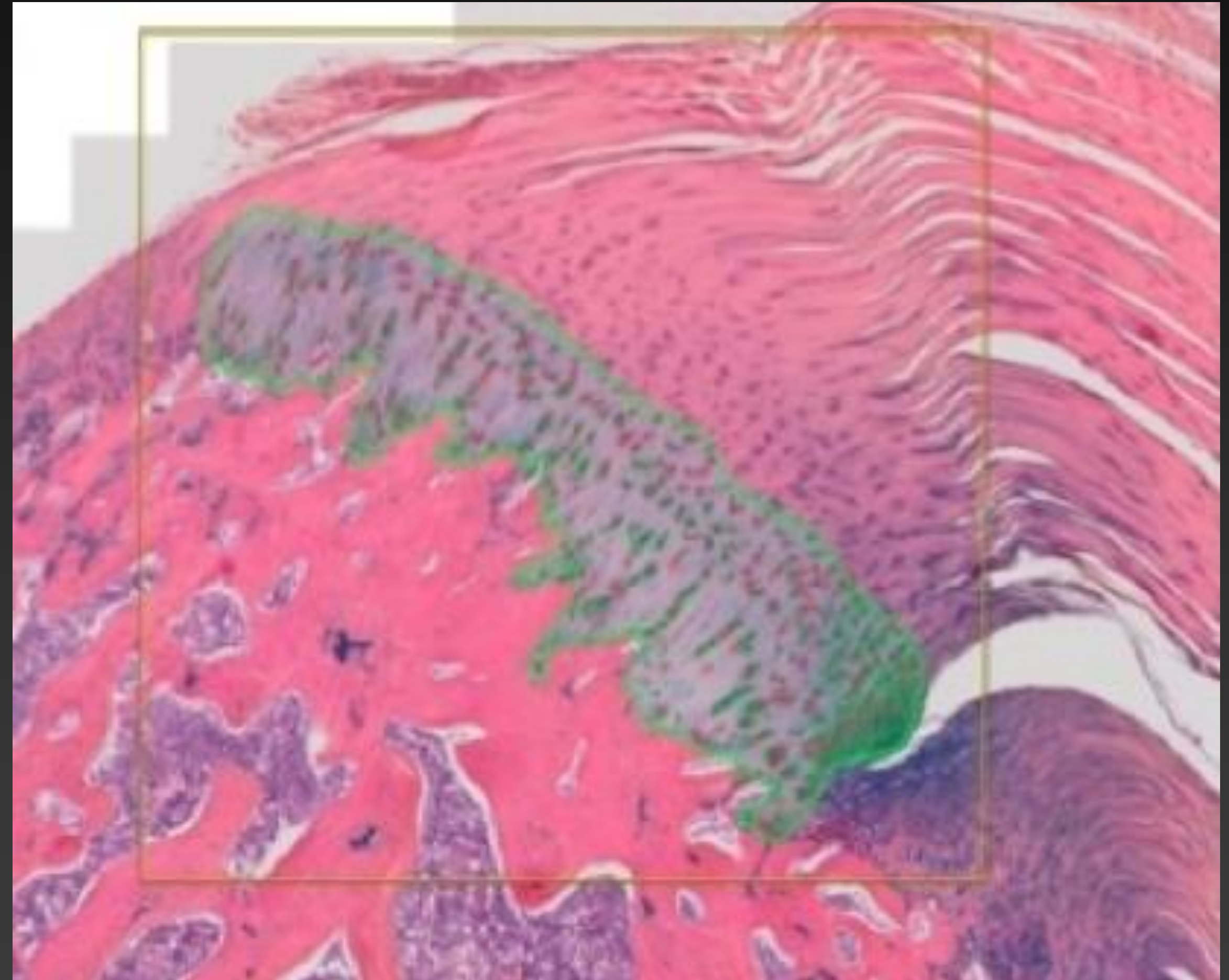
Intrinsic - age related change

Extrinsic - internal impingement

Rotator Cuff Pathology

A continuum...

- Contributing factors...
 - ?Good tendon
 - ?Good blood flow
 - Age
 - Smoking
 - Diabetes
 - PVD



Rotator Cuff Pathology

Confusion..

Size

Small >1cm
Medium 1-3cm
Large 3-5cm
Massive >5cm

Extent

Partial thickness
Articular, Bursal, Intra-substance
Full thickness

Number of tendons
SSP, ISP, SSC, All

Shape of tear
Crescent
U-shaped
L-shaped

Retraction & atrophy
Degree of retraction
Fatty Atrophy



Rotator Cuff Pathology

A continuum...

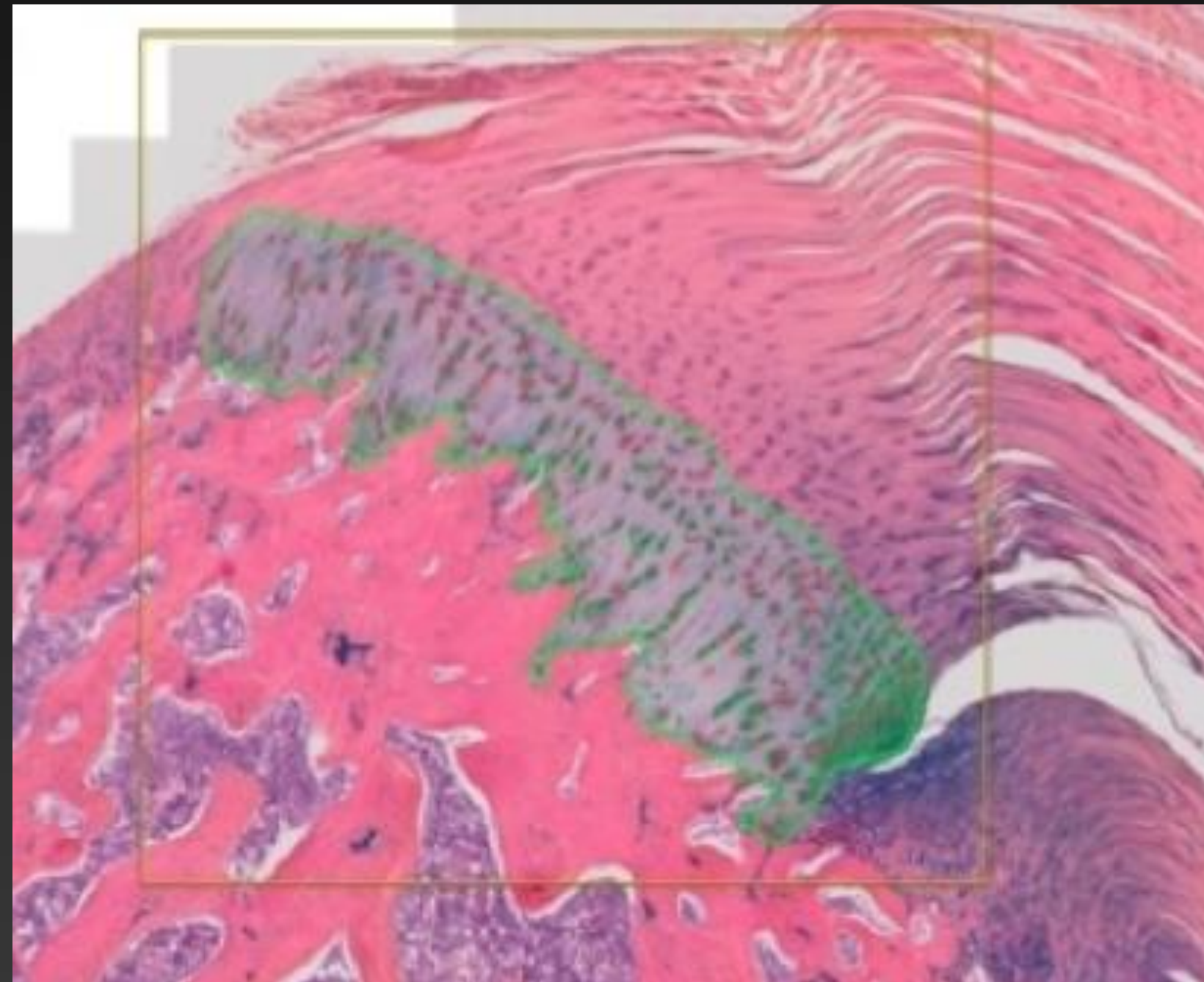


contributing
factors



the (whole) story of health

H:F



PAIN

DYSFUNCTION

ADL's

Rotator Cuff Pathology Treatment

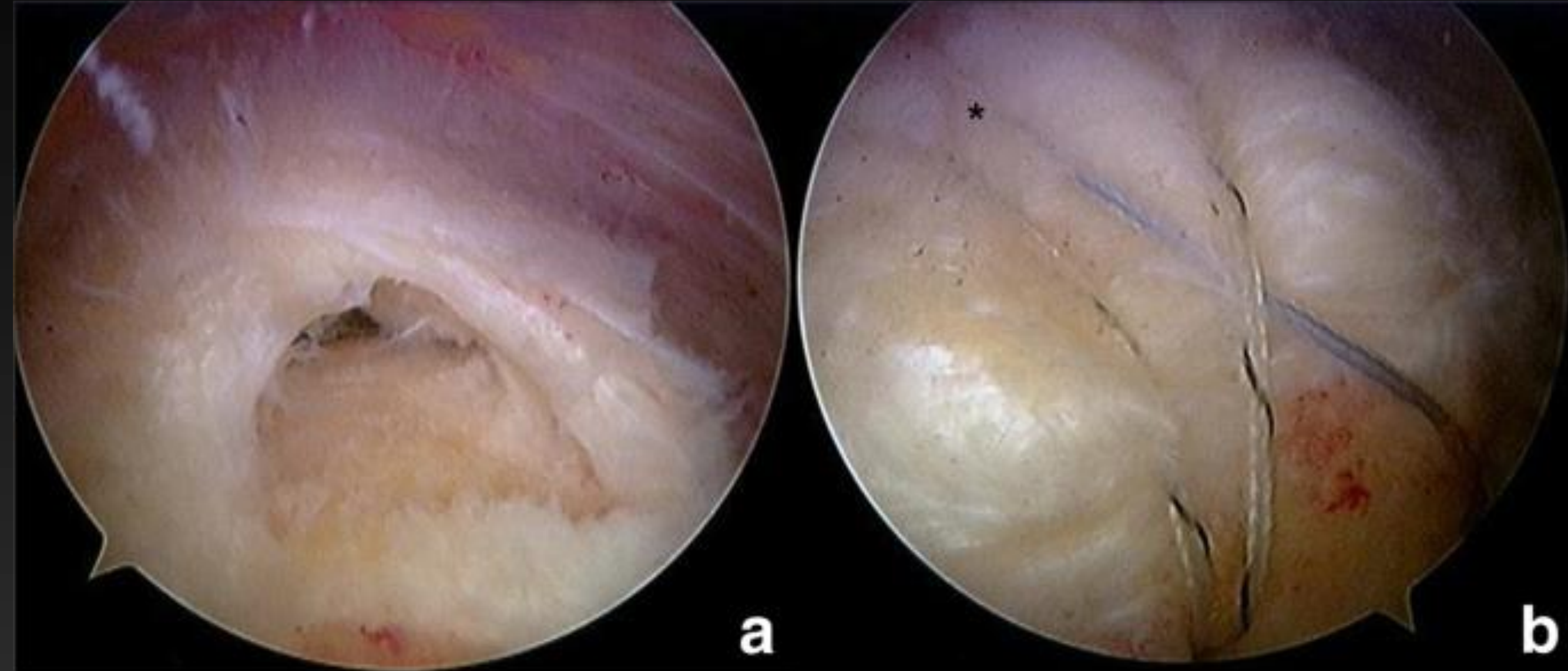
- *Non Operative*
 - Activity mods
 - Simple analgesia /NSAID's
 - Cortisone
 - Physiotherapy



Rotator Cuff Pathology

Treatment

- Operative Management
 - Acromioplasty
 - Rotator cuff repair
 - Newer modalities
 - Biological patches?



Rotator Cuff Pathology

What I tell my patients...

- “You won’t like me for 3 months...”
 - Sling 6 weeks
 - Rehab 3-6 months
 - Improvement for year



Rotator Cuff Pathology Research

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- *Minimising post operative pain*
 - Take home inter scalene catheters
- *Treatment of partial cuff tears*
 - Use of biological patches





- *Solo or duo swimmers*
- *1 or 2 previous crossings*
- *Build up of training*
- *No previous surgery*
- *Strength testing*
- *MRI changes in rotator cuff*
- *Swim diaries*



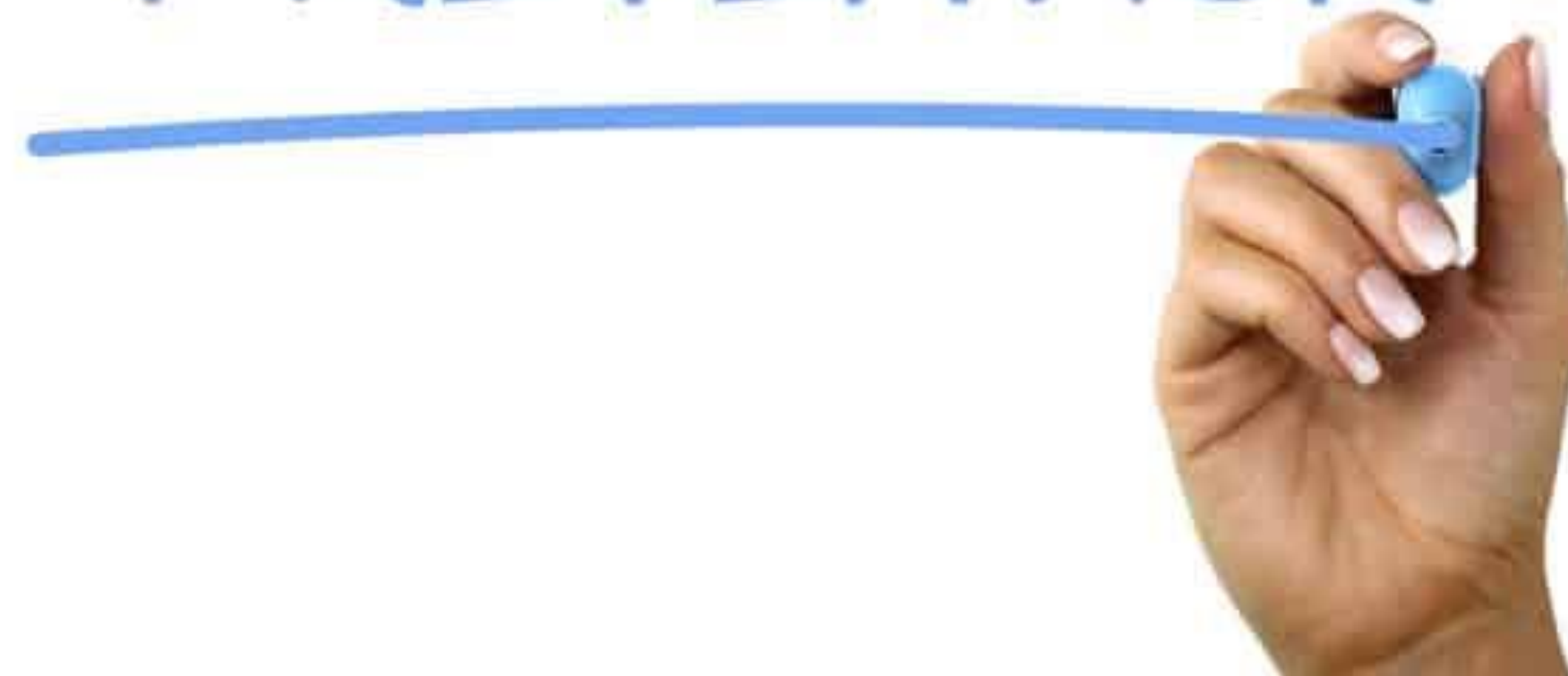


- *Changes in muscle - ??? Increase in size / DOMS*
 - *Increased bursitis ???*
 - *Changes to the tendons*
 - *??? Healed rotator cuff tears*
 - *??? Worsening rotator cuff tears*
- *Suggest programs for swimmers / non-swimmers*



My Final Thoughts

INJURY
PREVENTION





Goodluck

Thank you for listening

2024 South32 Rottnest Channel Swim





Any Questions?