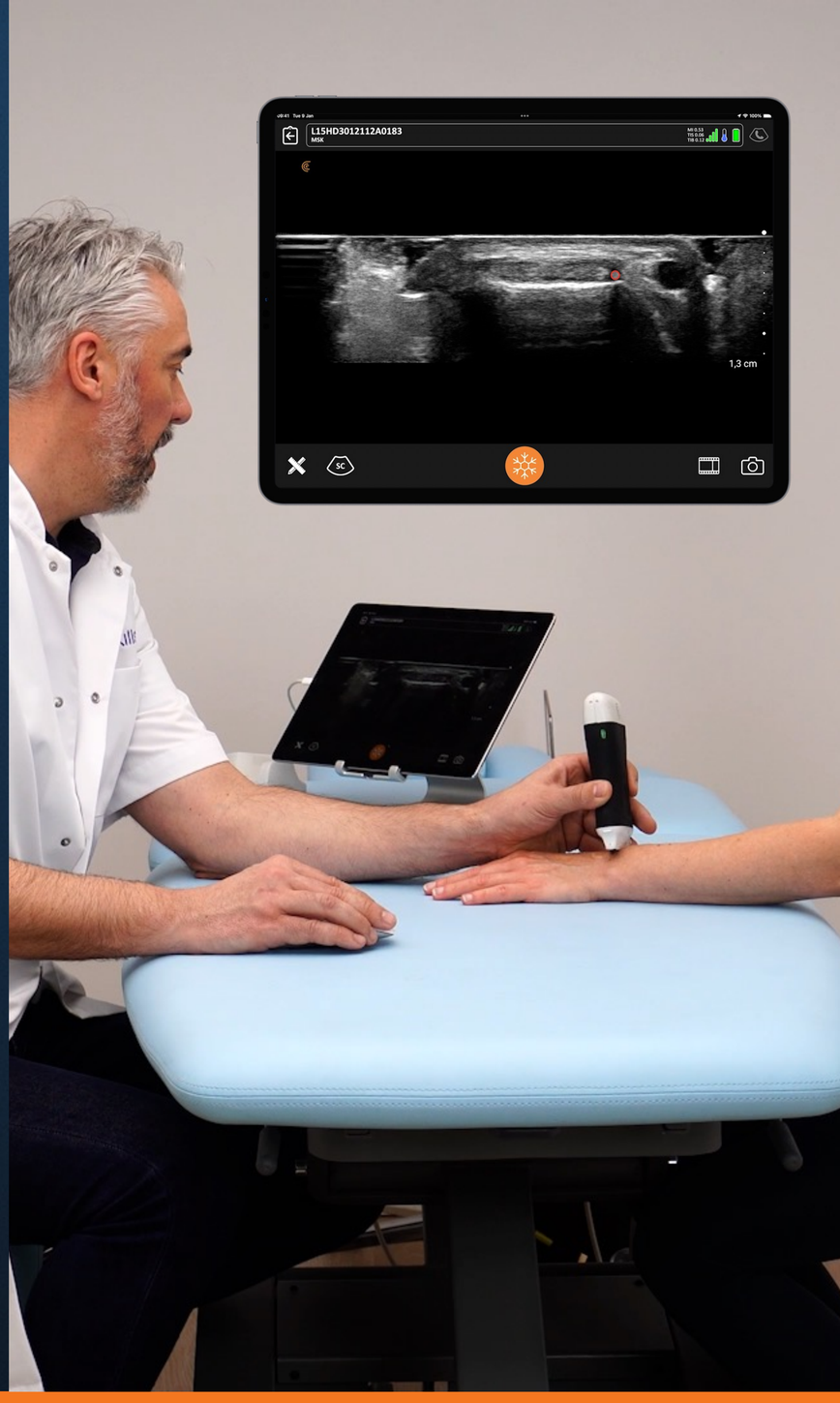
clarius Ultrasound Anywhere

WEBINAR

POCUS for MSK: Mastering Hand and Wrist Ultrasound

May 2025



Your Host

Shelley Guenther, CRGS, CRCS

Sonographer | Clinical Marketing Manager

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MSK ultrasound imaging-assisted clinical examination

> “The integration of musculoskeletal ultrasound imaging into traditional clinical examinations enhances traditional diagnostic processes by providing immediate visual feedback, facilitating a more accurate and comprehensive assessment of msk conditions.”

Malliaropoulos N, Daoukas S. MSK ultrasound imaging-assisted clinical examination. Ultrasound. 2024 Sep 20:1742271X241280911. doi: 10.1177/1742271X241280911. Epub ahead of print. PMID: 39555161; PMCID: PMC11563557.

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Ultrasound. 2024 Sep 20:1742271X241280911. doi: 10.1177/1742271X241280911. Online ahead of print.

MSK ultrasound imaging-assisted clinical examination

Nikos Malliaropoulos [1 2 3 4], Stavros Daoukas [5 6 7]

Affiliations + expand

PMID: 39555161 PMCID: PMC11563557 DOI: 10.1177/1742271X241280911

Abstract

Musculoskeletal disorders are a significant global health concern, affecting over 1.71 billion individuals worldwide, with a considerable impact on quality of life and economic burden due to healthcare costs and productivity losses. In the United Kingdom, approximately one-third of the population suffers from musculoskeletal disorders, underscoring the need for effective diagnostic and management strategies. Musculoskeletal ultrasound imaging emerges as a preferred diagnostic modality, offering a balance between technical capabilities and cost-effectiveness, owing to its non-invasive nature, portability and lack of radiation exposure. However, the operator-dependent nature of musculoskeletal ultrasound imaging necessitates specialised training for medical and healthcare professionals. The integration of musculoskeletal ultrasound imaging into traditional clinical examinations, known as ultrasound imaging-assisted clinical examination (UIACE), enhances traditional diagnostic processes by providing immediate visual feedback, facilitating a more accurate and comprehensive assessment of musculoskeletal conditions. This approach not only refines diagnosis in cases with ambiguous symptoms or overlapping signs but also significantly improves patient reassurance and management strategies. In addition, incorporating musculoskeletal ultrasound imaging into medical education through ultrasound imaging-assisted clinical examination offers students a dynamic, interactive learning experience, fostering a deeper understanding of clinical anatomy and examination skills. By advocating for its systematic inclusion in the undergraduate medical curriculum, the study highlights the potential to enhance the competence and confidence of future professionals in utilising ultrasound imaging, ultimately improving patient outcomes in musculoskeletal care.

Keywords: Musculoskeletal; medical education; point-of-care-ultrasound; ultrasound imaging.

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MSK Ultrasound – An IJSPT Perspective

> By allowing healthcare providers to access critical information quickly and conveniently, MSK ultrasound can help identify conditions early when interventions are most effective.”

Page P, Manske RC, Voight M, Wolfe C. MSK Ultrasound - An IJSPT Perspective. Int J Sports Phys Ther. 2023 Feb 2;18(1):1-10. doi: 10.26603/001c.68184. PMID: 36793557; PMCID: PMC9897034.

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Int J Sports Phys Ther. 2023 Feb 2;18(1):1-10. doi: 10.26603/001c.68184. eCollection 2023.

MSK Ultrasound - An IJSPT Perspective

Phil Page [1], Robert C Manske [2], Michael Voight [3], Chris Wolfe [3]

Affiliations + expand

PMID: 36793557 PMCID: PMC9897034 DOI: 10.26603/001c.68184

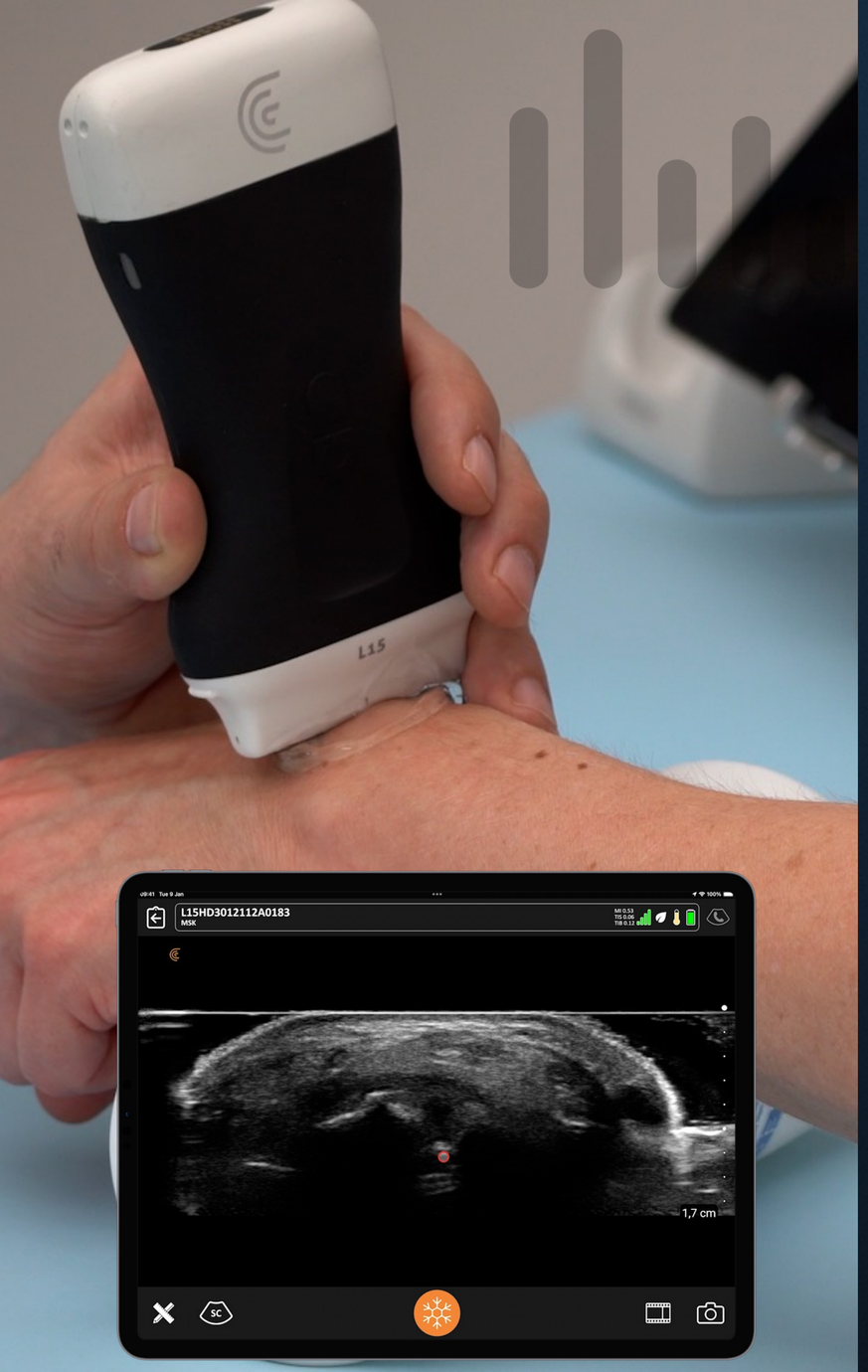
Abstract

MSK ultrasound is a valuable imaging technique which has become increasingly popular in recent years. This efficient technique proves beneficial in a variety of ways. MSK ultrasound effectively streamlines the process by enabling practitioners to securely and accurately image and assess structures all in one simple step. By allowing healthcare providers to access critical information quickly and conveniently, MSK ultrasound can help identify conditions early when interventions are most effective. Moreover, it may be able to shorten diagnostic times and reduce costs through more cost-effective use of resources such as imaging and laboratory testing. Furthermore, MSK ultrasound can provide additional insights into musculoskeletal anatomy and help improve patient care and outcomes. In addition, utilizing this method reduces exposure to radiation and provides enhanced patient comfort with its quick scan duration. MSK ultrasound has a high potential to provide quick and accurate diagnosis of MSK disturbances when used correctly. As clinicians become more comfortable and familiar with this technology, we will continue to see its use expand for various MSK assessments. In this commentary we'll explore how ultrasound can be used in physical therapy, specifically for musculoskeletal assessment. We'll also look at some of the potential benefits and limitations of using ultrasound in PT practice.

Keywords: MSK ultrasound; PT imaging.

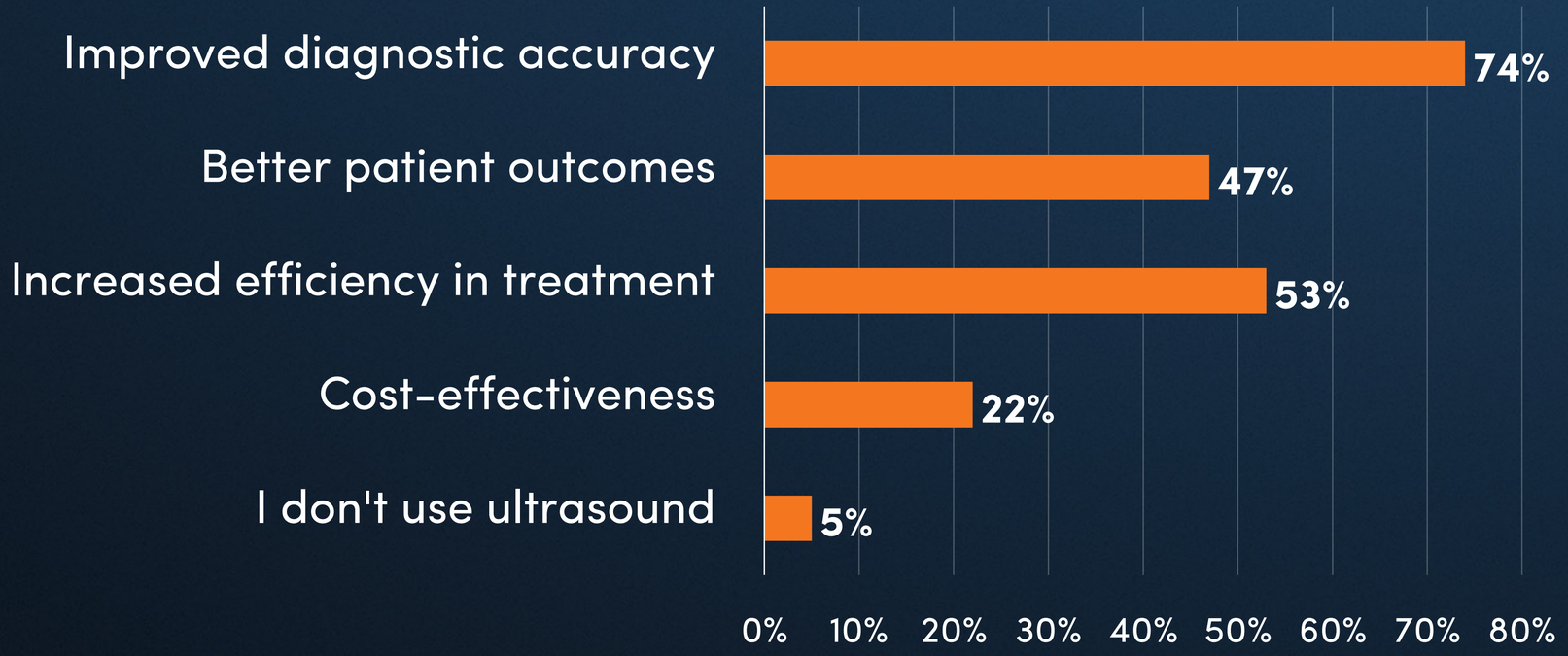
PubMed Disclaimer

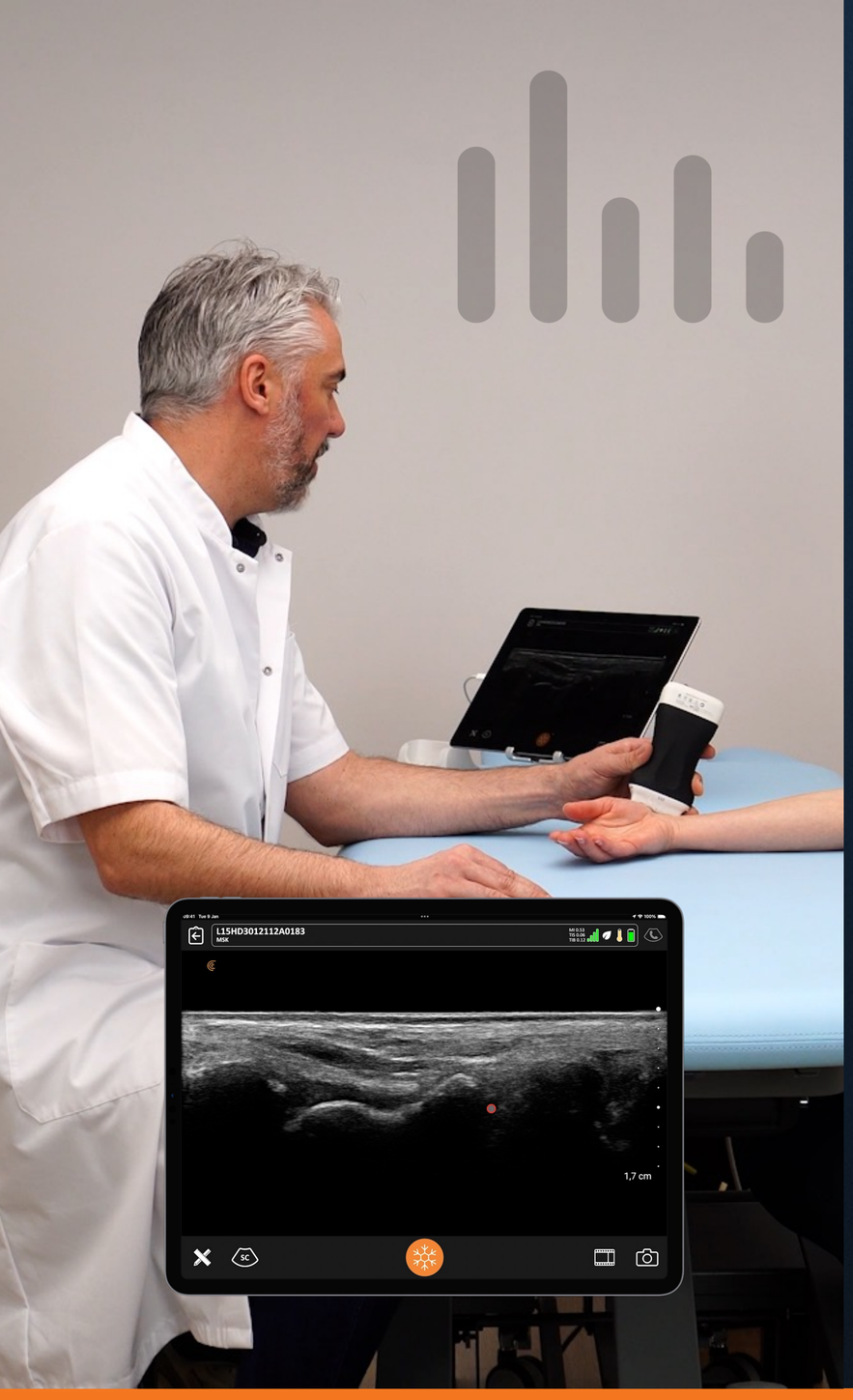
Figures



Interactive Poll

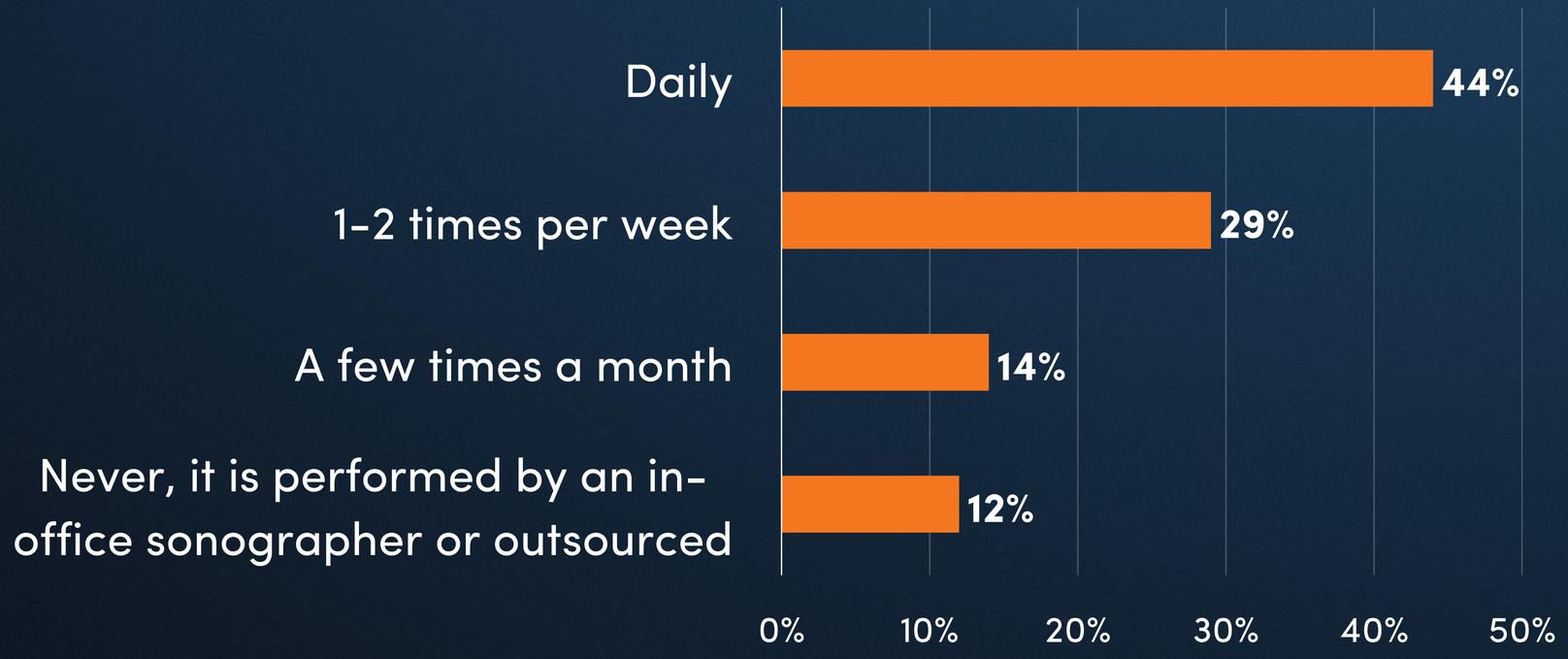
What do you perceive as the benefits of using ultrasound in your practice?





Interactive Poll

If you are using ultrasound, how often?



Your Expert Speakers

Marc Schmitz, MSc

Founder & CEO of Sonoskills

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POCUS for MSK: Mastering Hand and Wrist Ultrasound

Disclosure

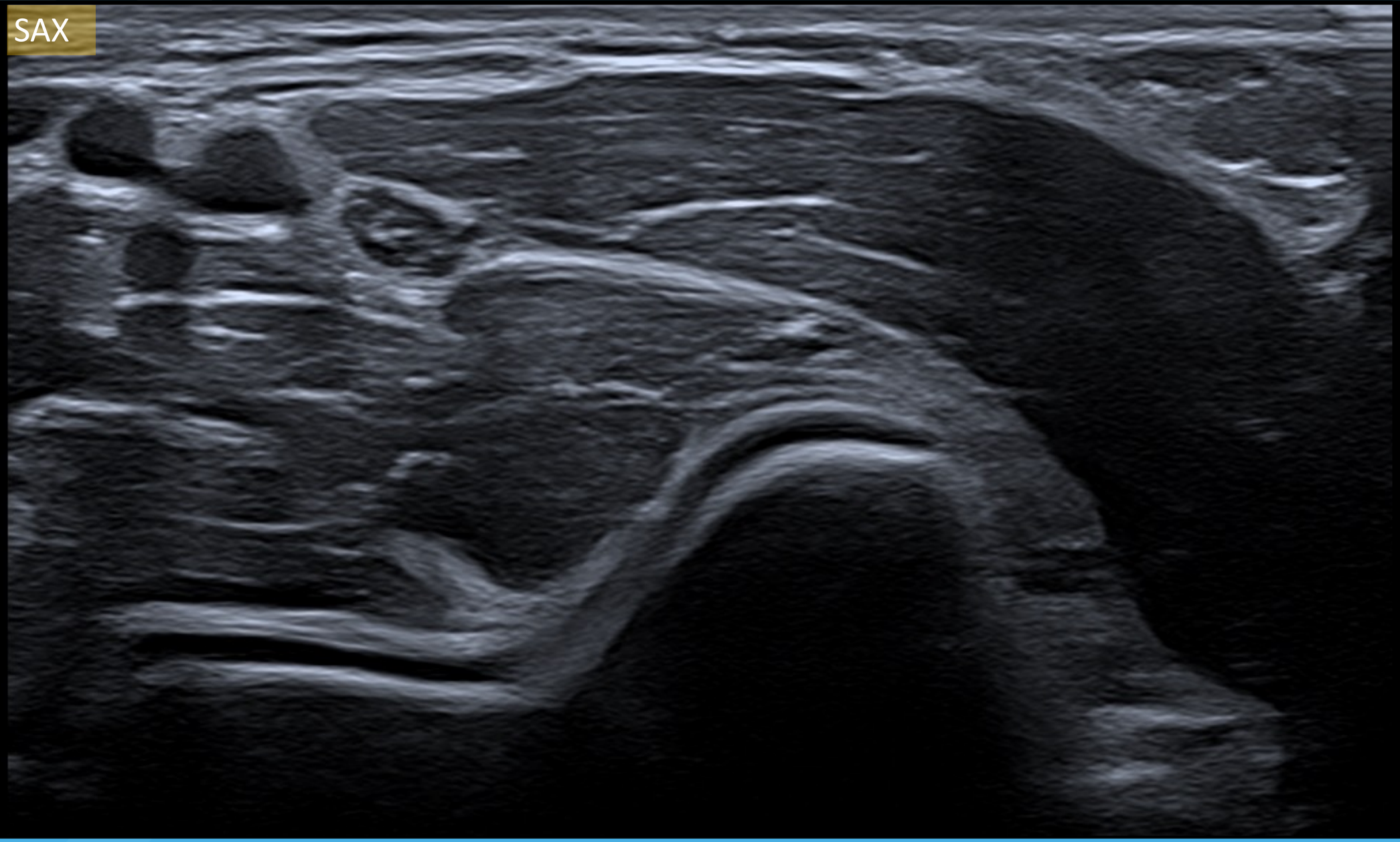
I have NO financial relationship or conflicts of interest with the presented material in this activity

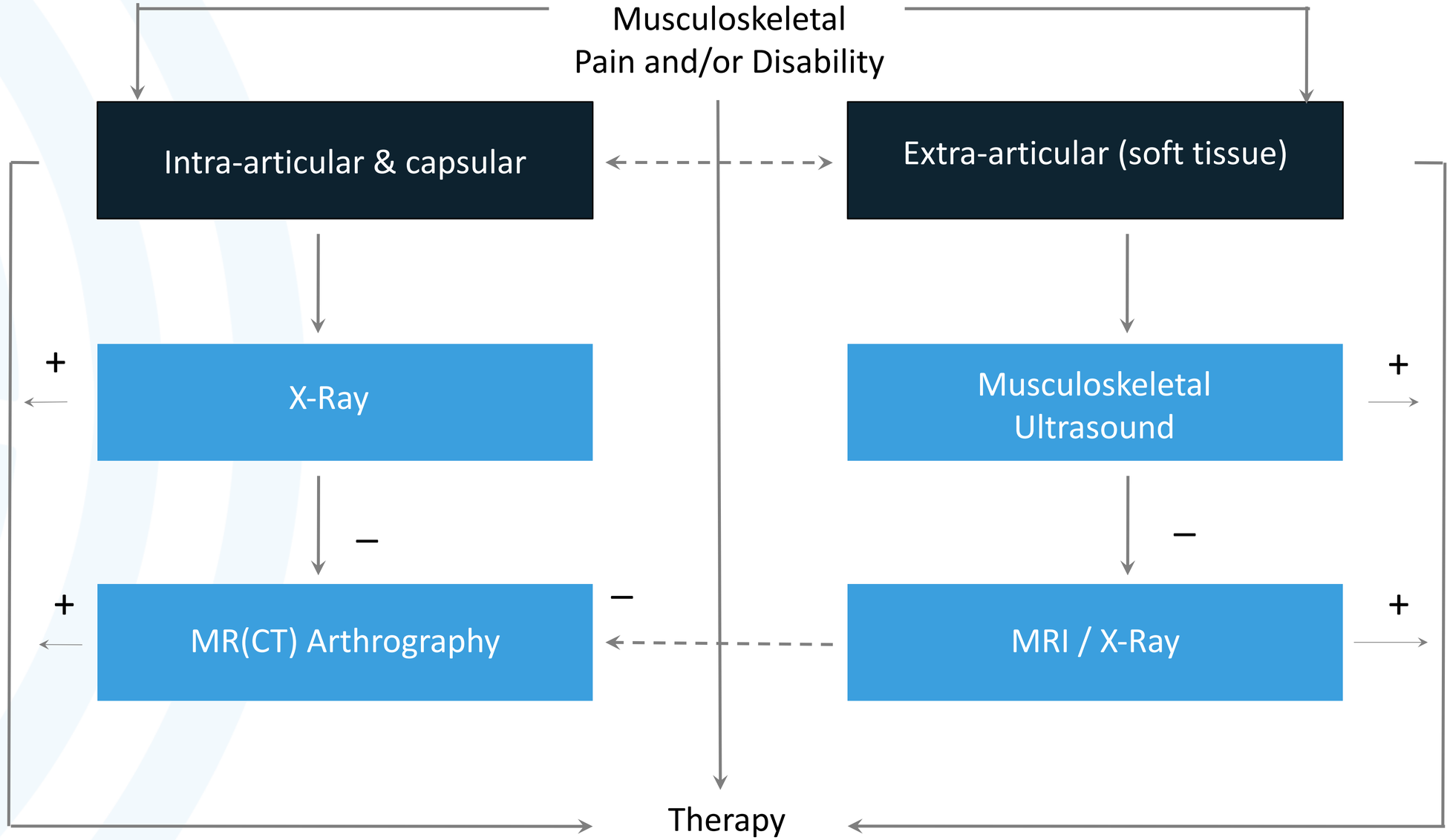
Liquid

Muscle

Tendon

Bone





Rutten et al. 2010

Clinical indications for musculoskeletal ultrasound updated in 2017 by European Society of Musculoskeletal Radiology (ESSR) consensus

Pathology	Consensus
Pulley injuries	3
Tenosynovitis / tendon tear	3
Trigger finger	3
Jersey finger	3
Quervain	3
Foreign body / masses	3
Carpal tunnel syndrome	3

Sconfienza et al. 2018

Clinical indications for musculoskeletal ultrasound updated in 2017 by European Society of Musculoskeletal Radiology (ESSR) consensus

Pathology	Consensus
Stener lesion	2
Intersection syndrome	2
Volar plate avulsion	2
STT osteoarthritis	2
Pisiform triquetral osteoarthritis	2

Sconfienza et al. 2018

Clinical indications for musculoskeletal ultrasound updated in 2017 by European Society of Musculoskeletal Radiology (ESSR) consensus

Pathology	Consensus
Capitate	1
Scapholunate ligament	1
Trapezium	0
Hamate	0
TFCC	0

Sconfienza et al. 2018

Marc Schmitz, MSc.

sonoskills

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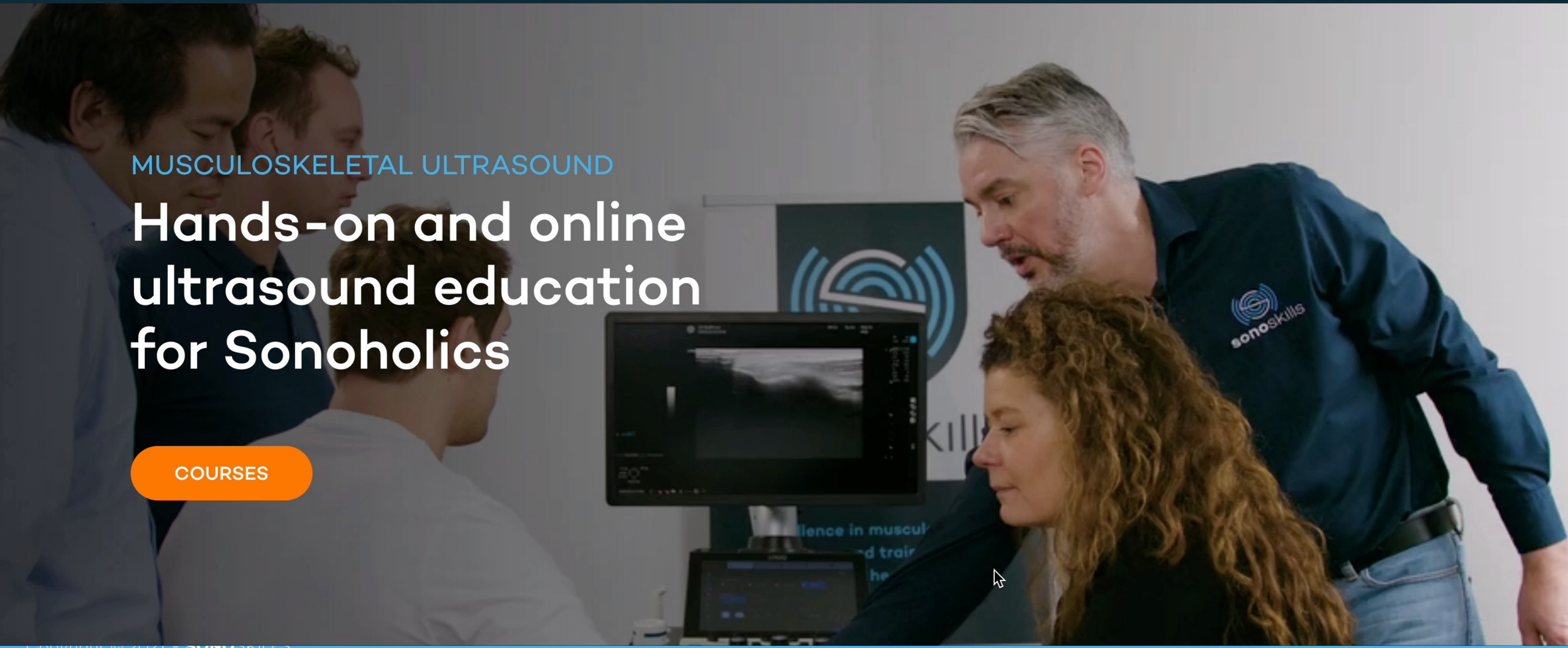
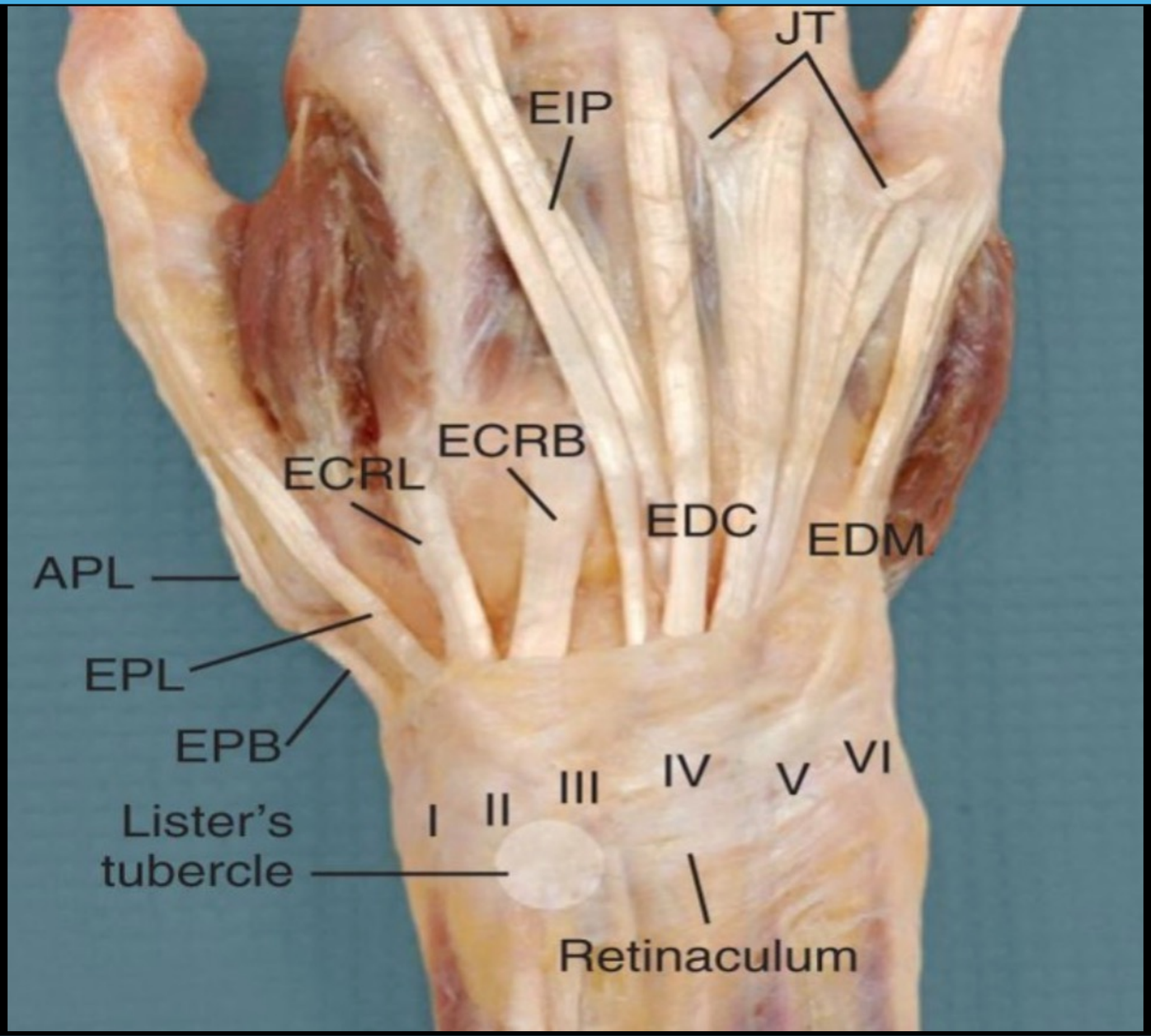


Intersection syndrome



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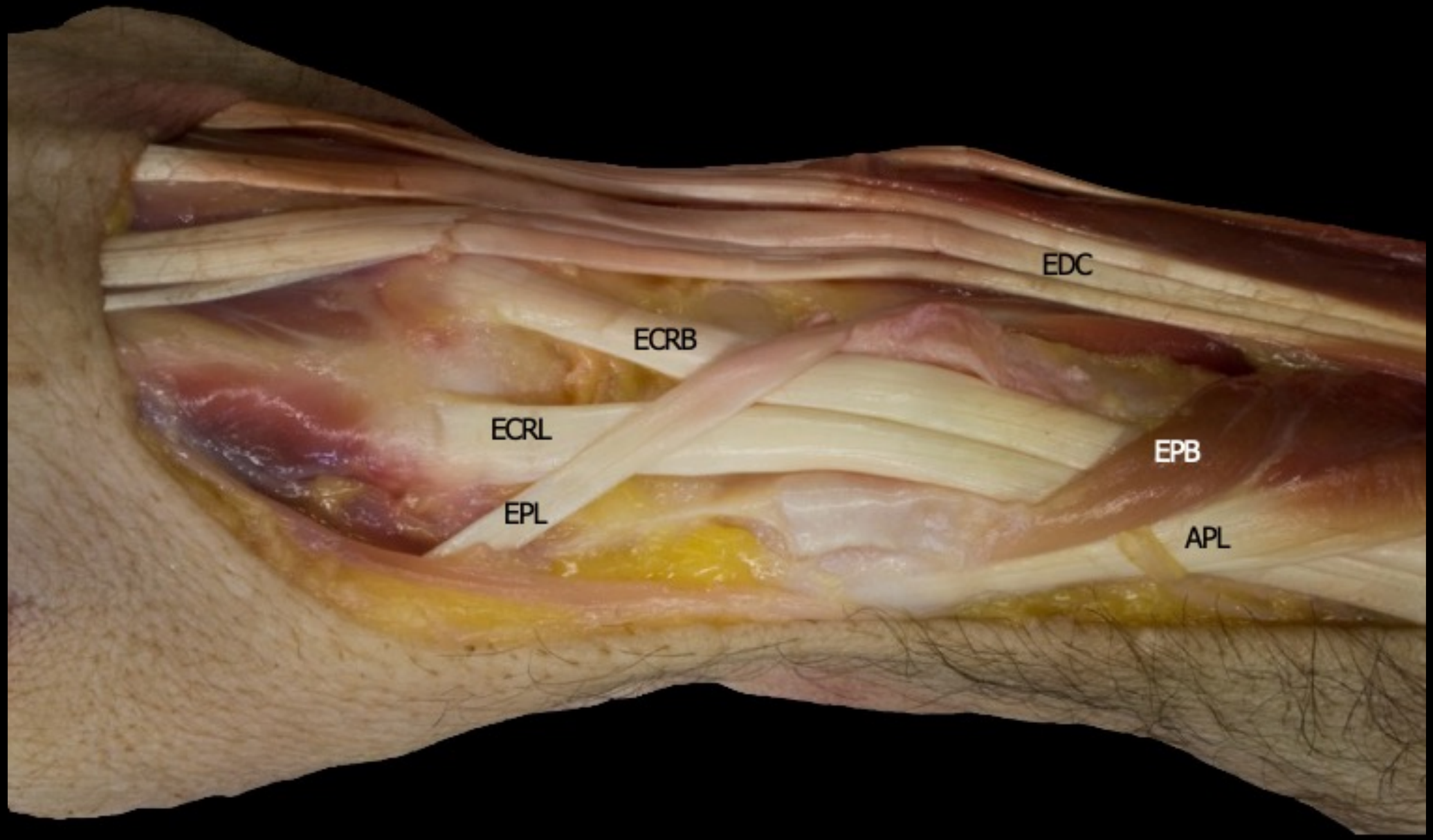

Martinoli 2019


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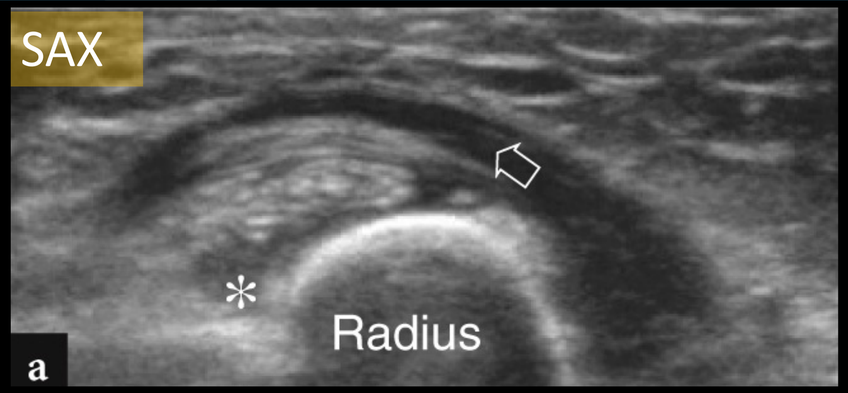
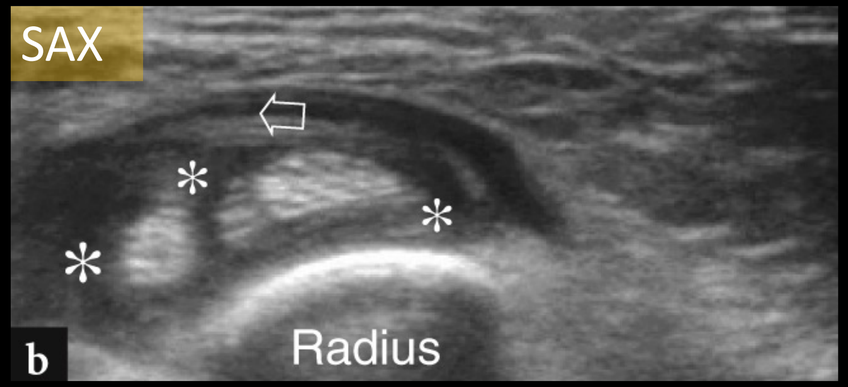
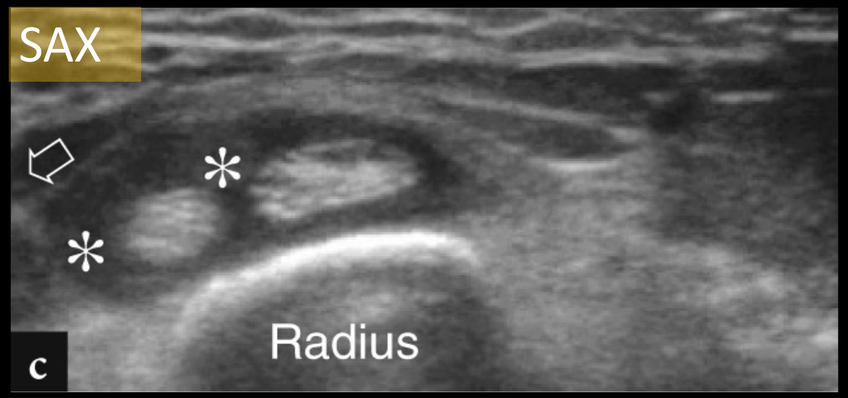
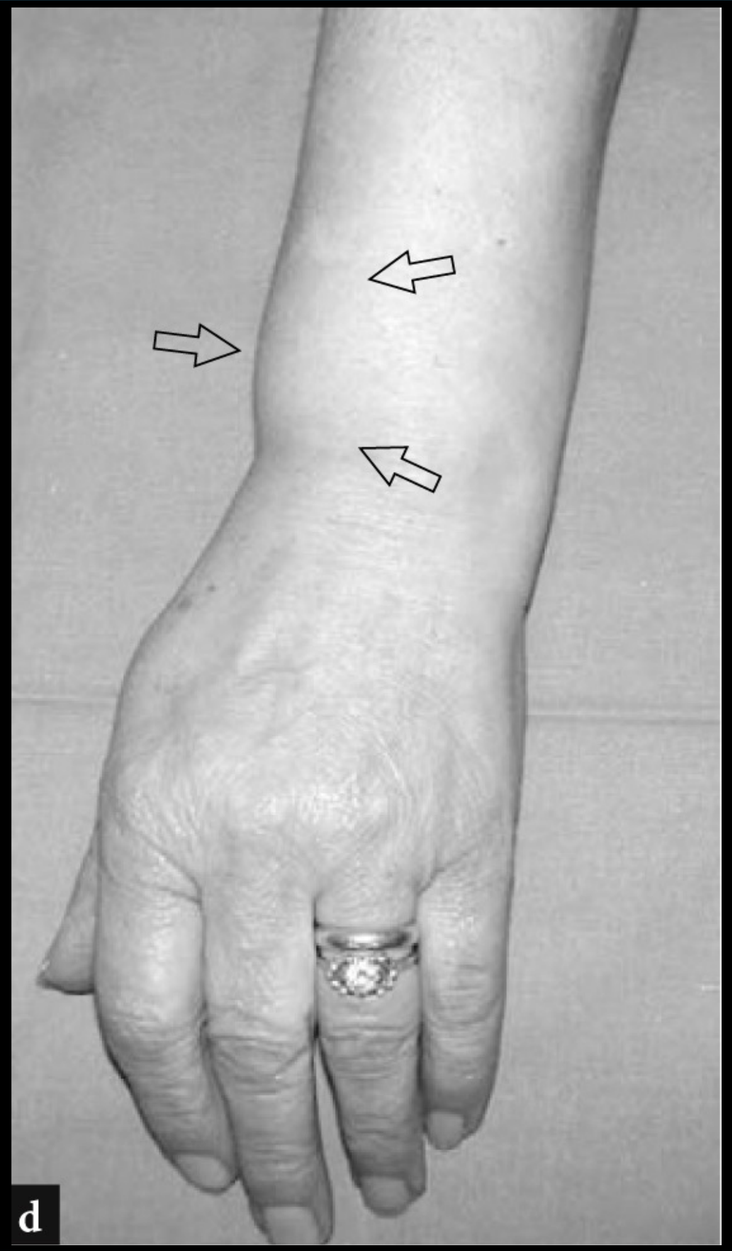
MSK
MI 0.53
TIS 0.06
TIB 0.12
1,3 cm
SC









Bianchi et al 2007

European Radiology
https://doi.org/10.1007/s00330-018-5474-3

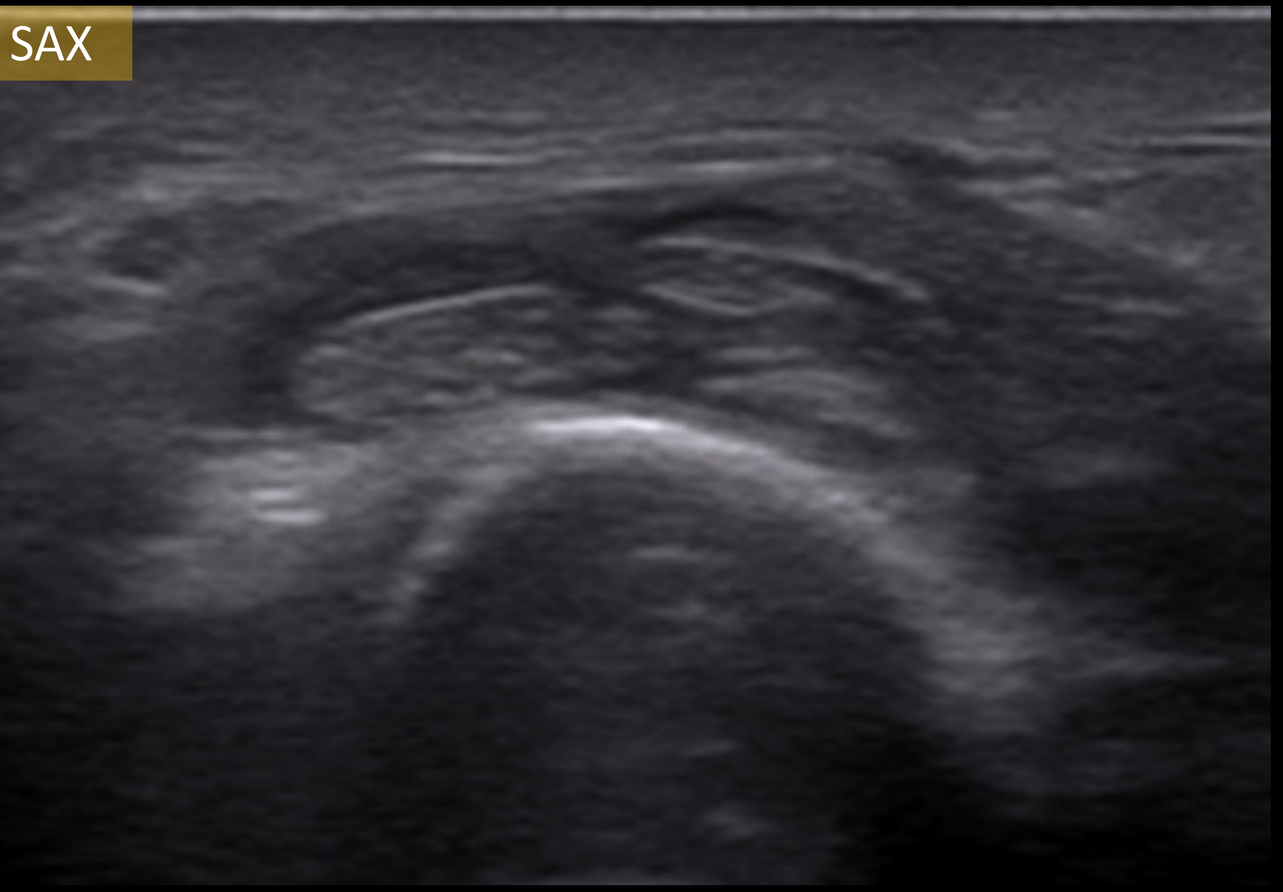
MUSCULOSKELETAL

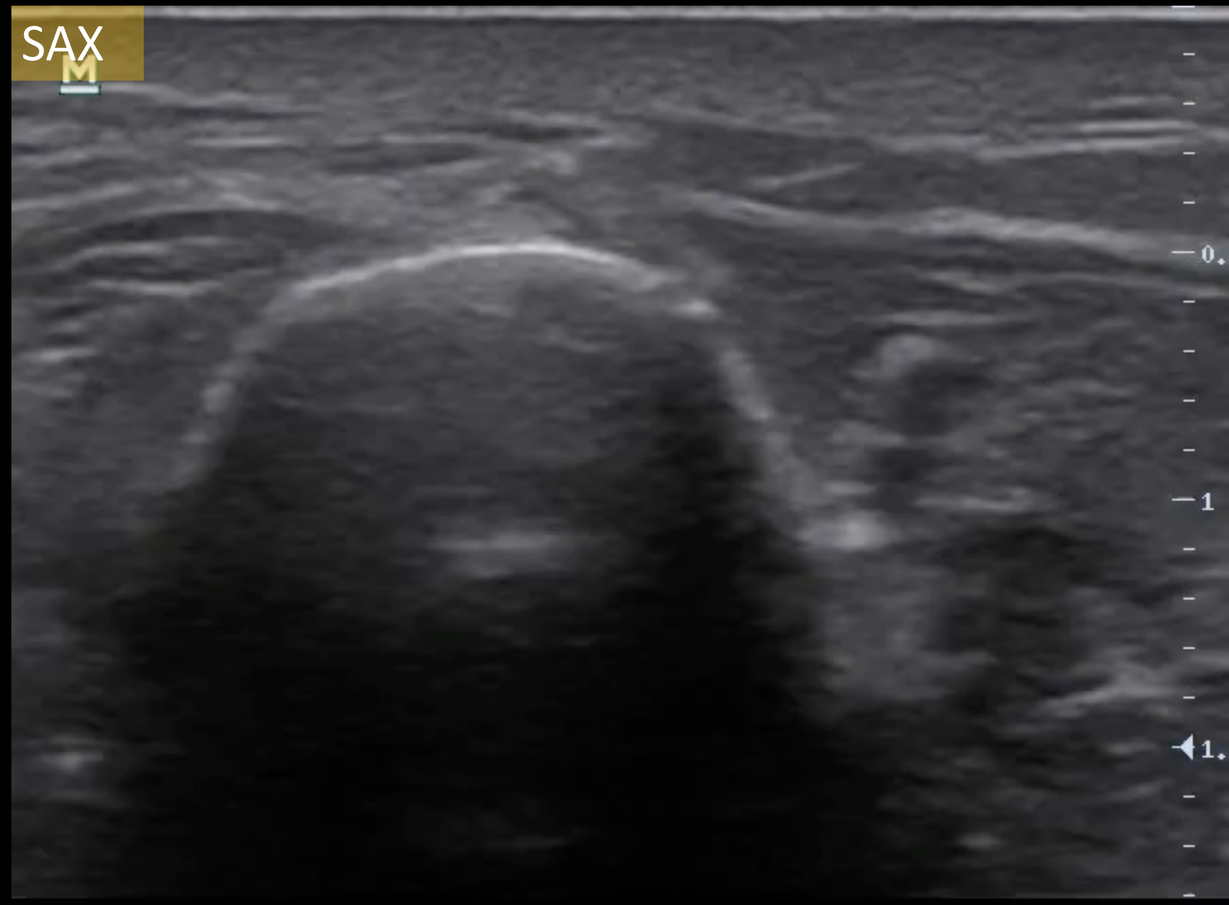
Clinical indications for musculoskeletal ultrasound updated in 2017 by European Society of Musculoskeletal Radiology (ESSR) consensus

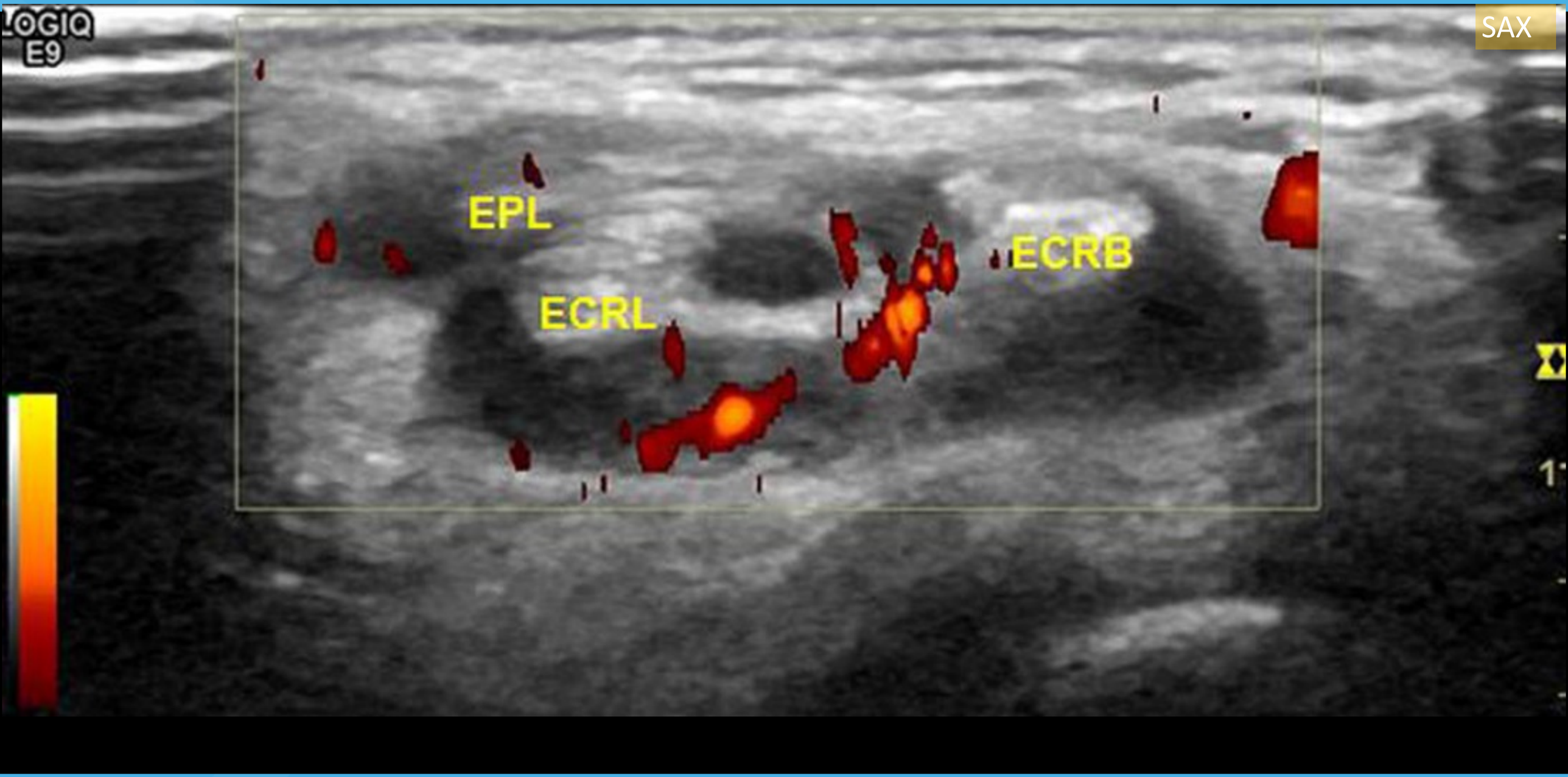
Luca Maria Sconfienza[1,2] · Domenico Albano[3] · Georgina Allen[4] · Alberto Bazzocchi[5] · Bianca Bignotti[6] · Vito Chianca[7] · Fernando Facal de Castro[8] · Elena E. Drakonaki[9] · Elena Gallardo[10] · Jan Gielen[11] · Andrea Sabine Klauser[12] · Carlo Martinoli[6,13] · Giovanni Mauri[14] · Eugene McNally[15] · Carmelo Messina[1,2] ·

Pathology	Consensus
Intersection syndrome	2

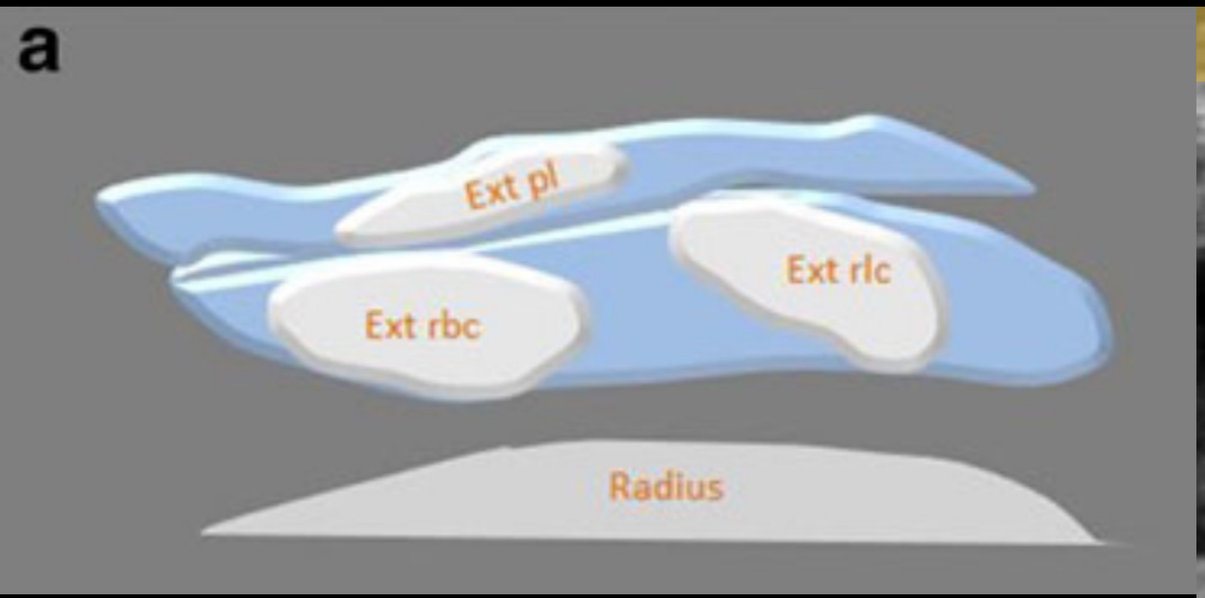
Sconfienza et al. 2018







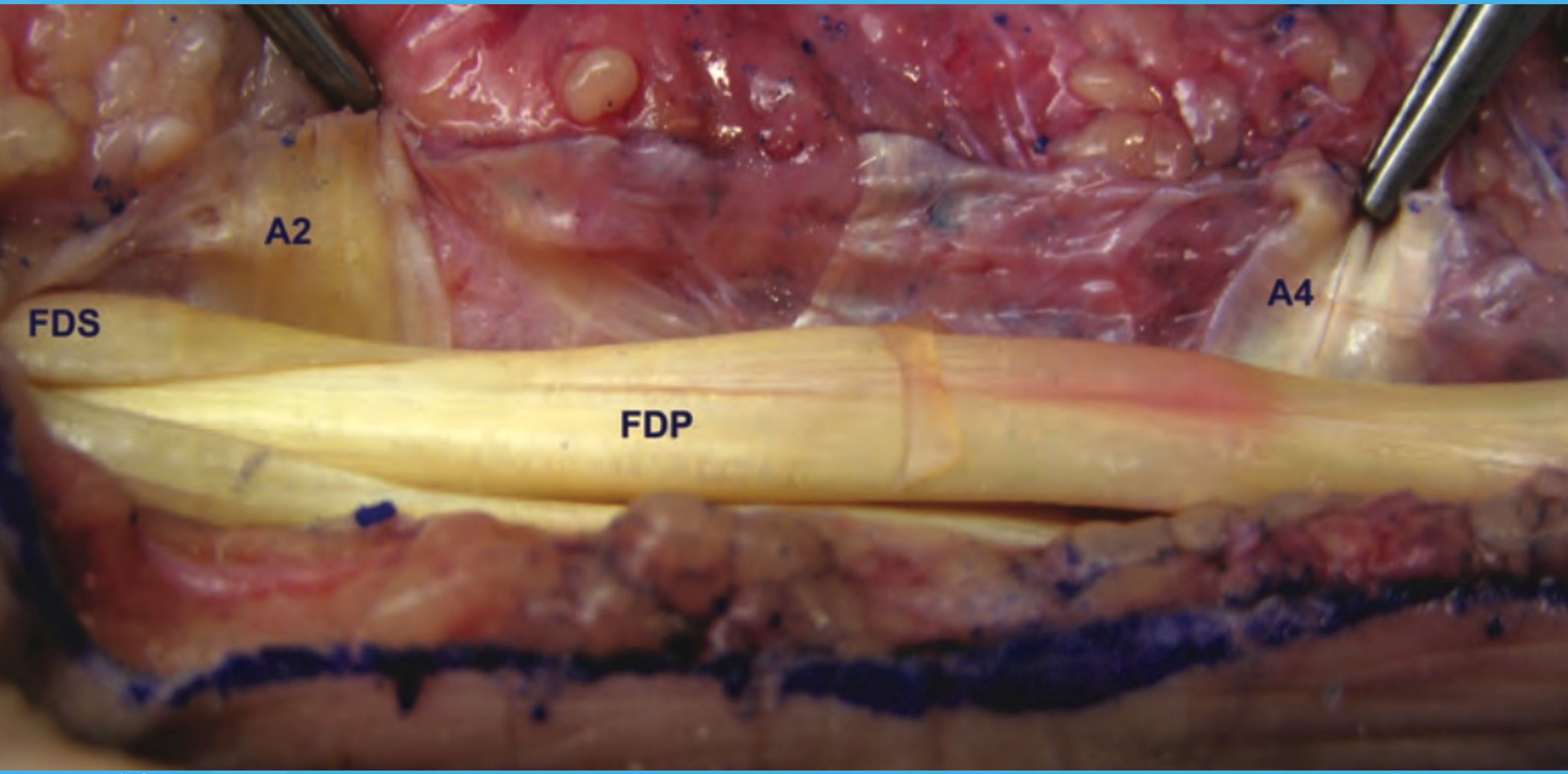
Mattox et al. 2017



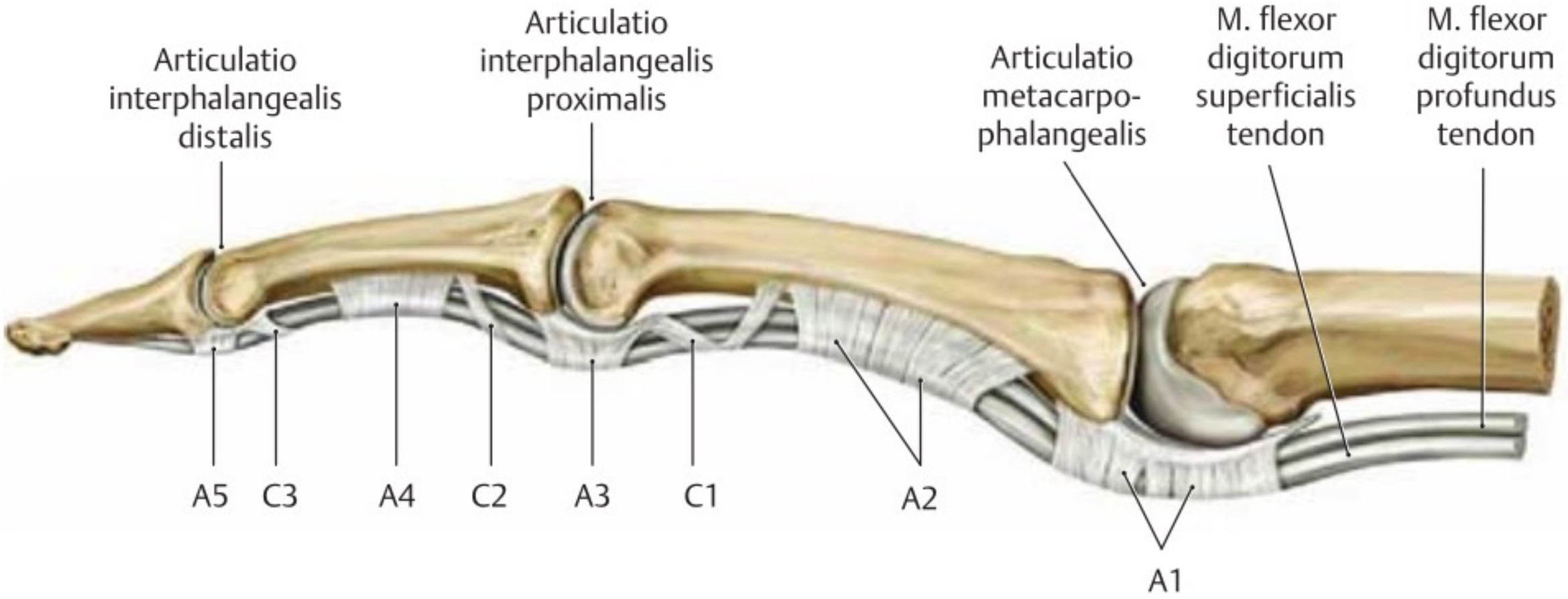
Draghi et al. 2014

Flexor tendon | pulley

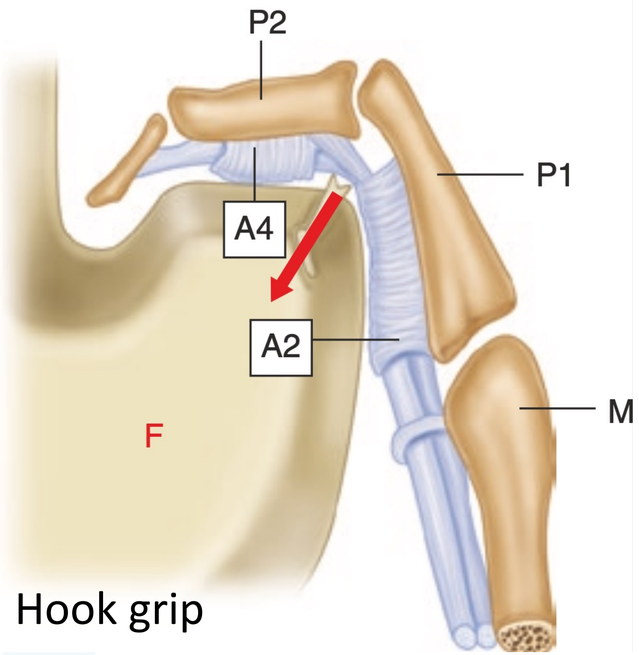
Nielsen et al. 2010



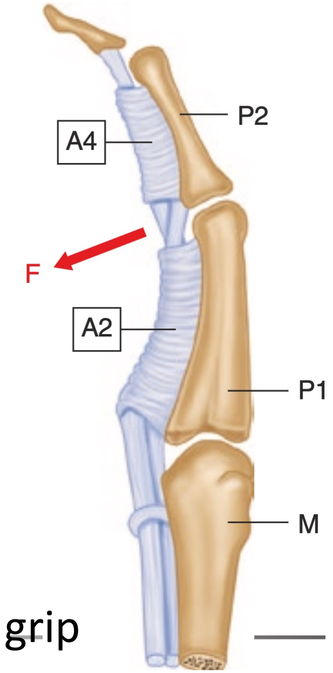
Leversedge et al. 2010



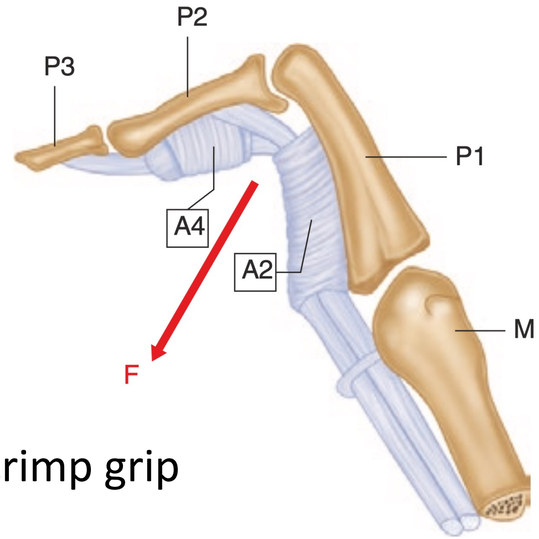
Schuenke et al. 2009



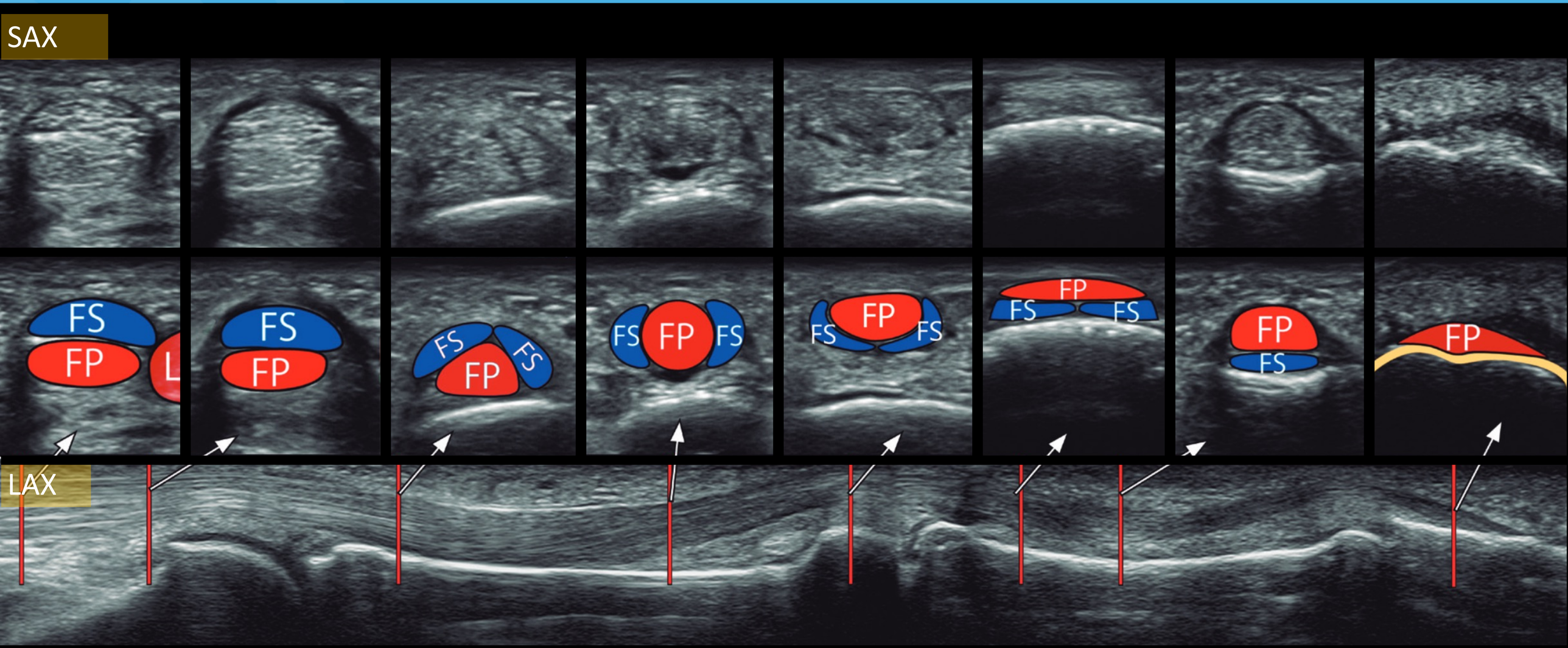
Hook grip



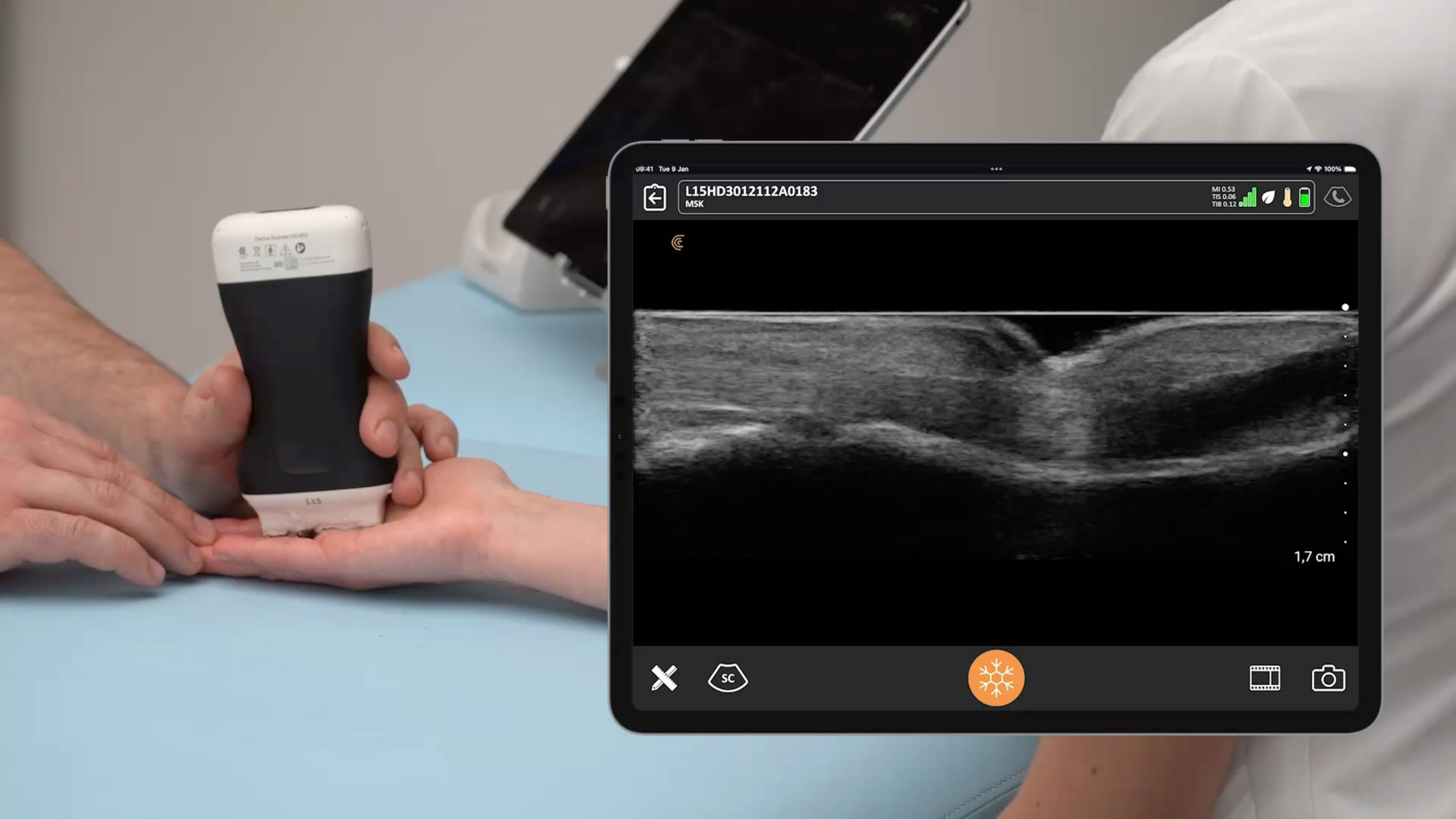
Slope grip



Crimp grip



Iriarte et al. 2021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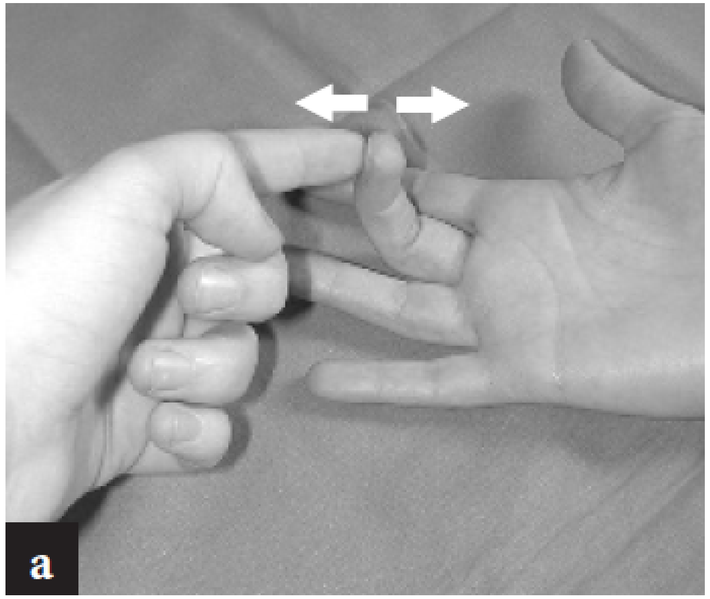

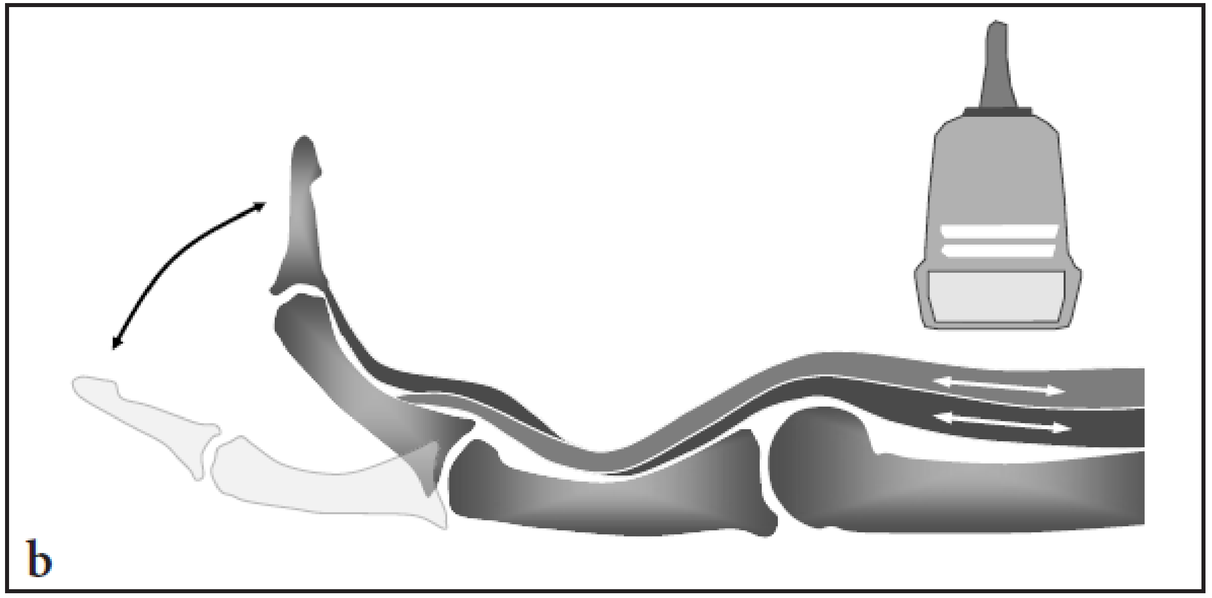

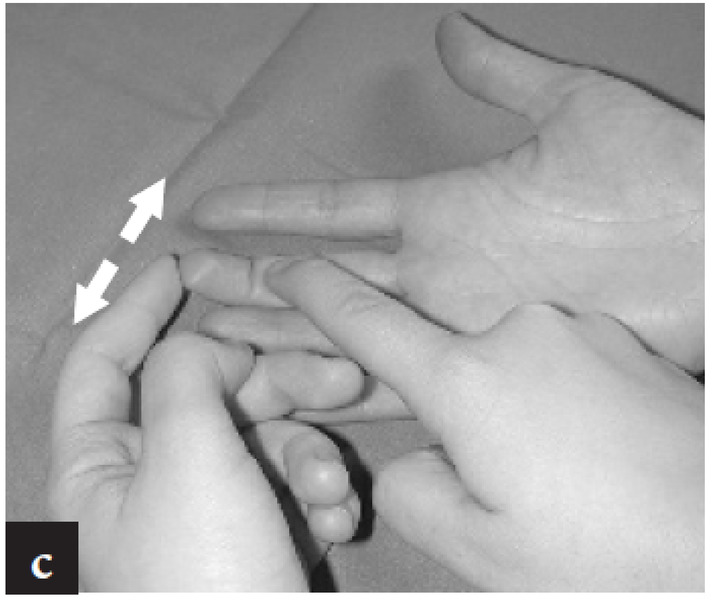

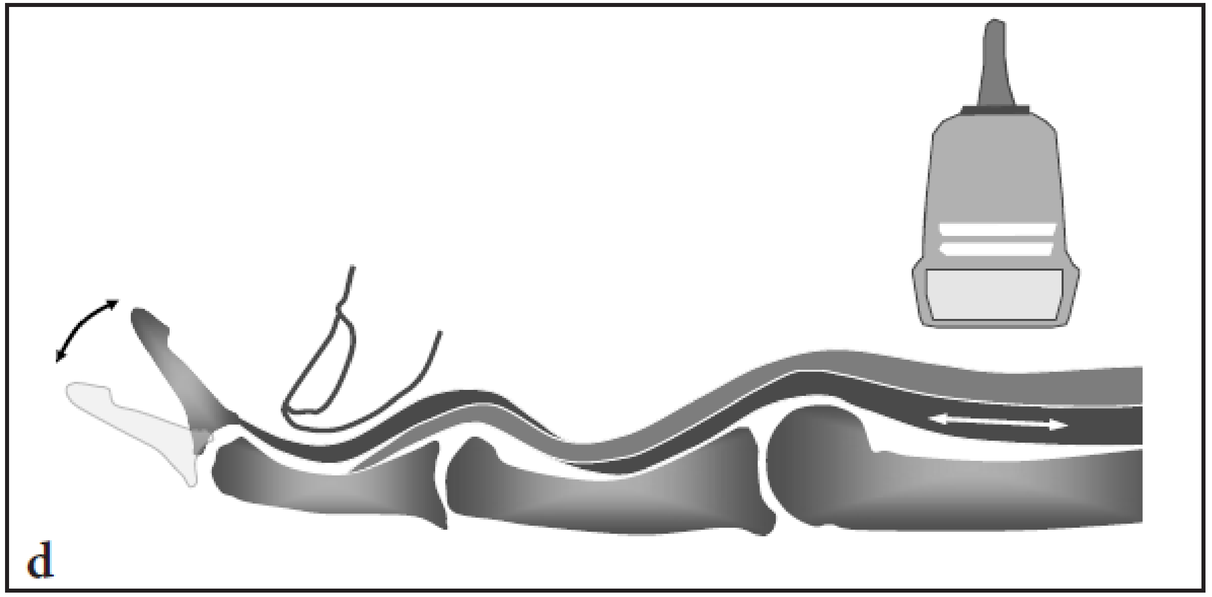

Bianchi et al. 2007

European Radiology
https://doi.org/10.1007/s00330-018-5474-3

MUSCULOSKELETAL

Clinical indications for musculoskeletal ultrasound updated in 2017 by European Society of Musculoskeletal Radiology (ESSR) consensus

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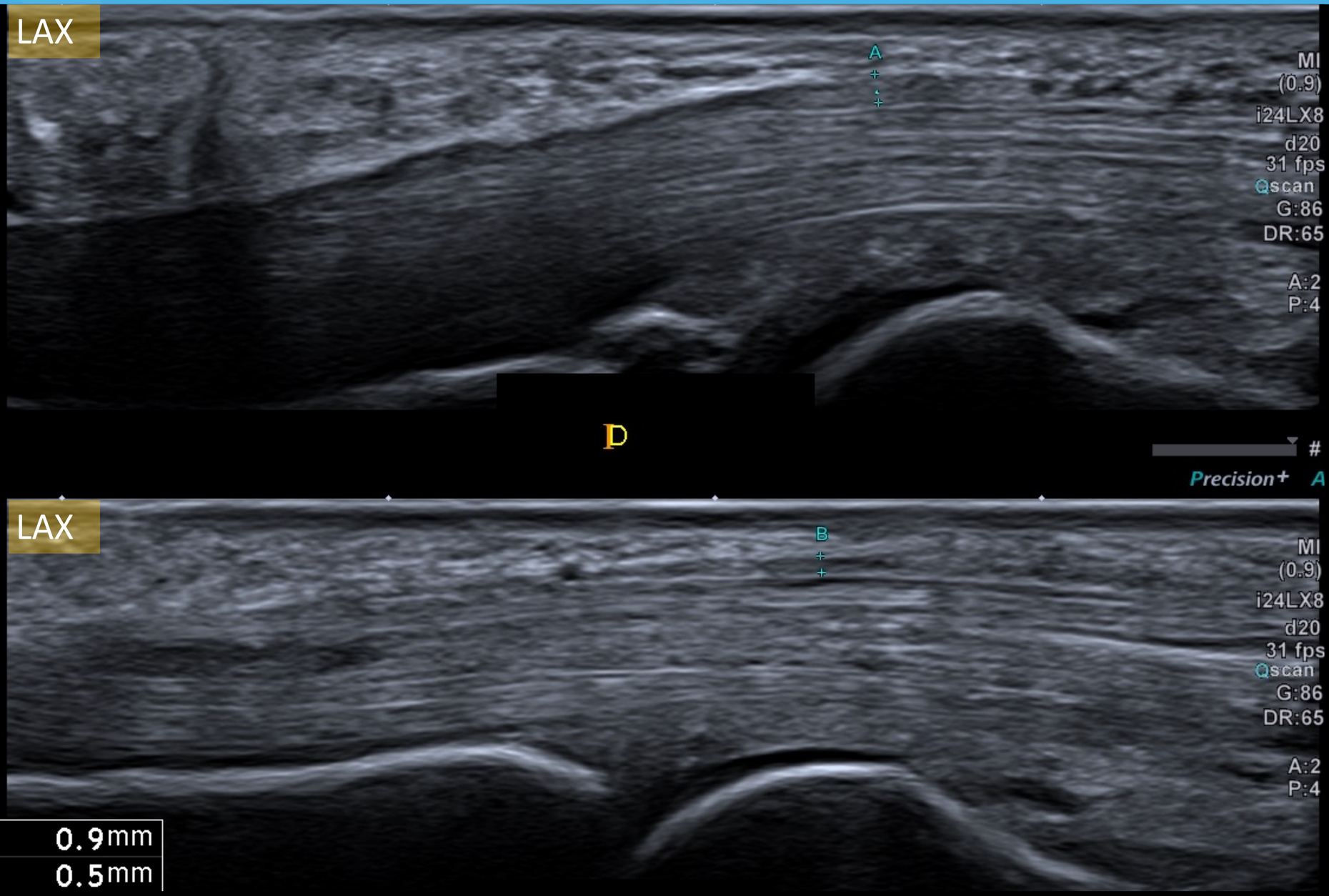
Pathology	Consensus
Trigger finger	3

Sconfienza et al. 2018

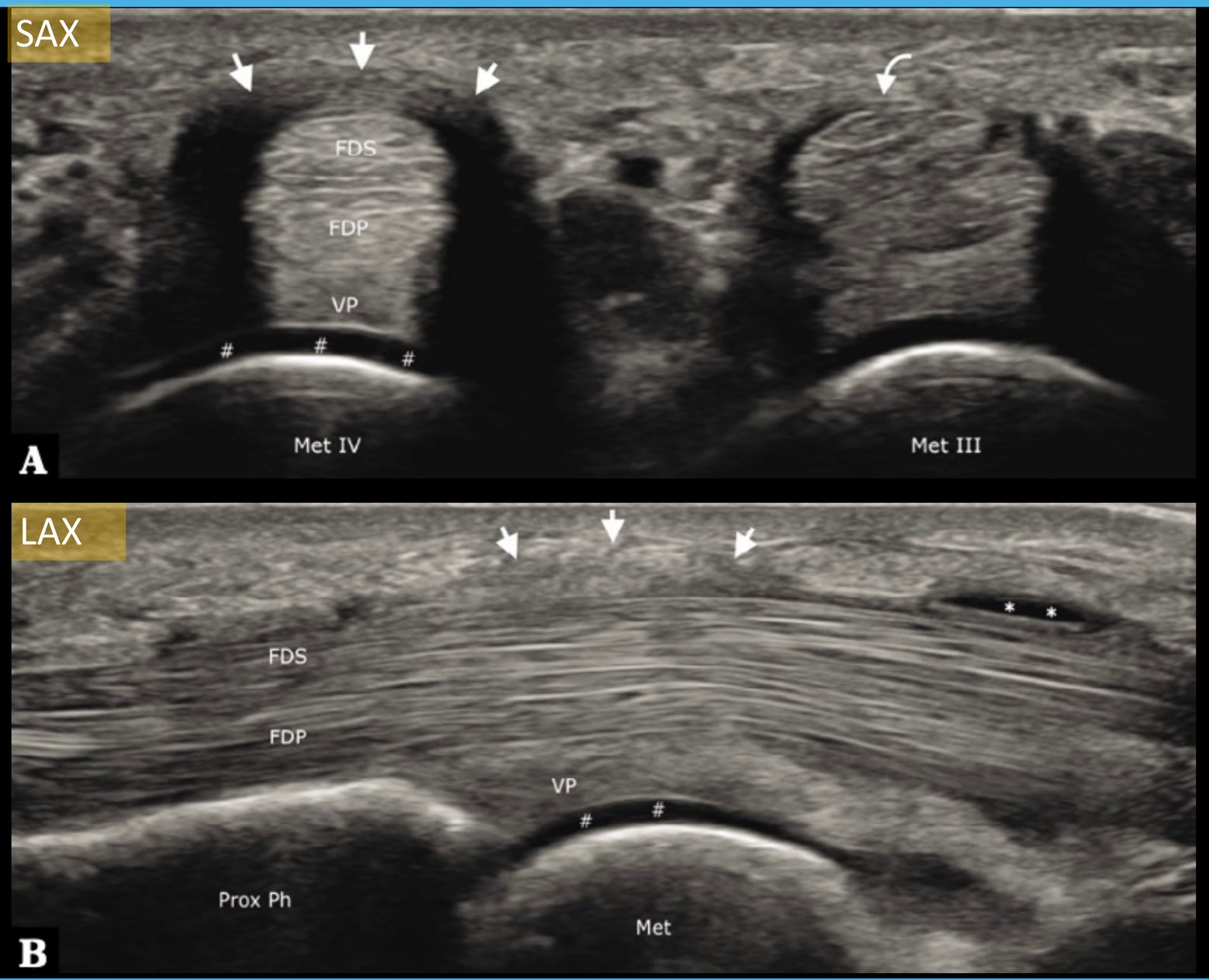
- Chronic repetitive movements of the finger lead to both thickening of the A1-pulley and swelling of the tendons
  - Narrows osteofibrous tunnel
  - Impairing tendon gliding
- Sometimes affected A2 pulley
- Due to:
  - Idiopatic
  - Chronic overuse (repetitive microtrauma)
  - Diabetes mellitus
  - Rheumatoid arthritis
  - Fibrous scars
  - Tendon sheath tumors
  - Peri-tendinous ganglion cysts

Guerini et al. 2009; Serafini et al. 1996

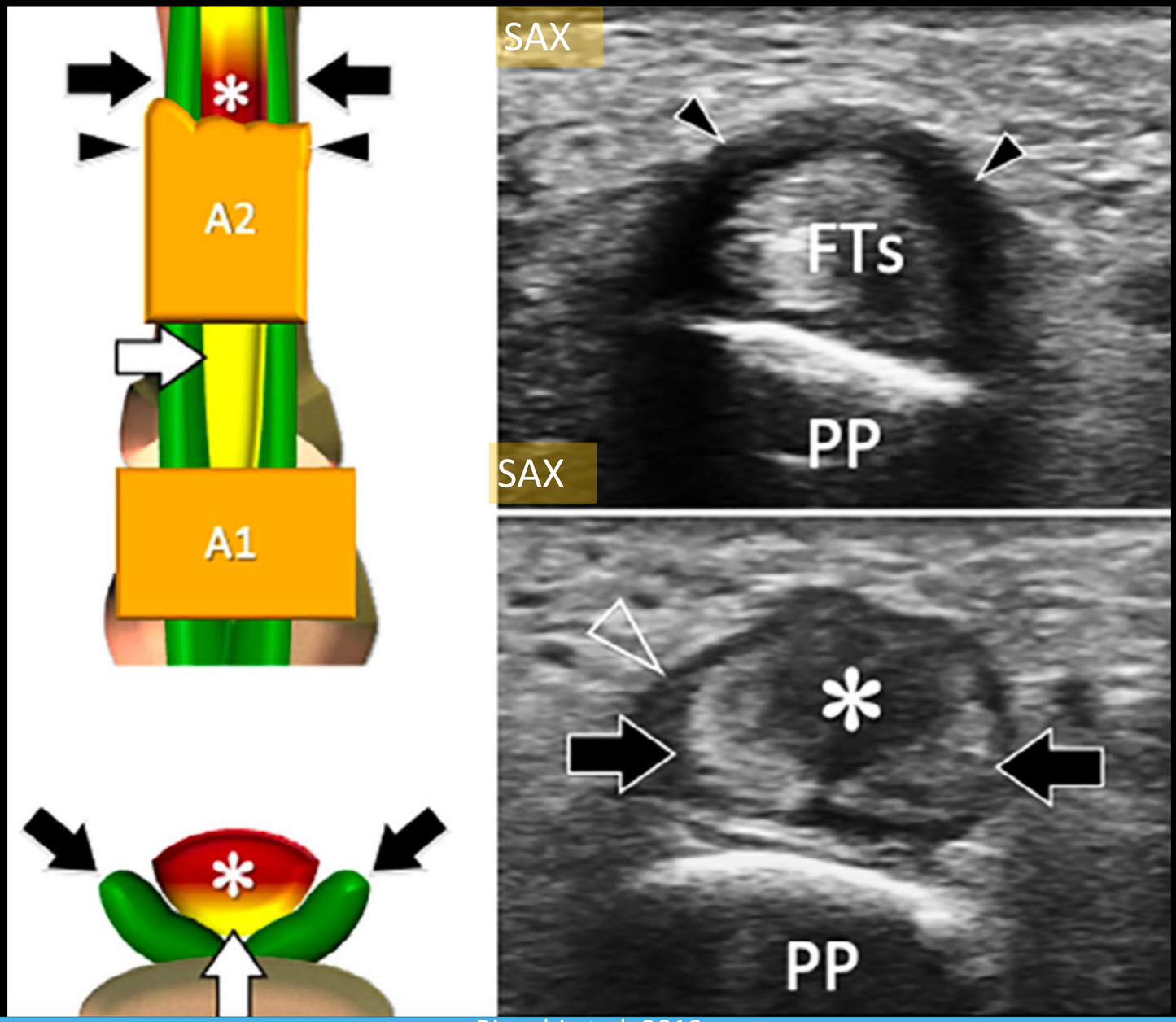


- A1-pulley thickness
  - Normal (mean, 0.5mm; 0.4-0.6mm)
  - Trigger finger (mean, 1.8mm; 1.1-2.9mm)
- Associated findings
  - 48% tendinosis
  - 55% tenosynovitis
  - 39% both
  - 91% hypervascular on power Doppler

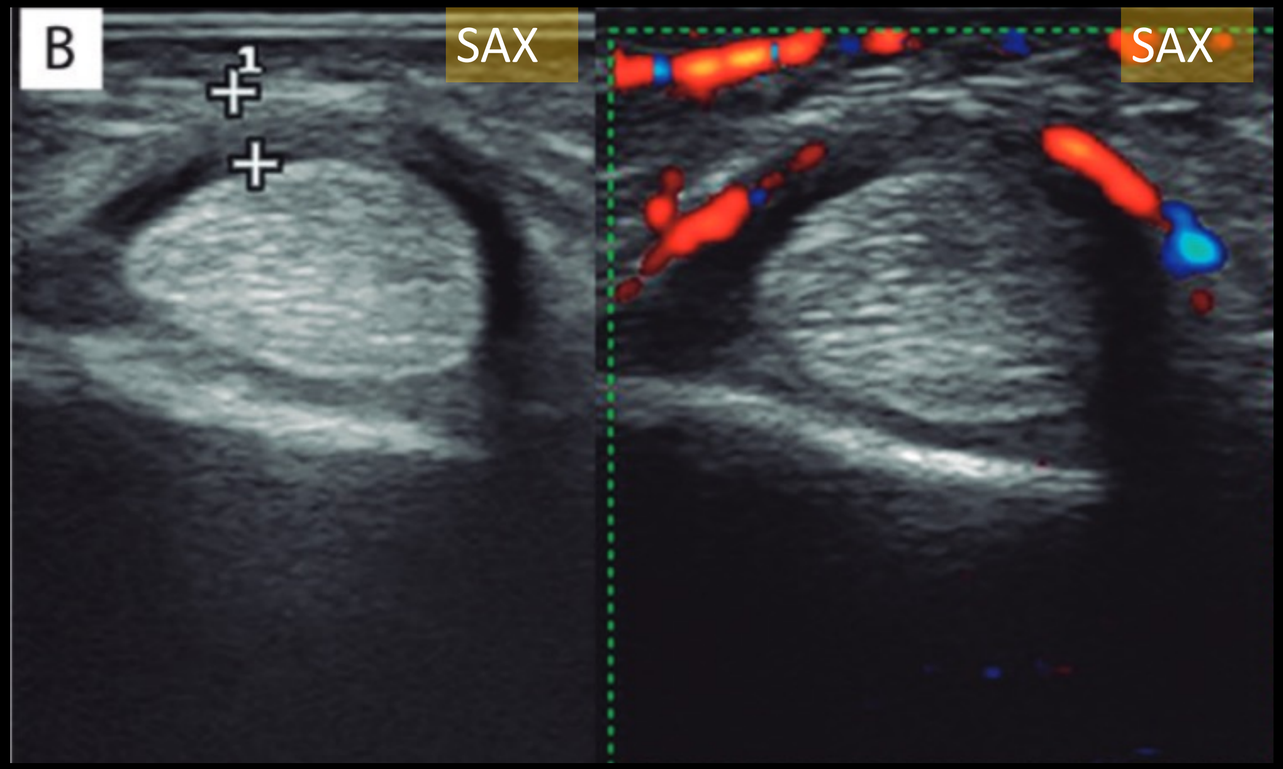
Guerini et al. 2009; Serafini et al. 1996

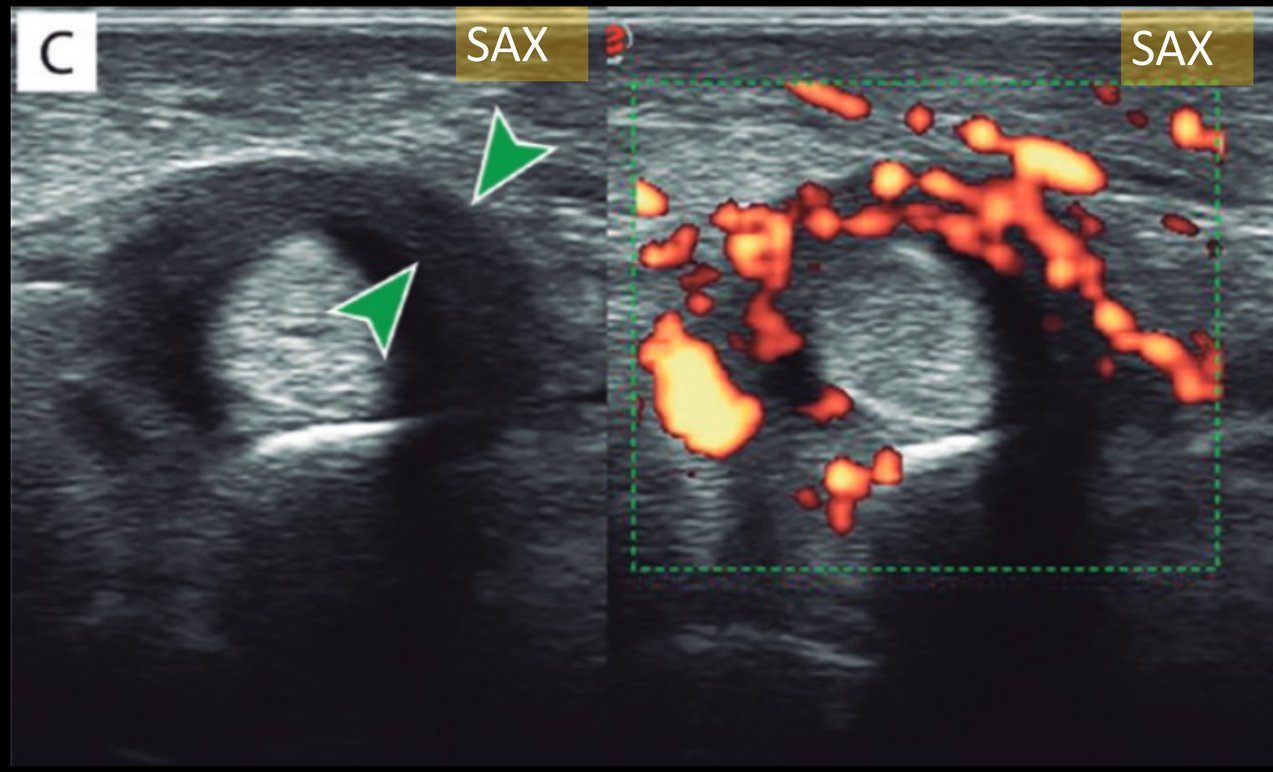


Rosskopf et al. 2021



Bianchi et al. 2019





Iriarte et al. 2021

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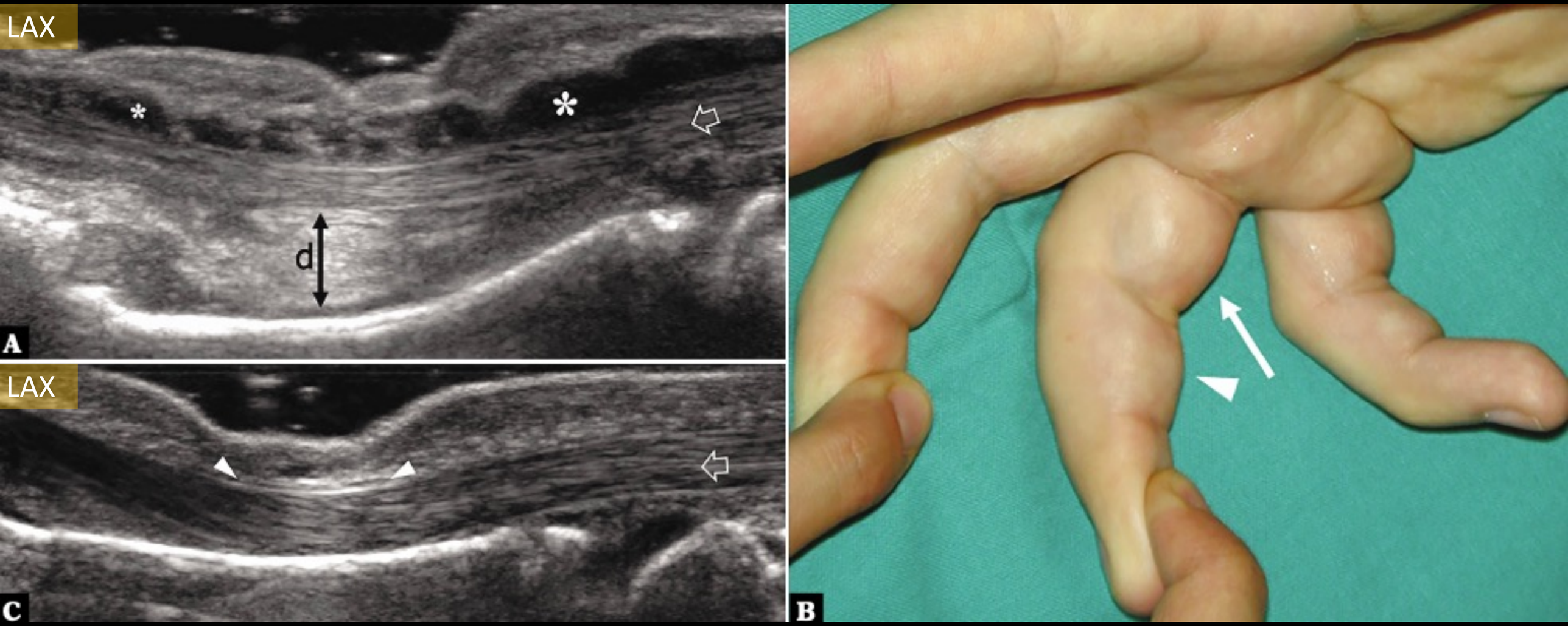
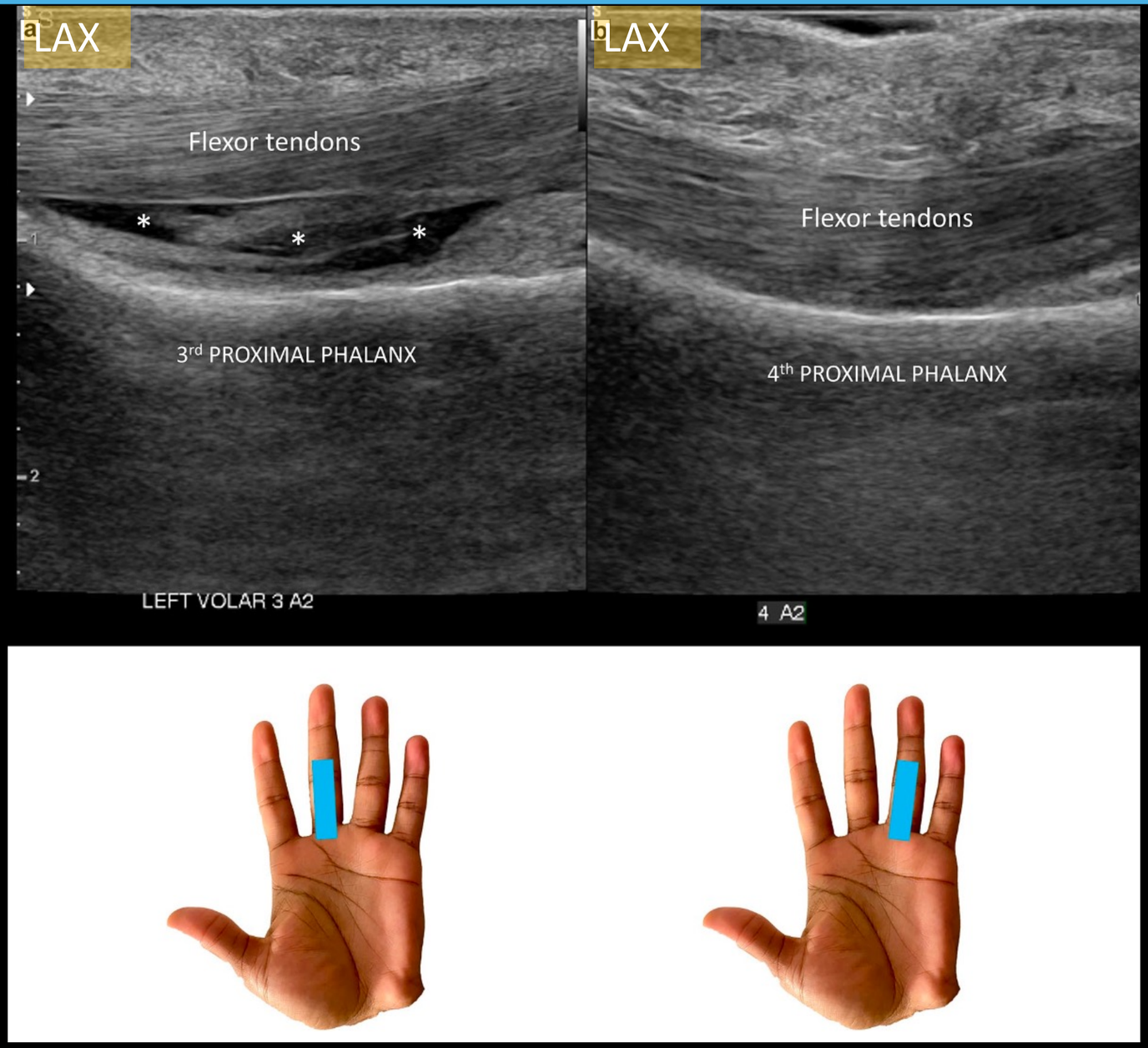
Pathology	Consensus
Pulley injuries	3

Sconfienza et al. 2018



Rosskopf et al. 2021



Nwawka et al. 2023

Forearm, Wrist & Hand MSK Ultrasound Bootcamp

https://bit.ly/sonoskills-wrist-hand

- 2 days
- 75% hands-on
- 6 months eLearning access
- Expert faculty
- 3:1 participant to ultrasound ratio
- Visit beautiful Amsterdam

FOOSH

Fallen onto outstretch hand

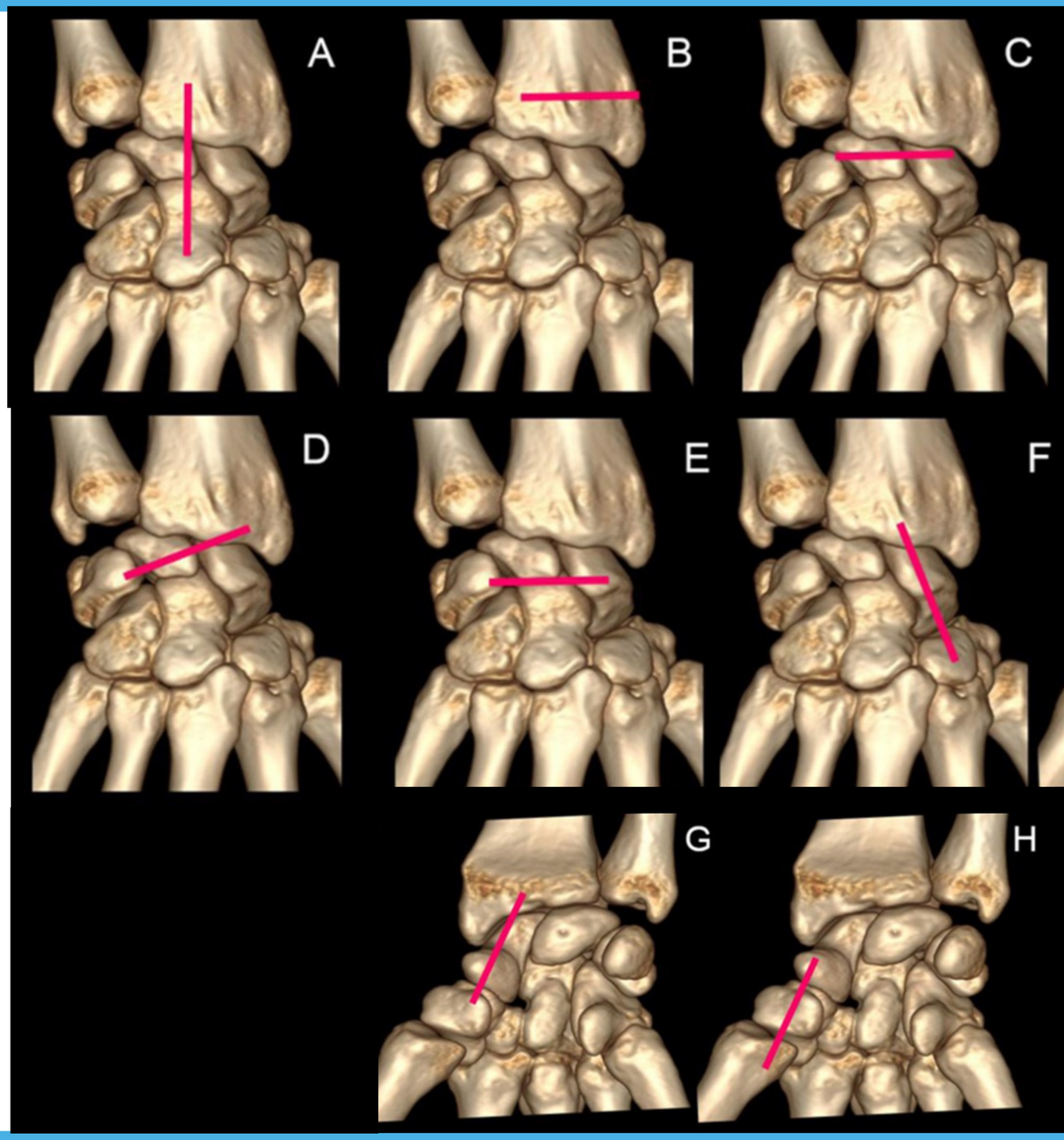
And…..

FLOOSH

Frequently loaded onto outstretched hand

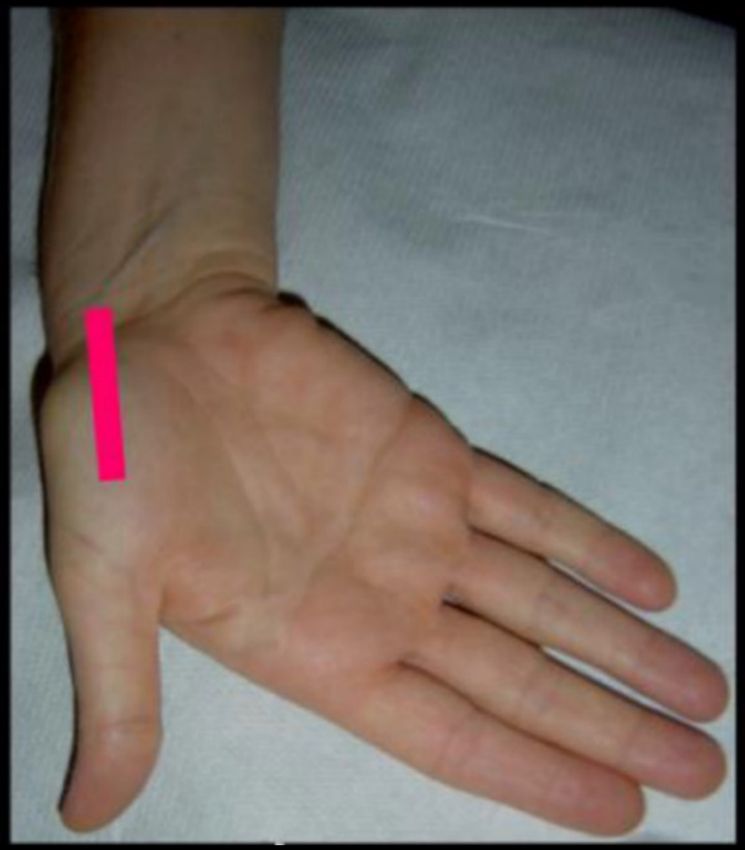
Wrist FOOSH Protocol

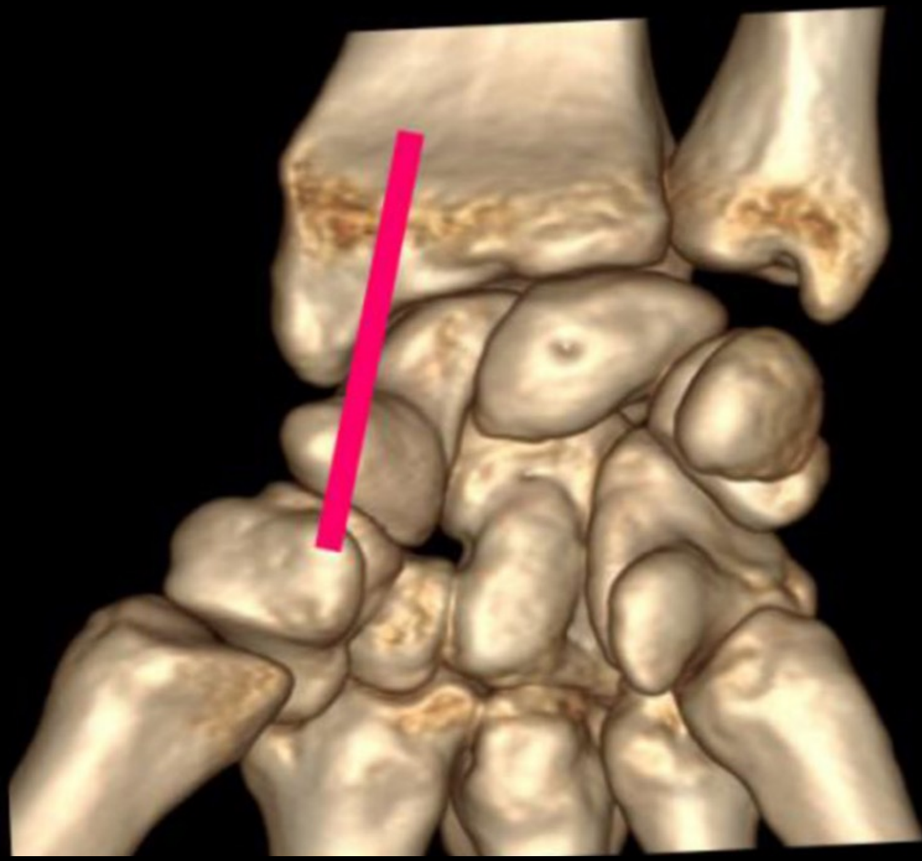
- Step A: carpal bones along the long-axis of the third ray.
- Step B: distal radius (fracture?)
- Step C: dorsal band of the scapholunate ligament
- Step D: radiolunotriquetral ligament (dorsal sling prox. bundle)
- Step E: scapholunotriquetral ligament (dorsal sling dist. bundle)
- Step F: scaphoid dorsal view
- Step G: scaphoid palmar view
- Step H: view palmar aspect of the first ray



Scaphoid fracture

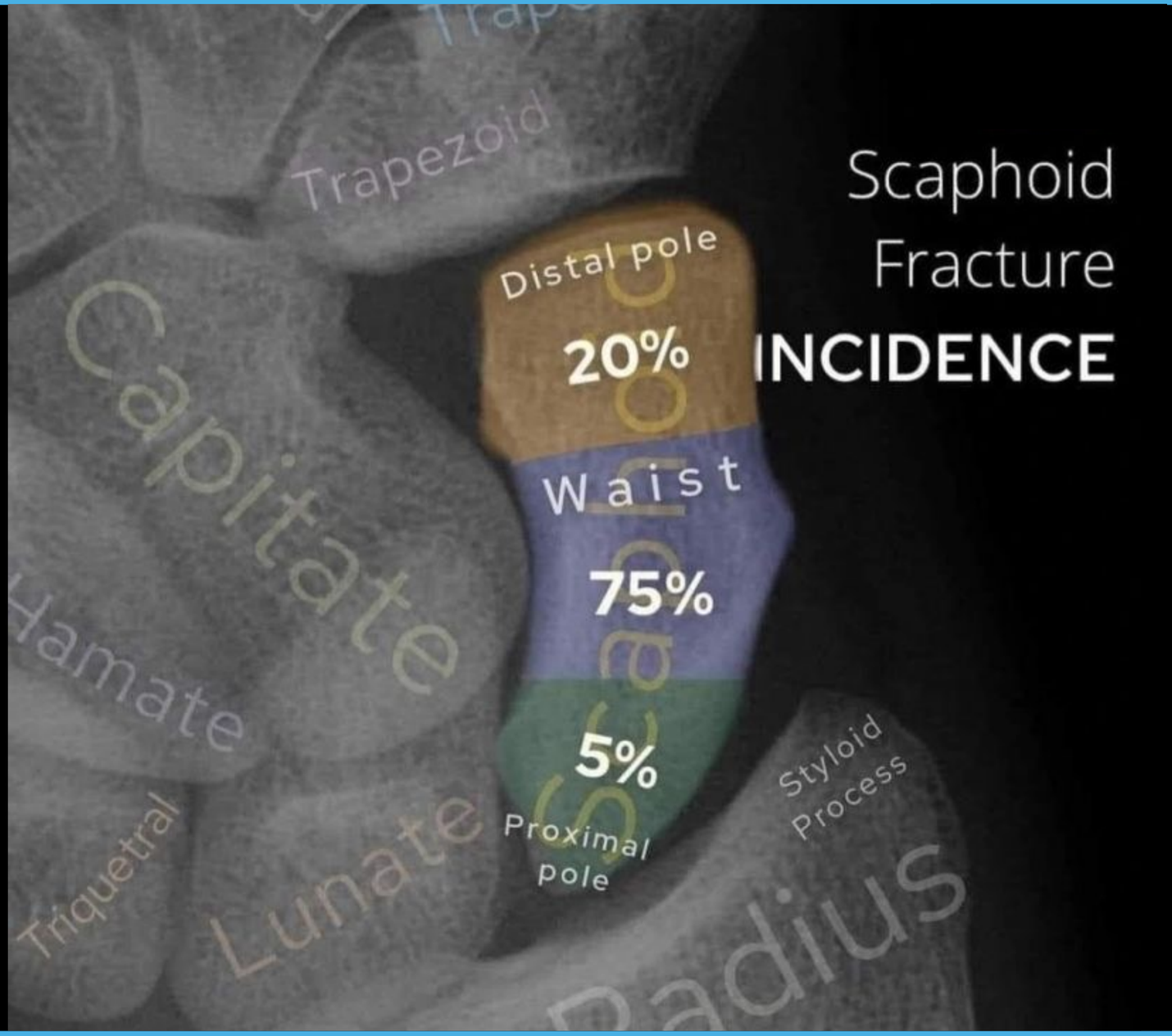
Meyer et al. 2018

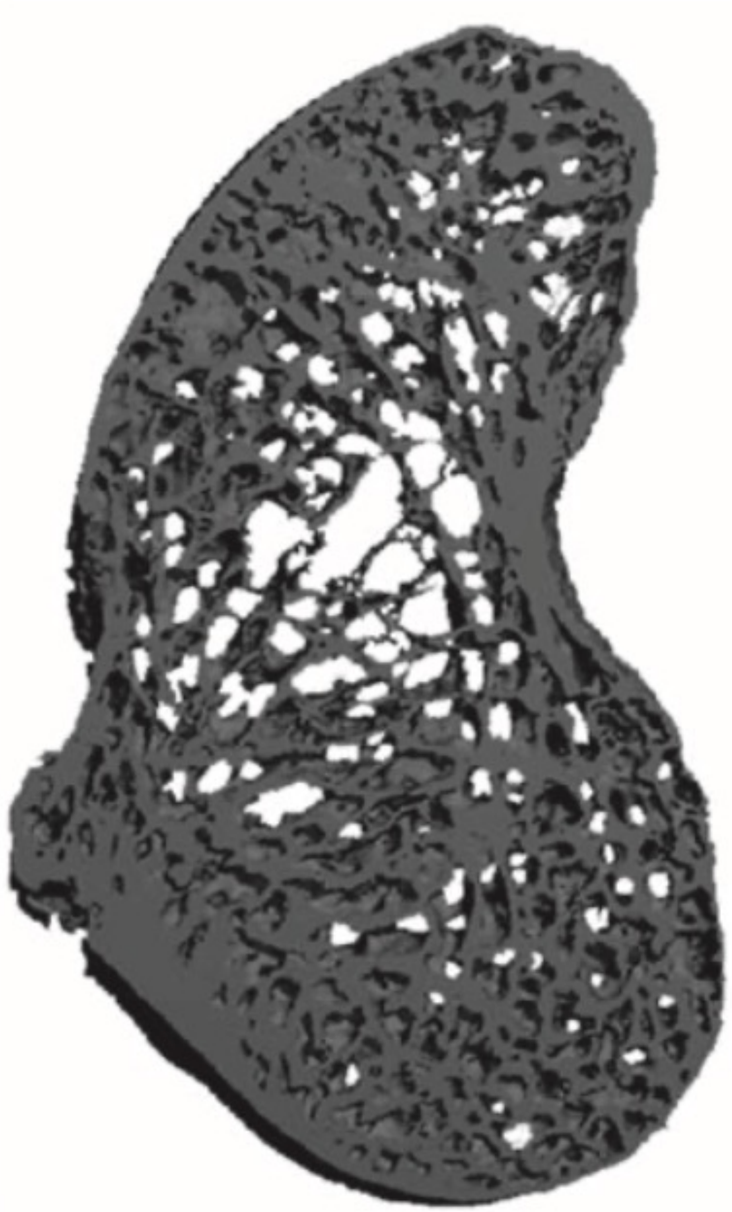




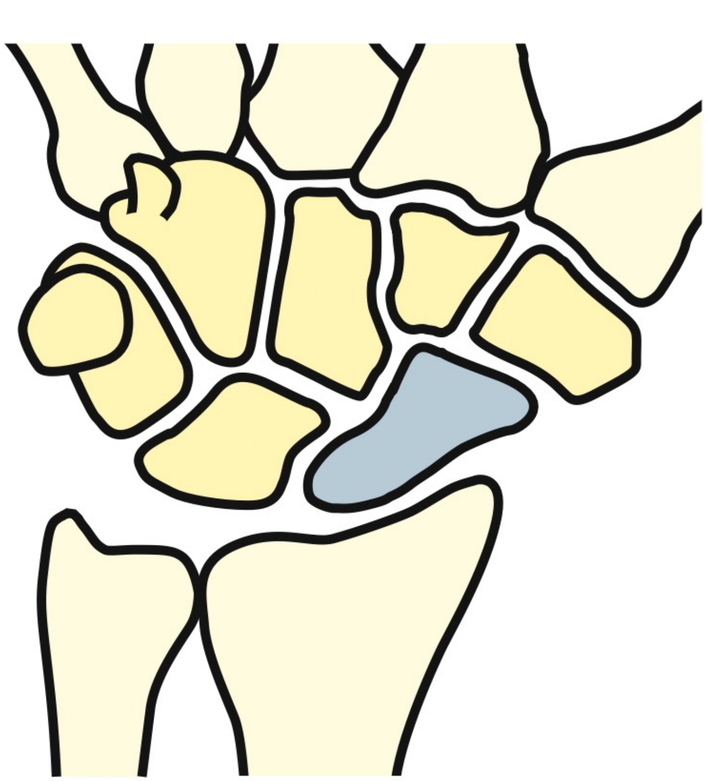
Meyer et al. 2018

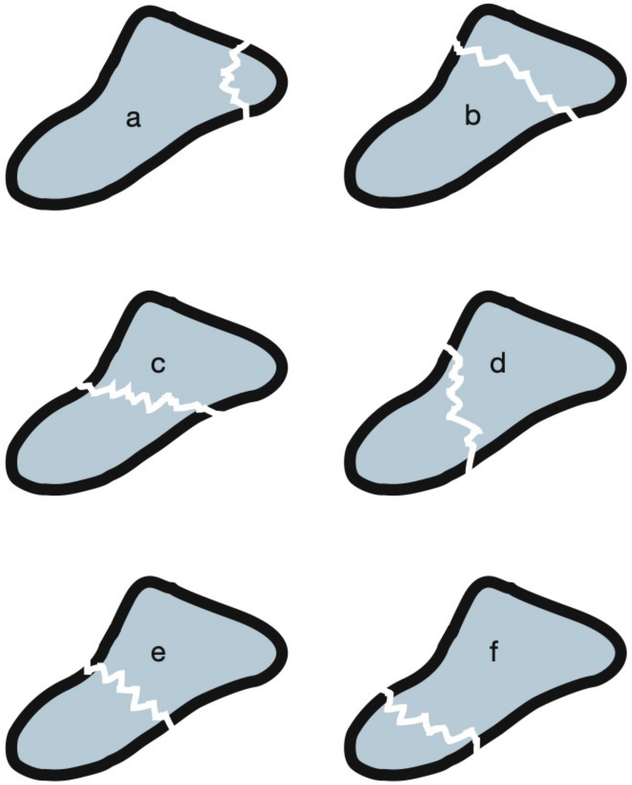

09:41 Tue 9 Jan
100%
L15HD3012112A0183
MSK
MI 0.53
TIS 0.06
TIB 0.12
1,7 cm
SC

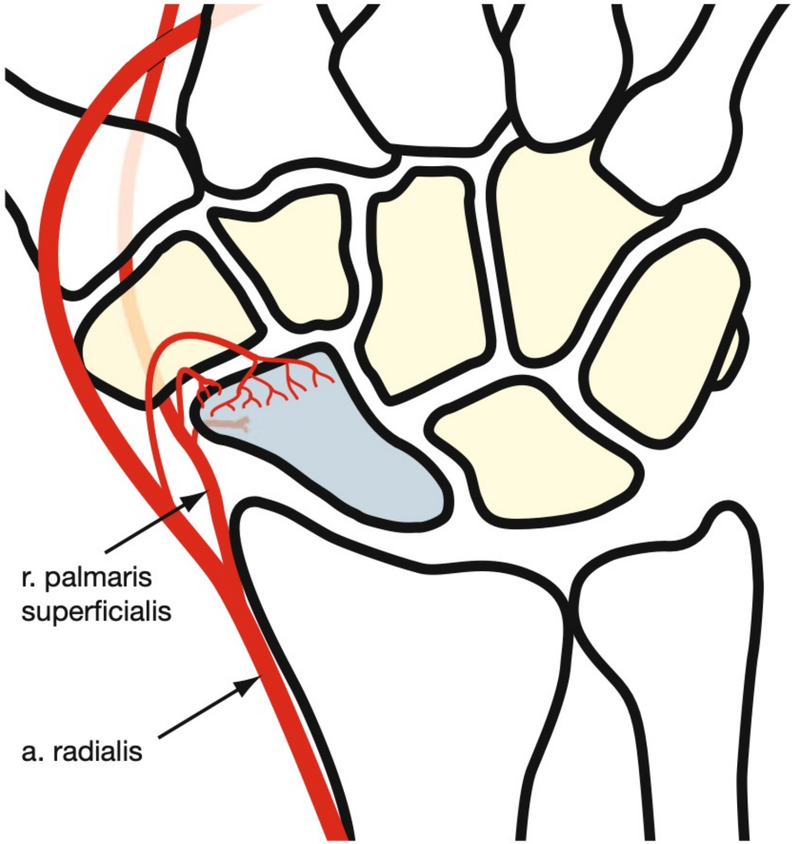




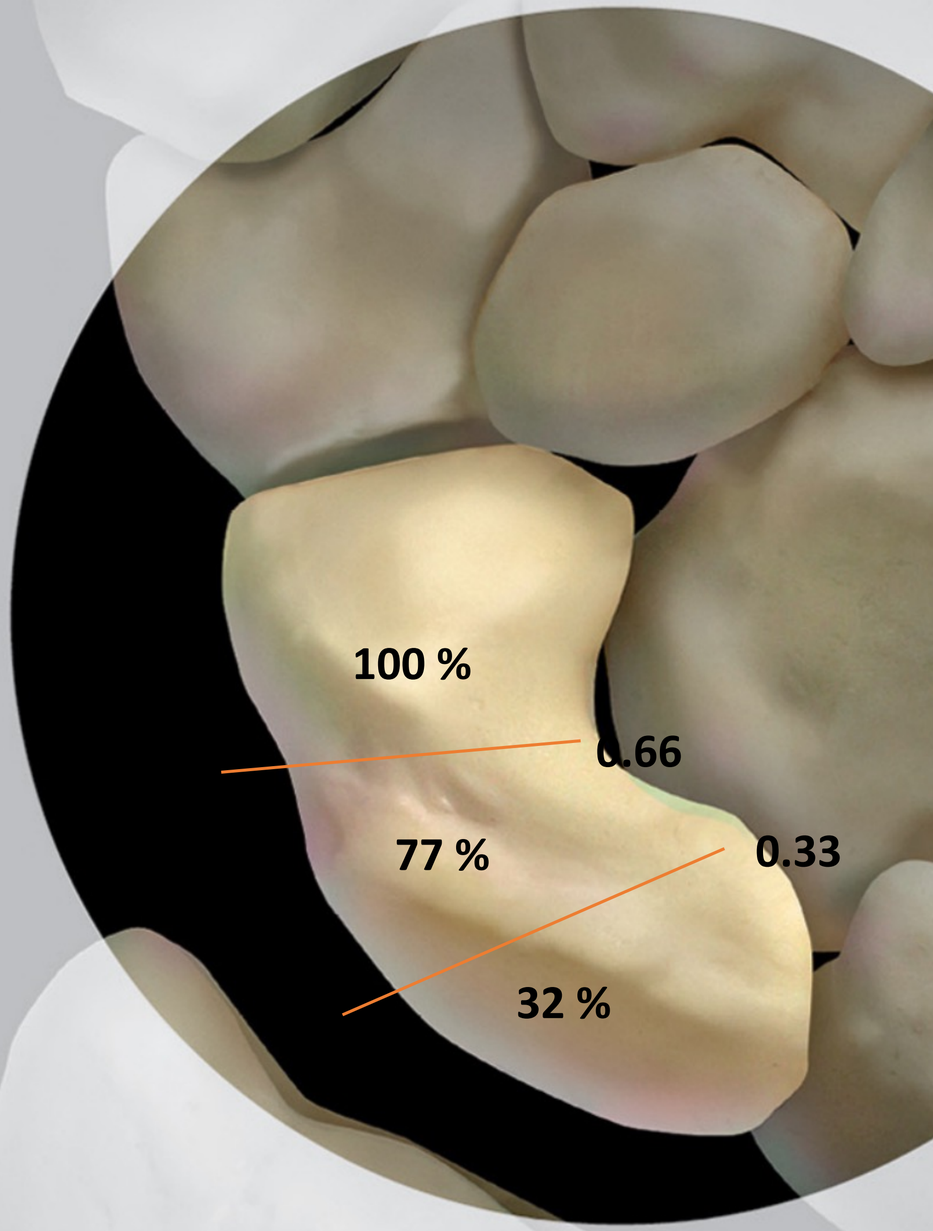
Slutsky et al. 2011







Nugteren et al. 2006



Slutsky et al. 2011

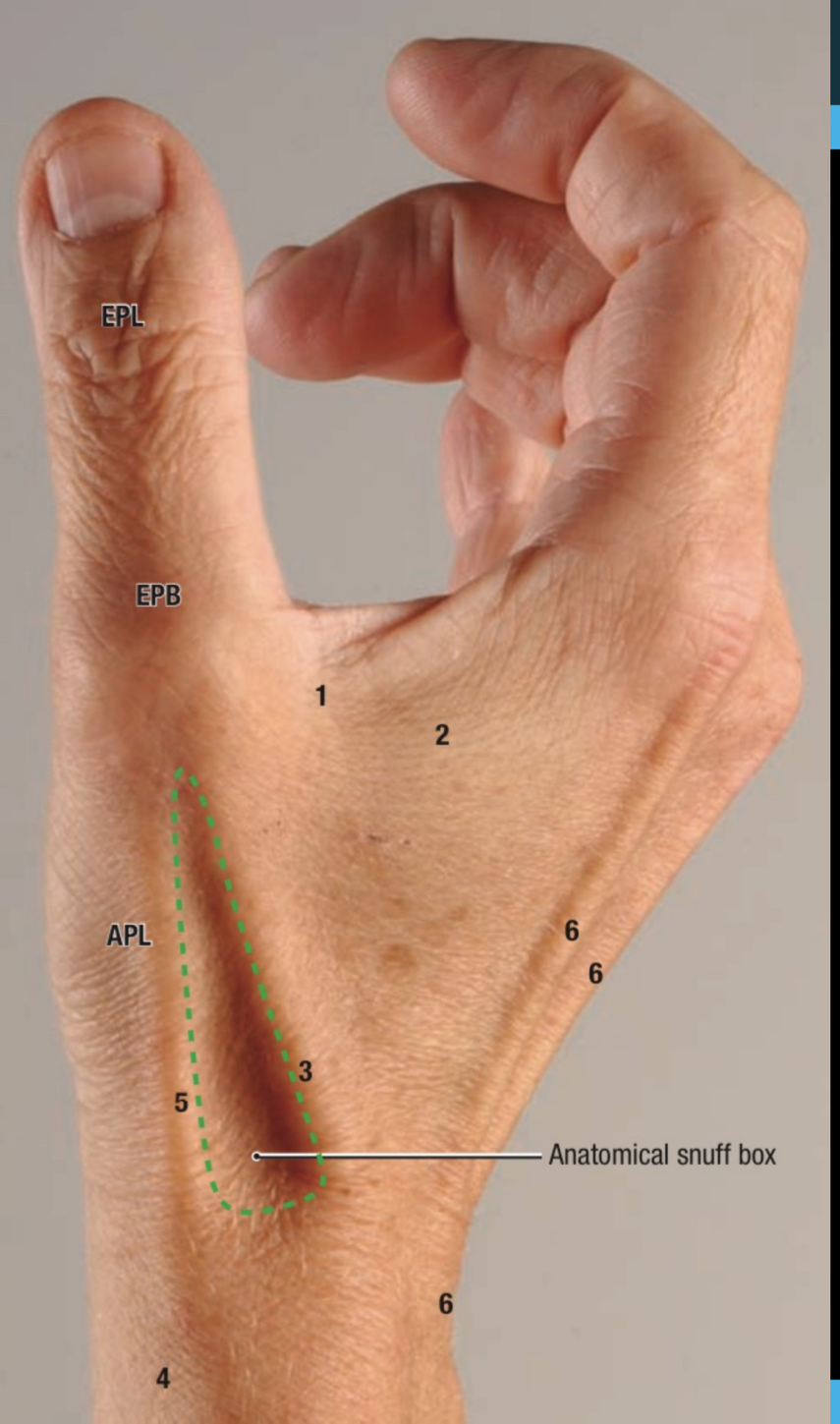
1 Day

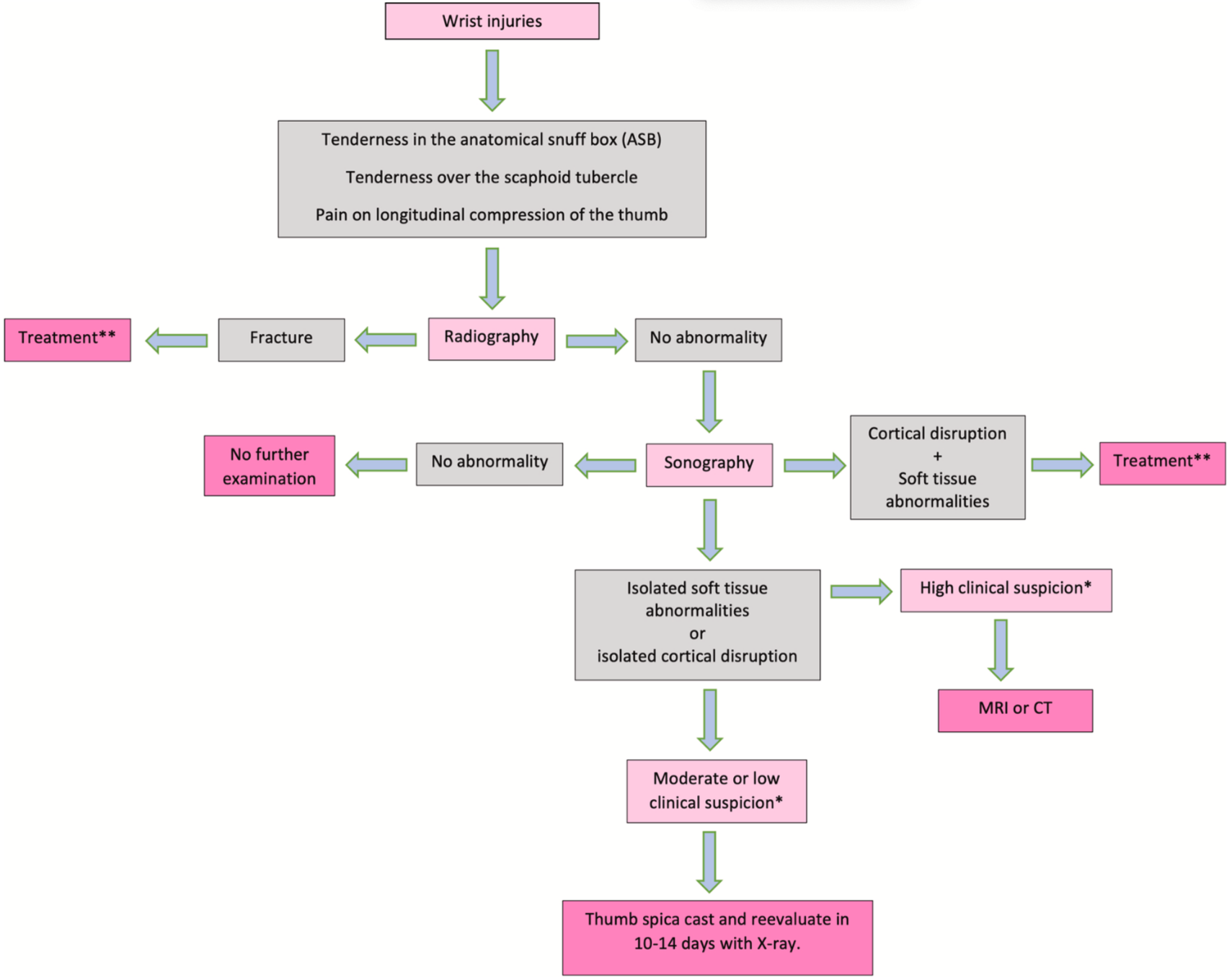
5 Days

2 Weeks

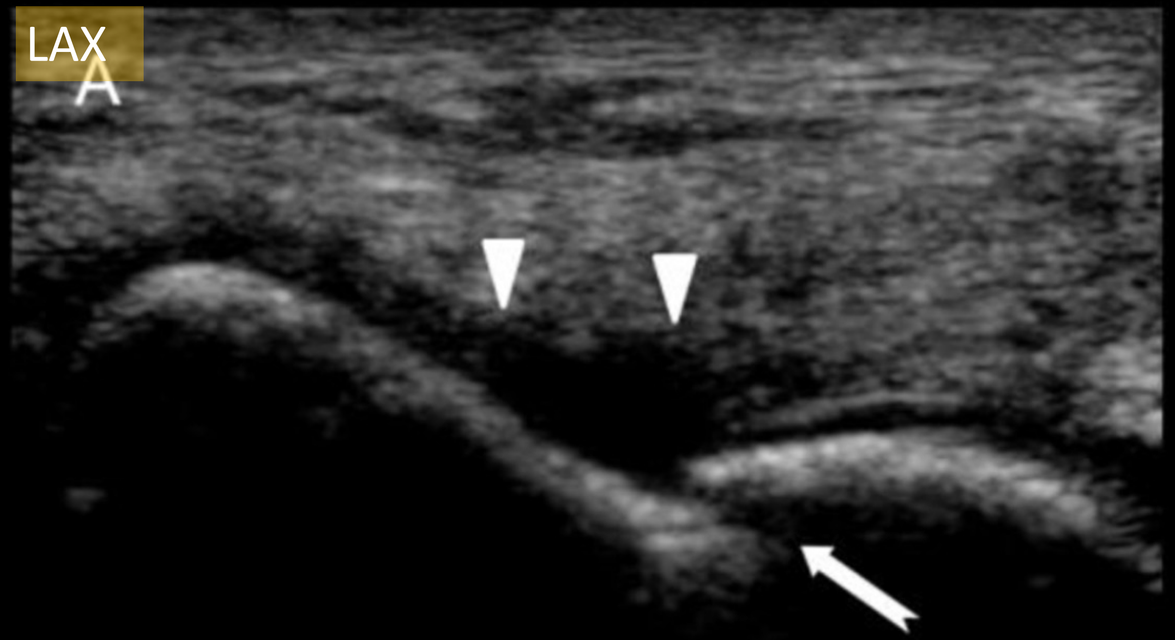
2 Months

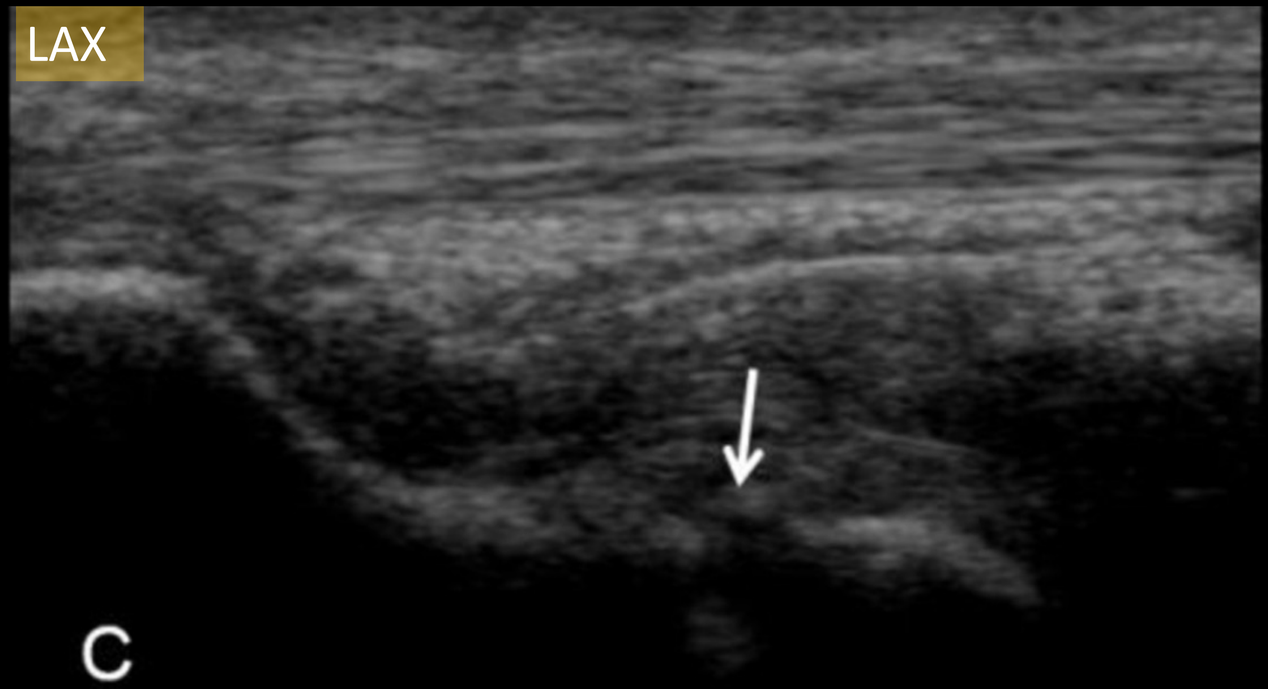
Nugteren et al. 2006


EPL
EPB
1
2
APL
6
6
3
5
Anatomical snuff box
6
4

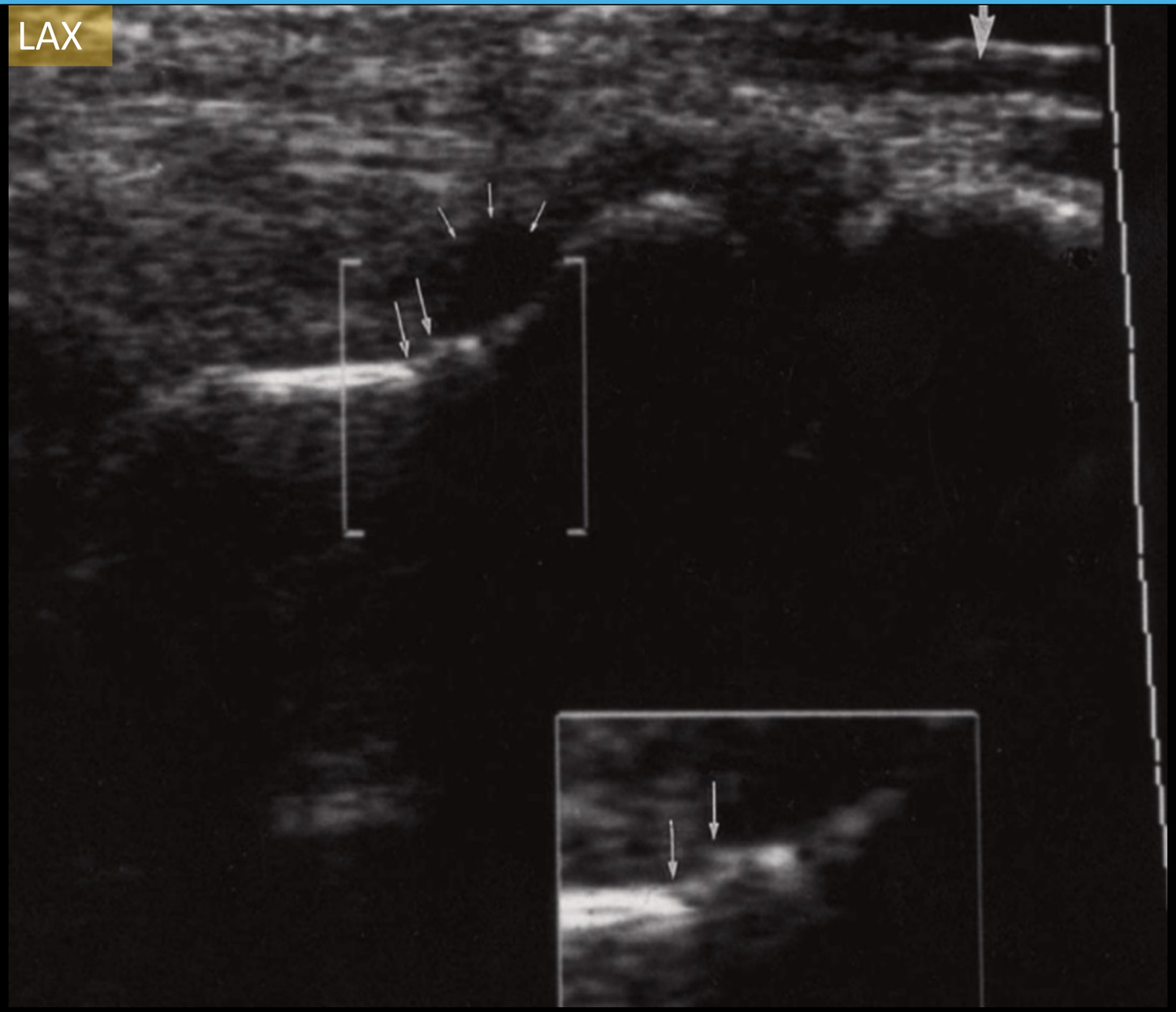


Herrera Ortiz et al. 2021

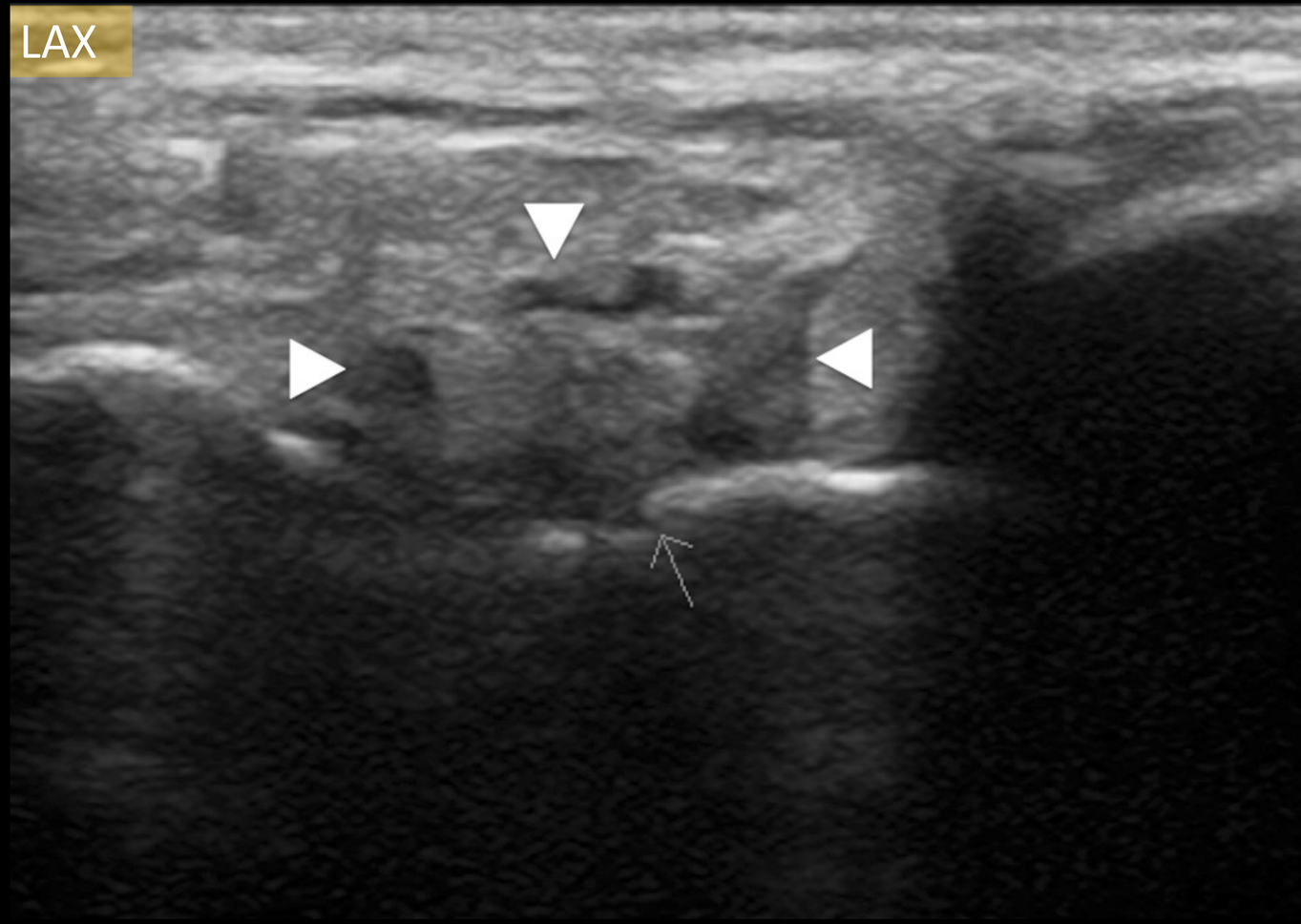




Meyer et al. 2018



Herrera Ortiz et al. 2021



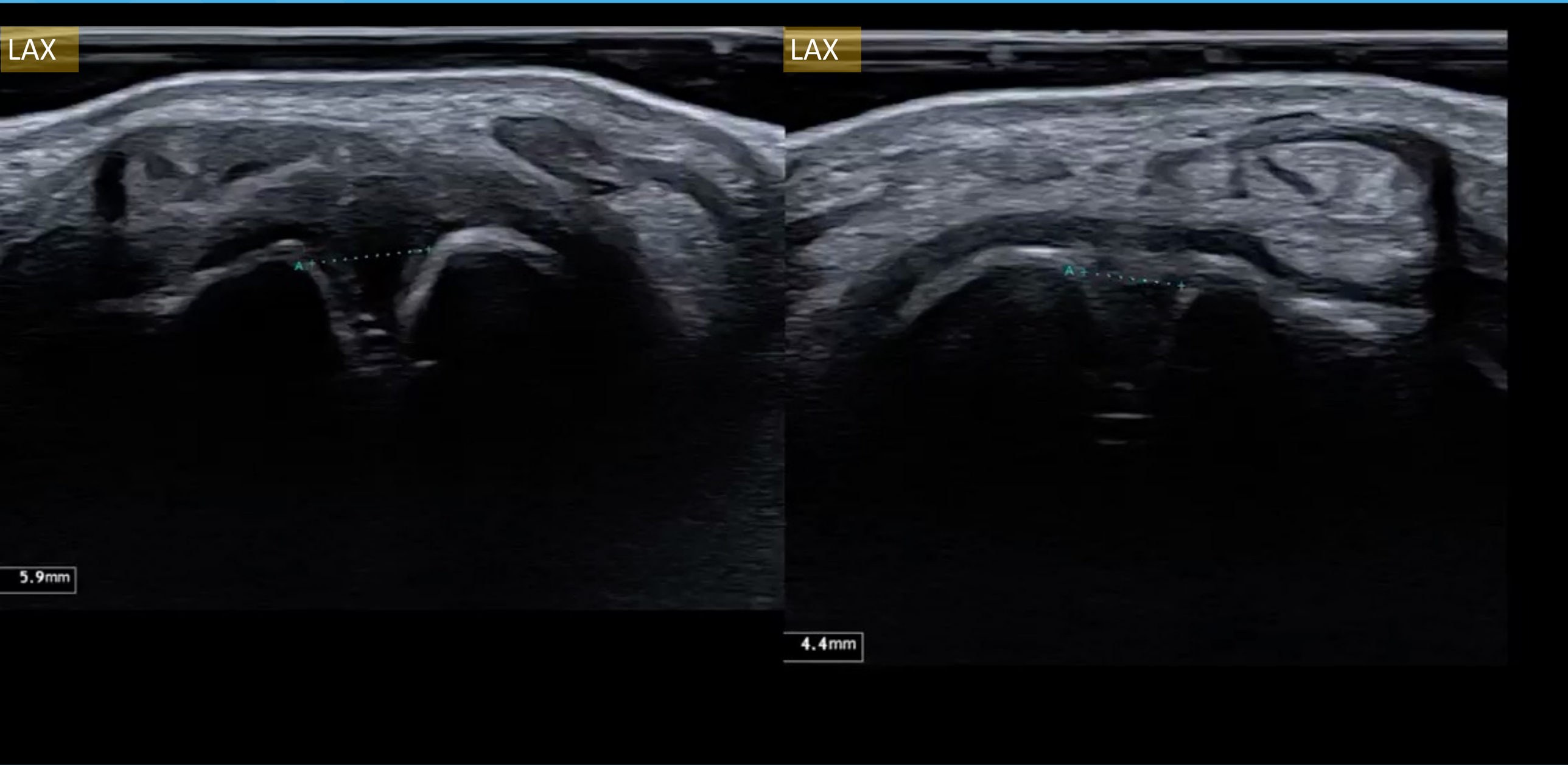
Tessaro et al. 2015

Scapholunate ligament

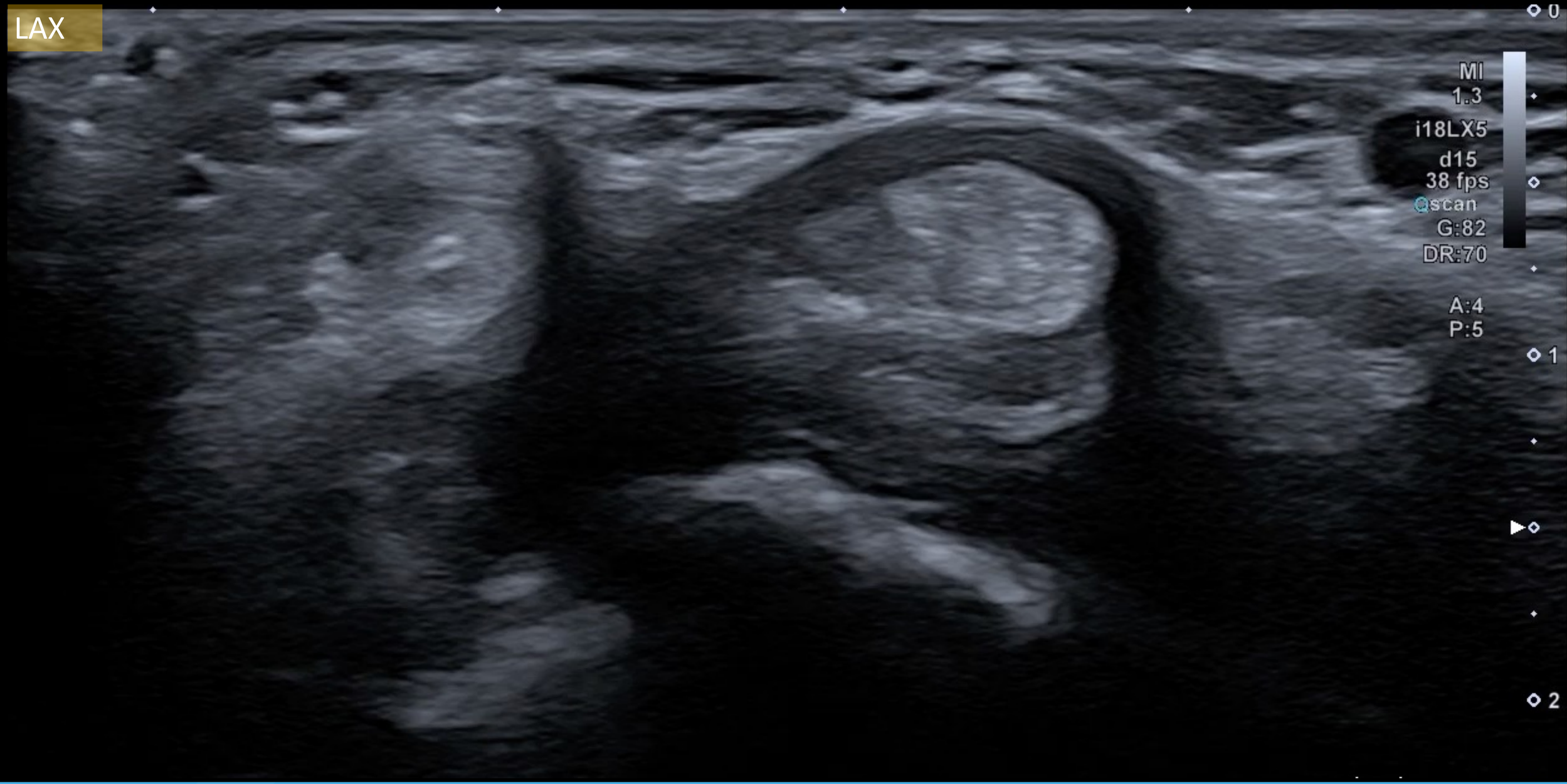
A

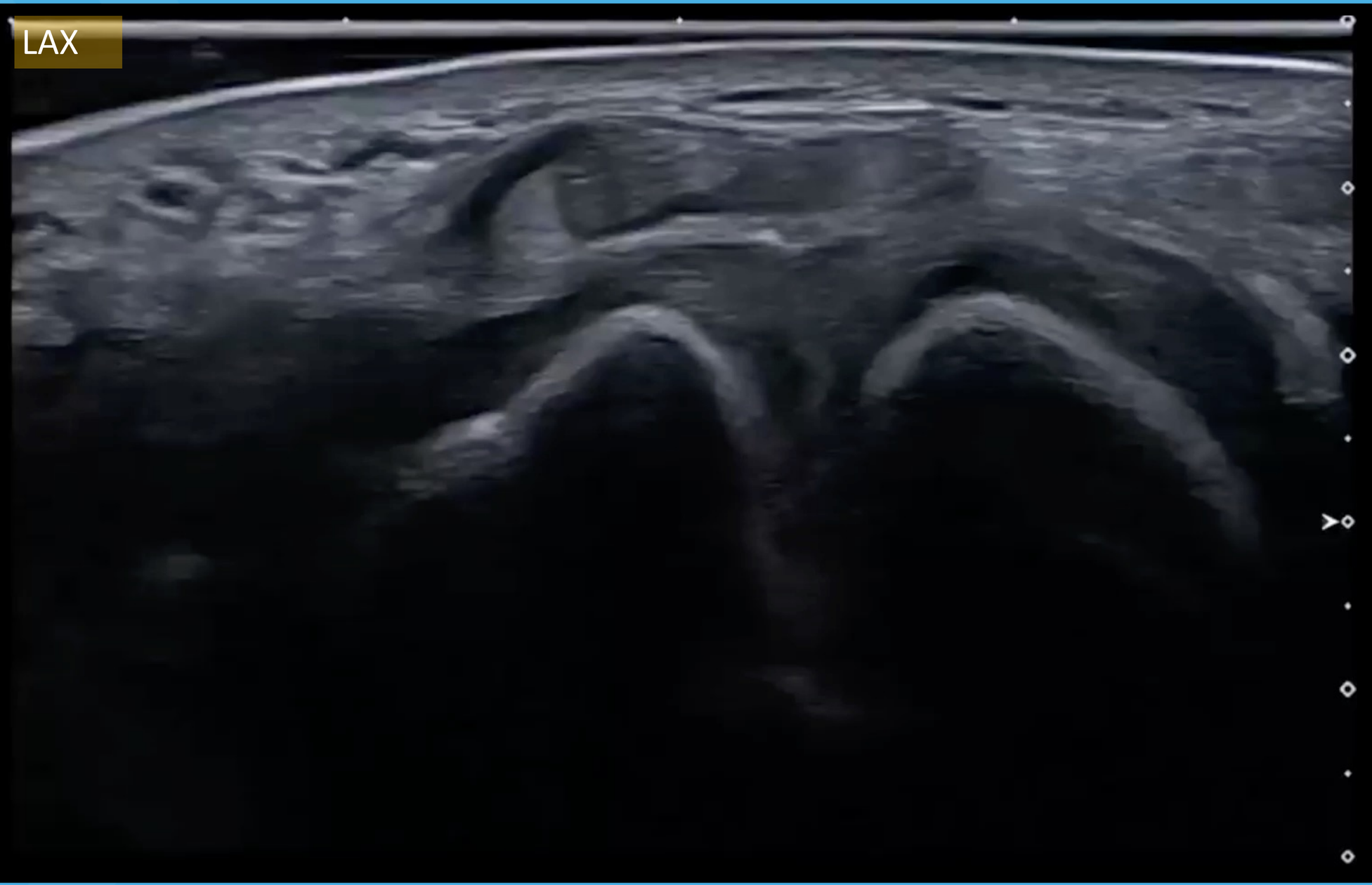
Gitto et al. 2016; Meyer et al. 2018


09:41 Tue 9 Jan
100%
L15HD3012112A0183
MSK
MI 0.53
TIS 0.06
TIB 0.12
1,7 cm
SC



Schek 2024





Kluge et al. 2023

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Live Demonstration

Janaye Smith, CRGS

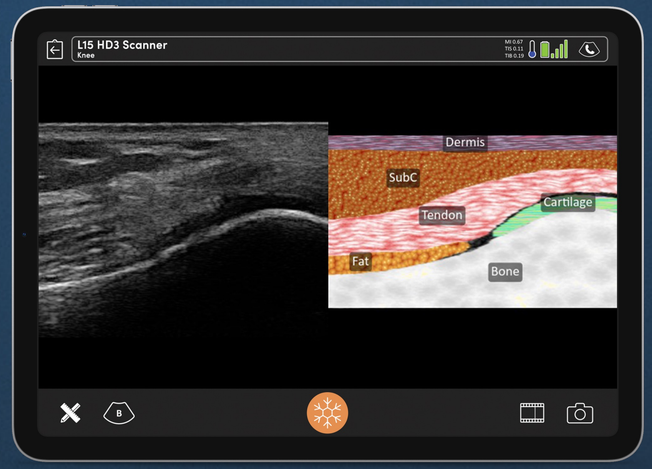
Sonographer

clarius

What additional information would you like?

Interactive Poll

Advancing MSK with Clarius



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Adrienne Sim, BHK, MPT, GradCert CWH

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2PM Pacific | 5PM Eastern

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Questions

Marc Schmitz, MSc

Founder & CEO of Sonoskills

Shelley Guenther, CRGS, CRCS

Sonographer | Clinical Marketing Manager

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Thank you!