



Sonography and podiatry

Image interpretation

By : Brendan Goode – May 2021



Topics to be covered

- Sonographic terminology
- Case studies

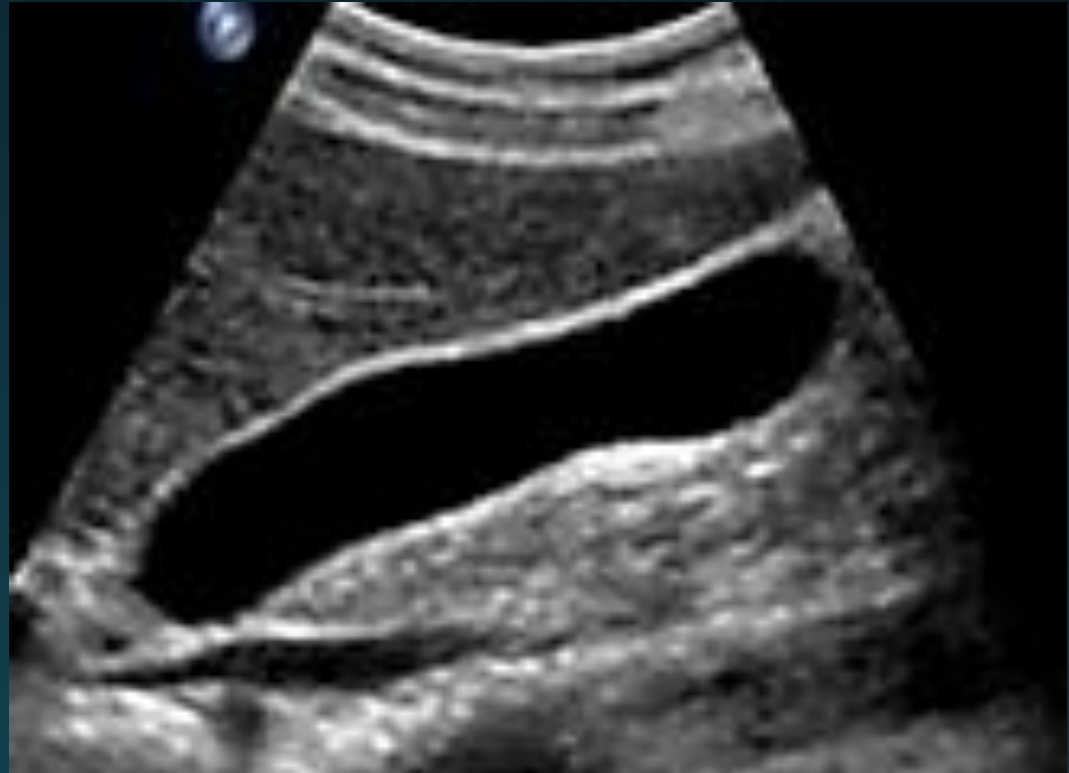


Sonographic terminology

- Anechoic
- Echogenic
- Hypoechoic
- Hyperechoic
- Tendinopathy
- Tendinosis
- Well defined
- Fibrillar
- Grade 1, 2, 3
- Vascular

Anechoic

- Without echoes



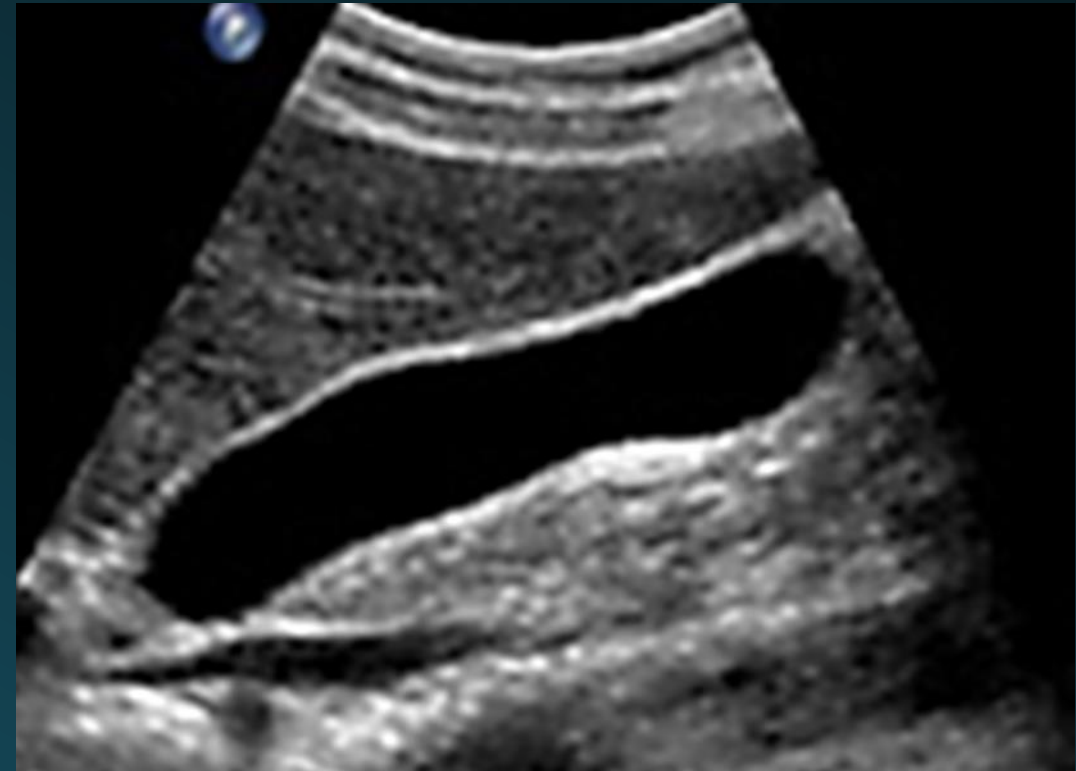
Echogenic

- A relative term meaning the structure reflects sound such that we can see it.
- Term does not indicate brightness of displayed structure rather that it is apparent on the display
- Term is often used incorrectly to indicate a bright or hyperechoic object.



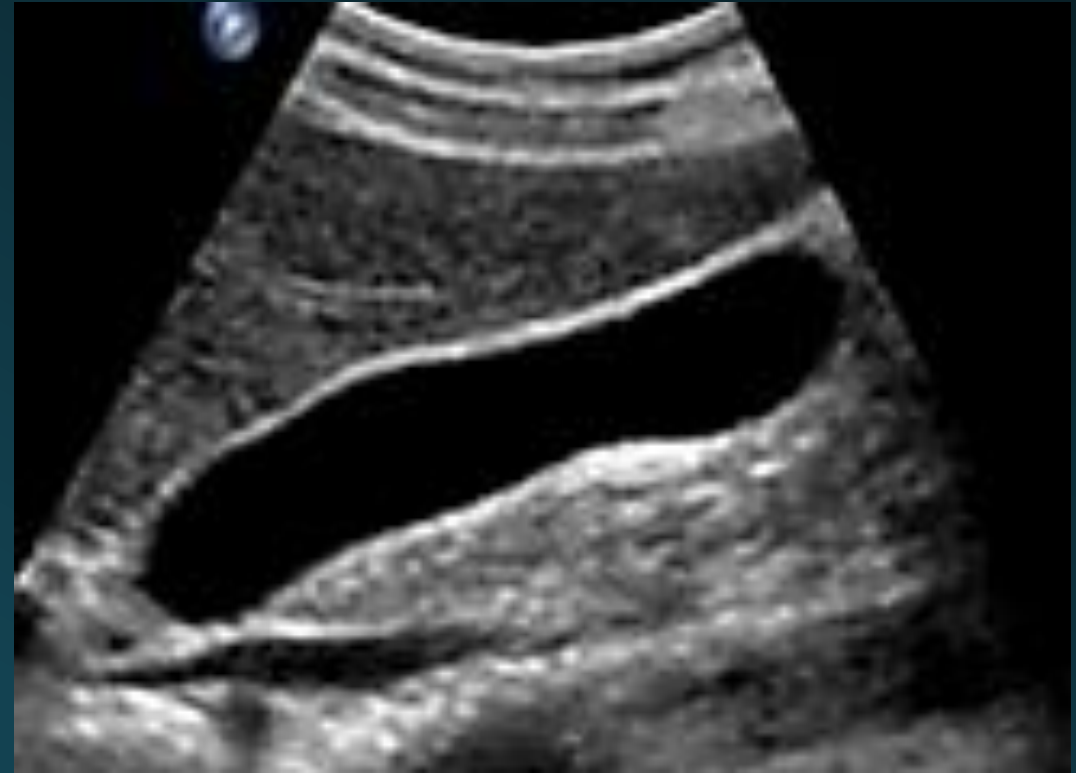
Hypoechoic

- In ultrasonography, pertaining to material that produces echoes of lower amplitude or density than the surrounding medium



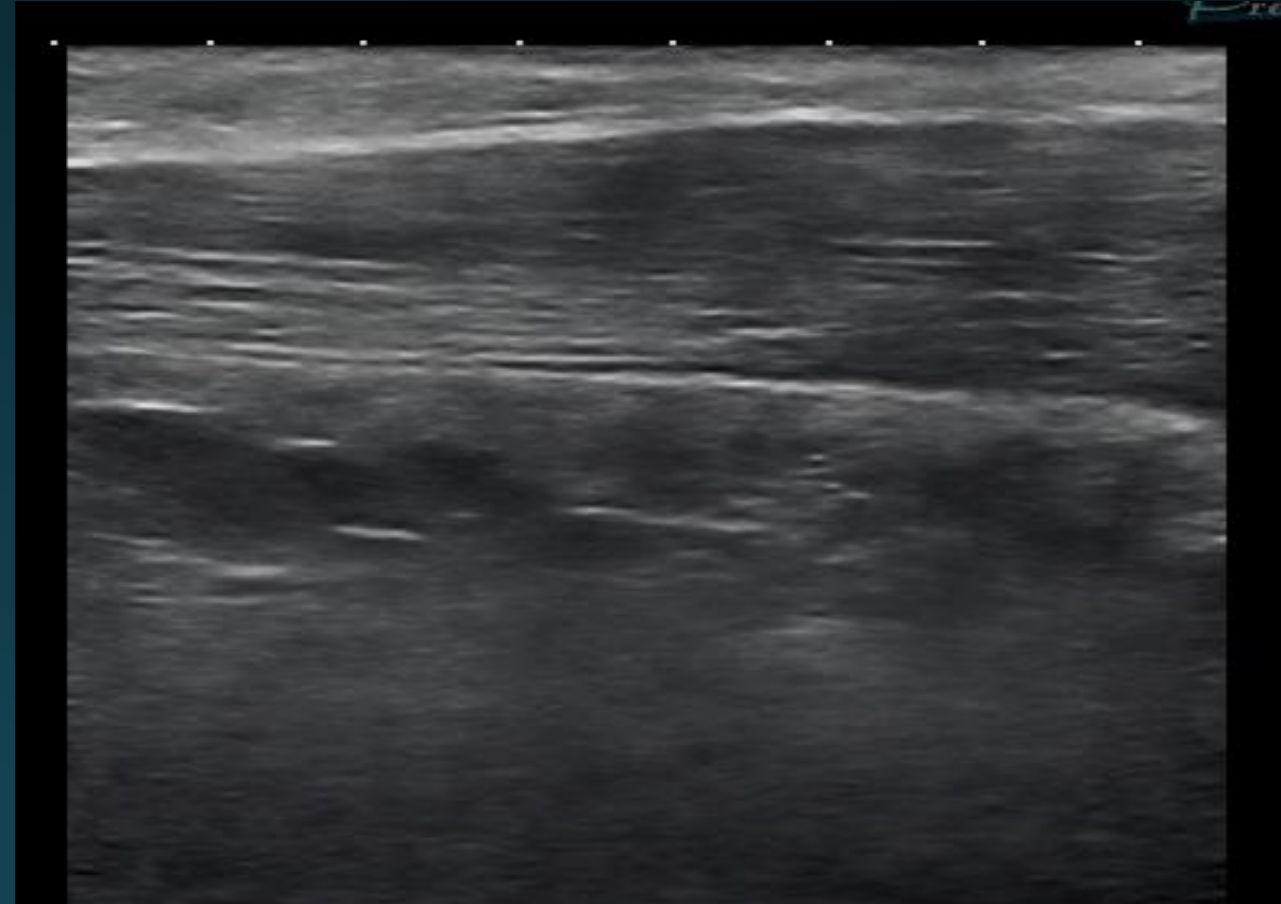
Hyperechoic

- Hyperechoic - In ultrasonography, pertaining to material that produces echoes of higher amplitude or density than the surrounding medium



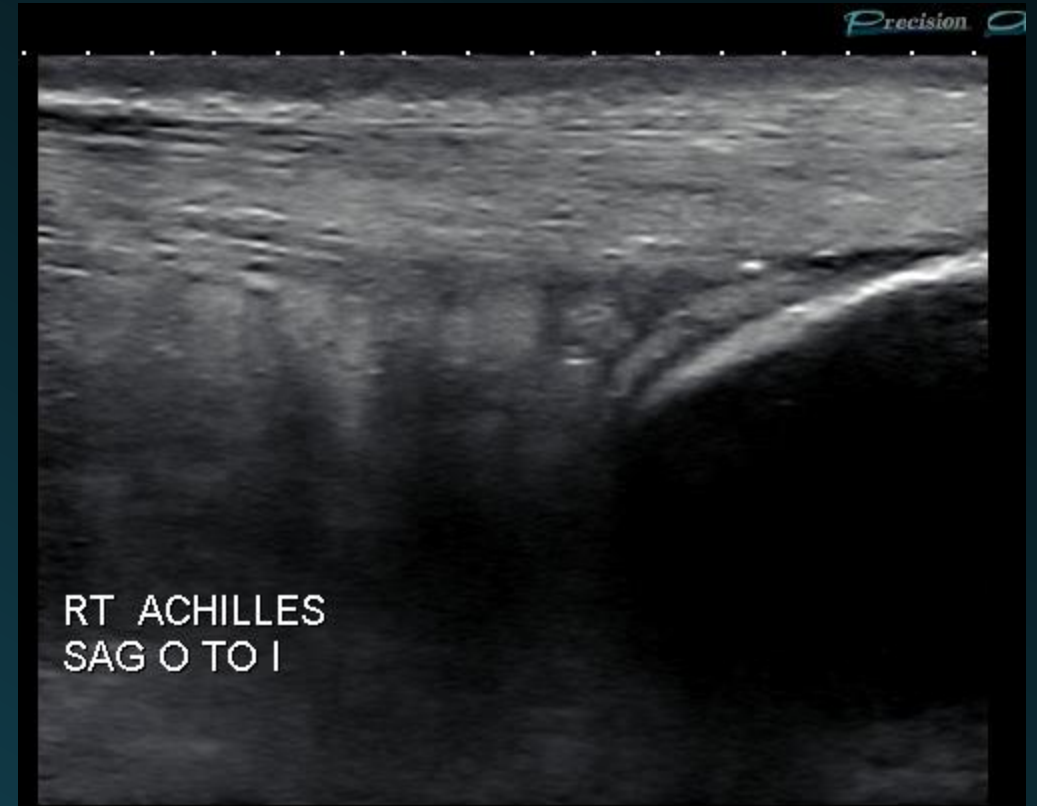
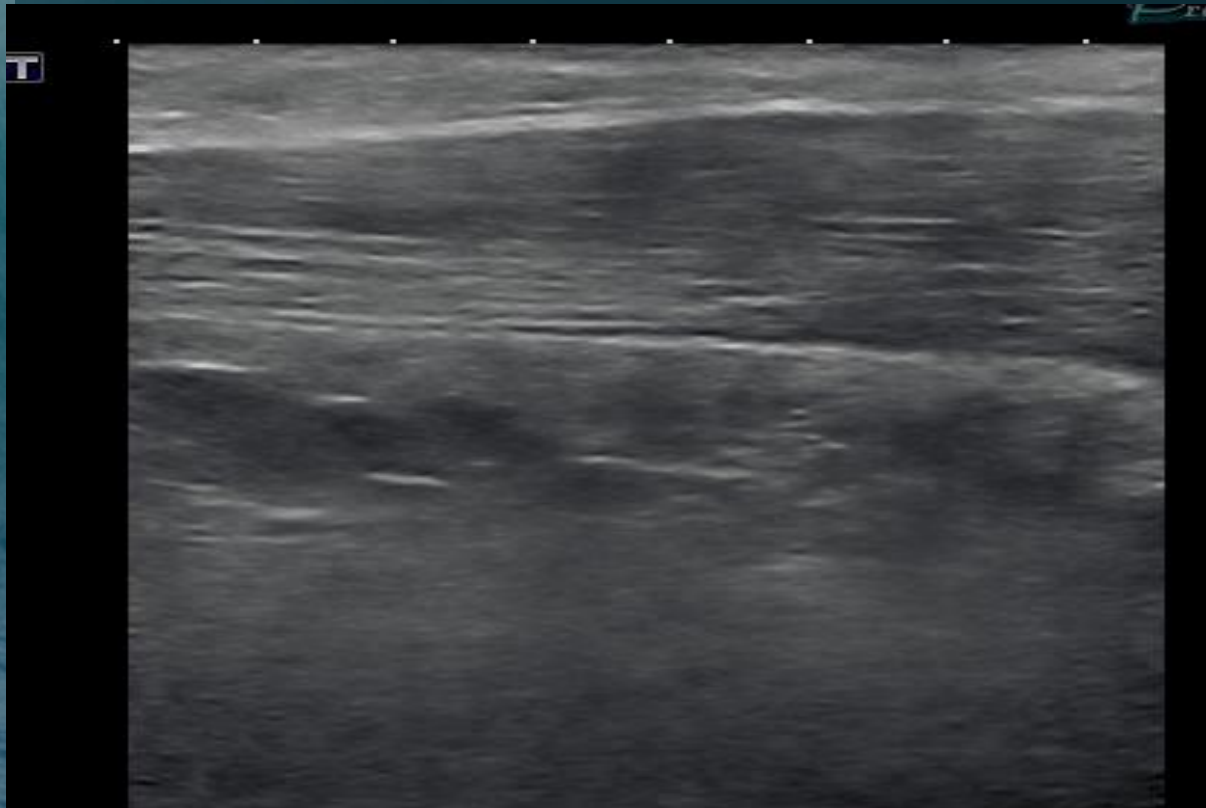
Tendinopathy

- Pertaining to a disease or disorder
- Meaning of the term does vary slightly depending upon discipline, in sonography we use the term when there is a combination of pain and disease associated with the tendon.



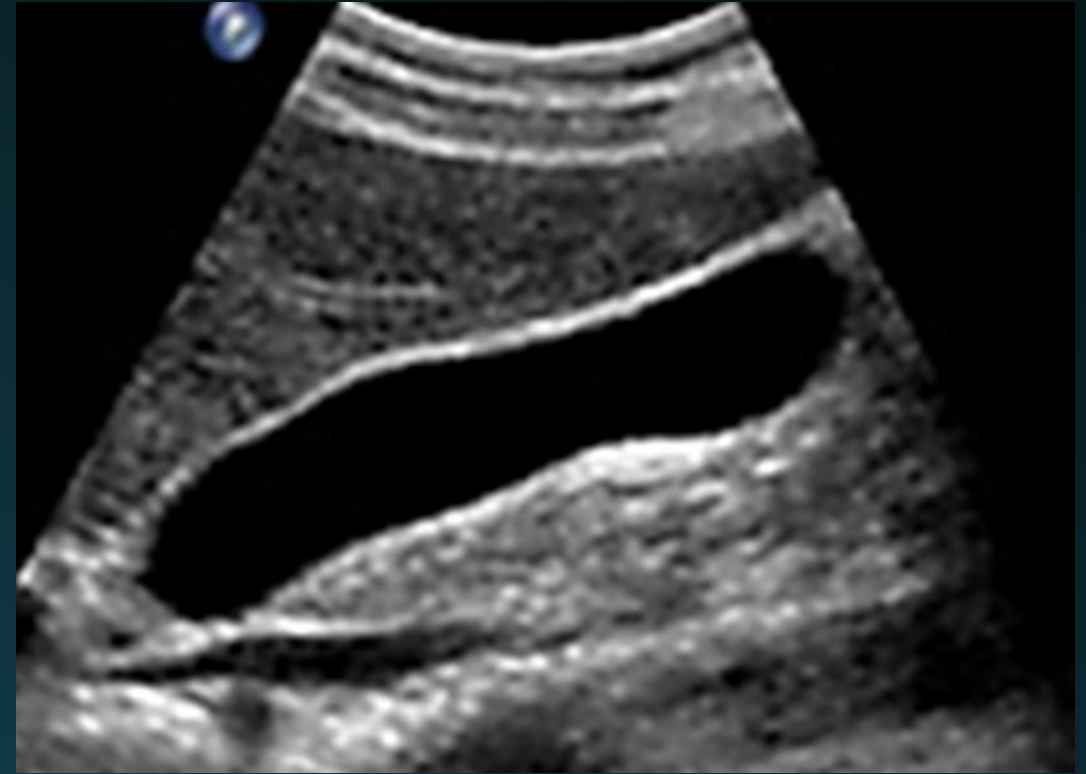
Tendinosis

- Abnormal or diseased tendon



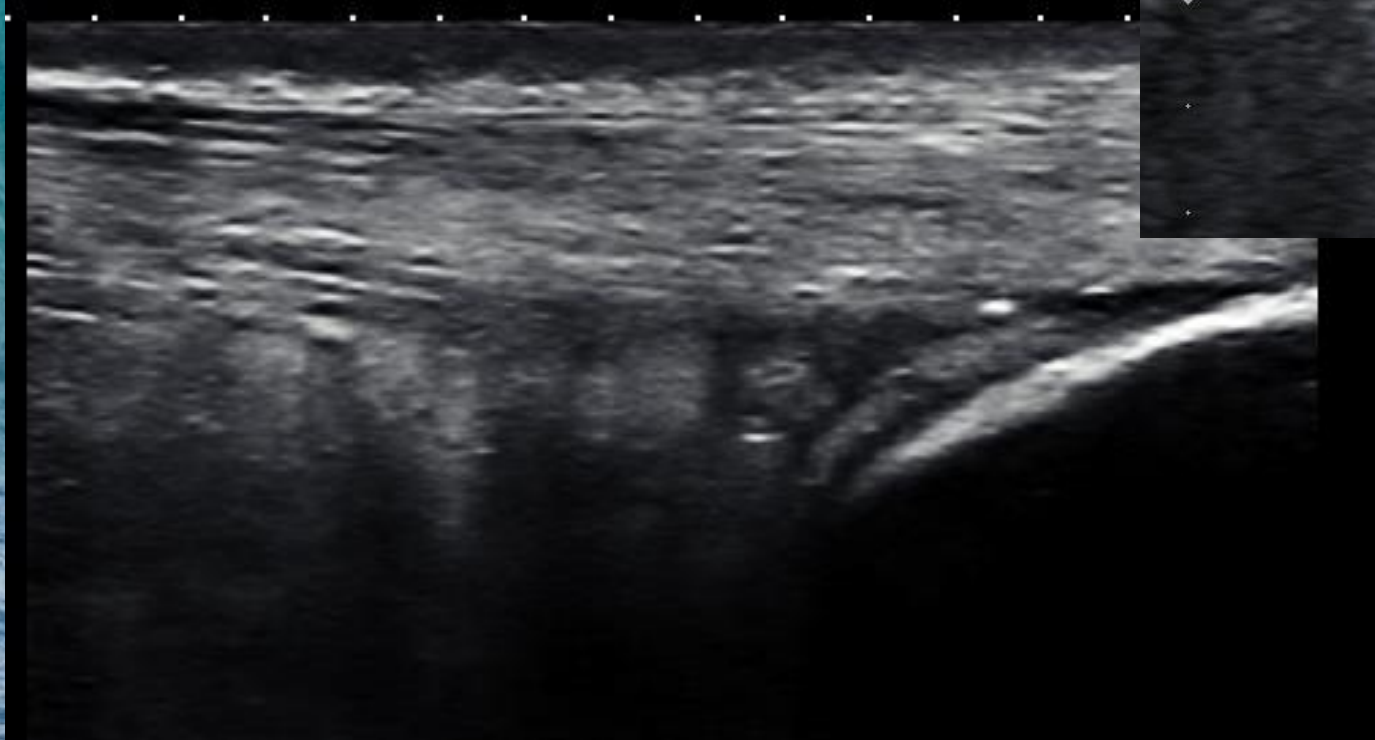
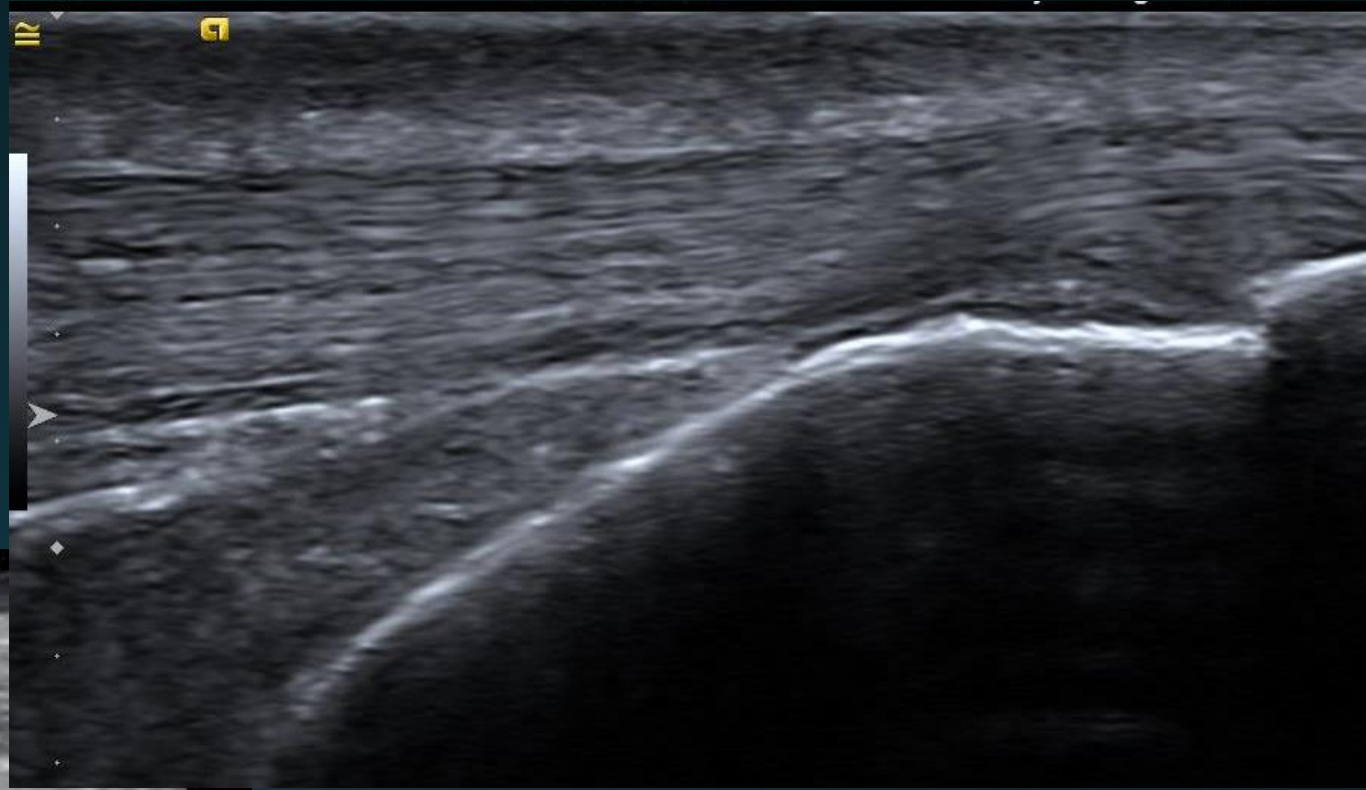
Well defined

- Term used when the margins of a structure are clearly seen.

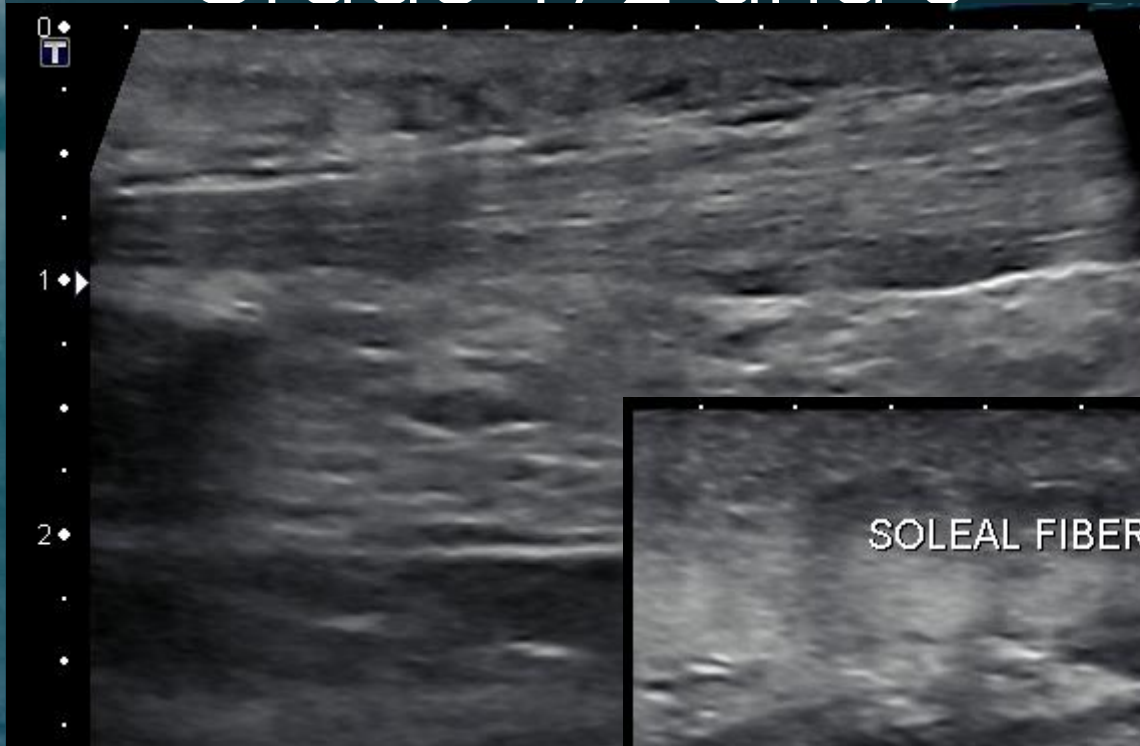


Fibrillar

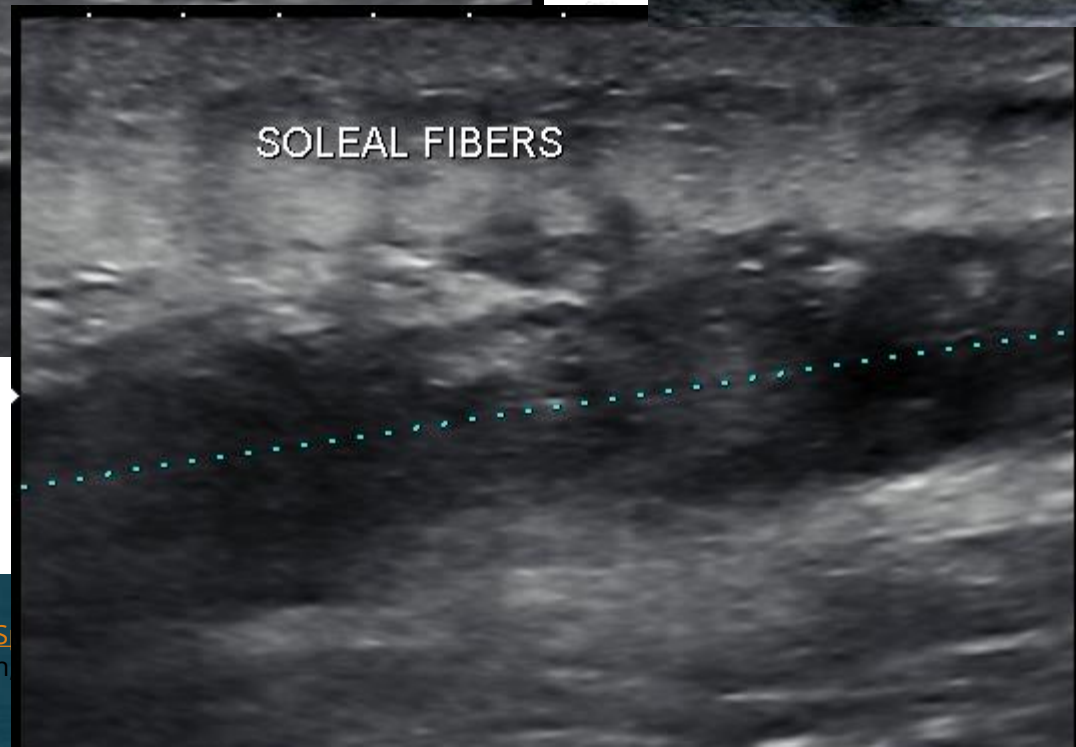
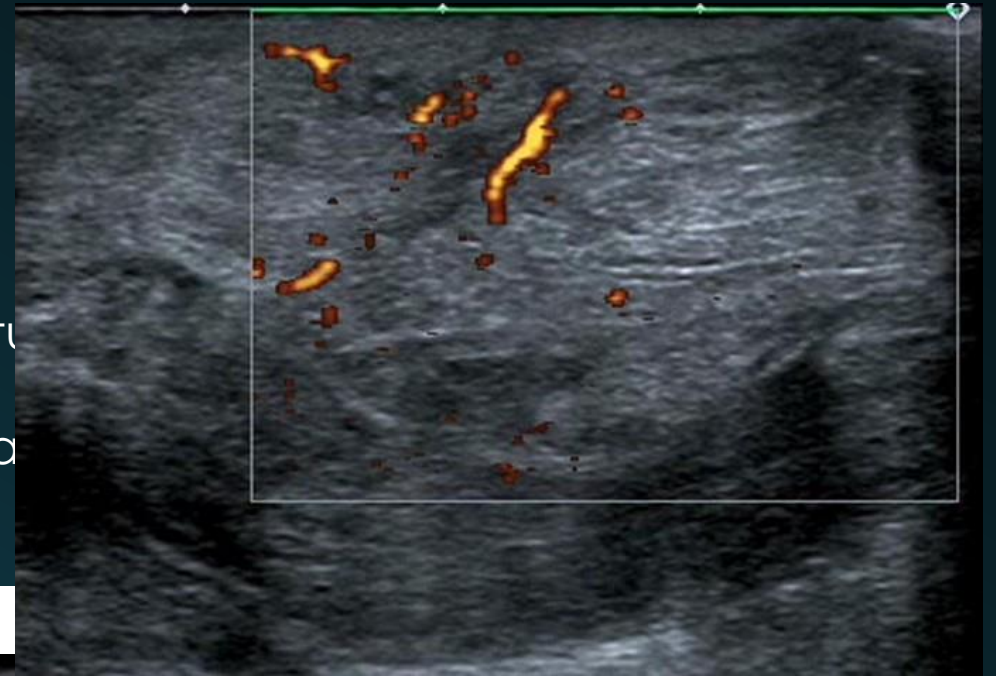
- A small filament or fiber



Grade 1, 2 and 3



structure
artio



SOLEAL FIBERS

Vascular

- Indicates the presence of color on the ultrasound display denoting movement.
- We often make note of the color flow if it is atypical



Case study 1

- 50-year-old female with 10 days of acute pain in the posterior calf following walking rapidly up a hill carrying a heavy object.

SOLEAL FIBERS

LAT GASTROC FIBERS

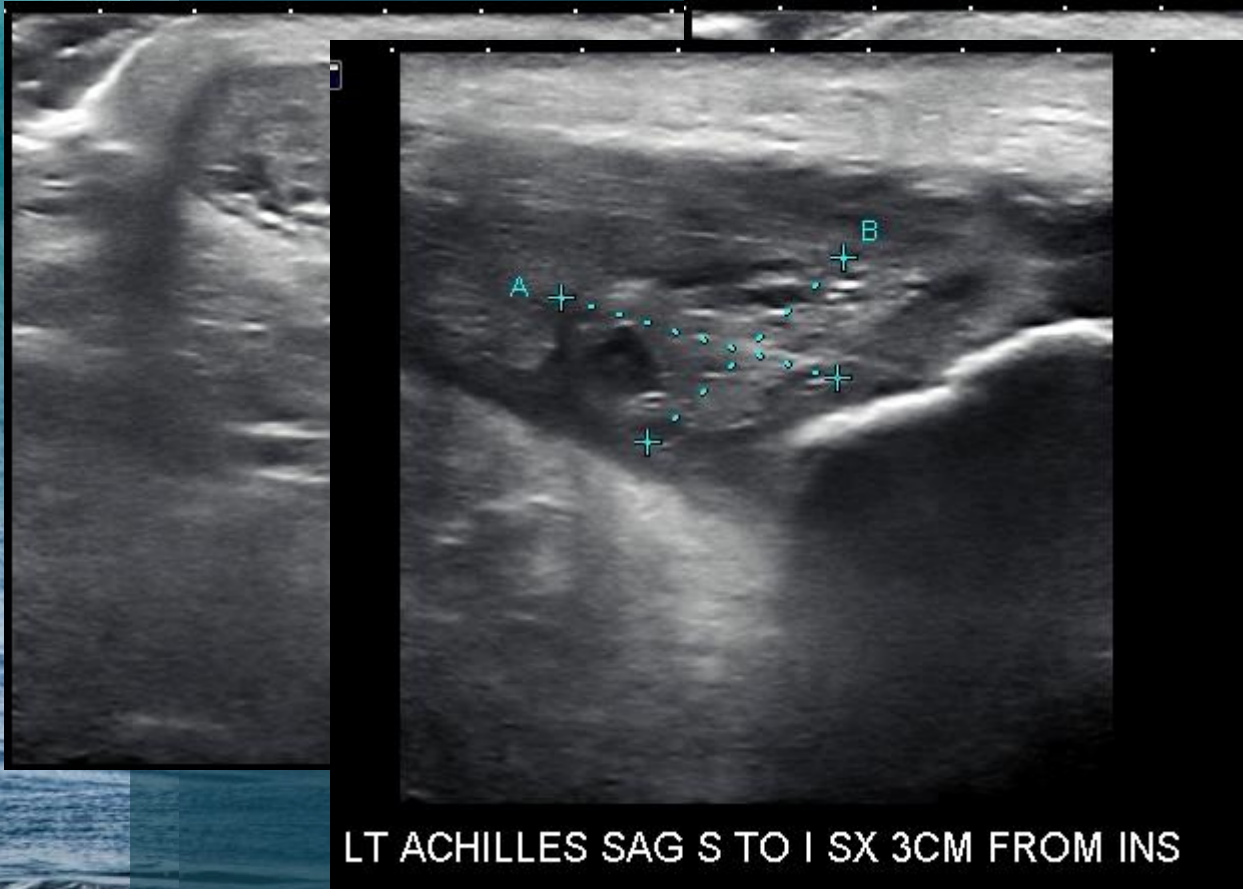
SAG LT /

SAG LT MID ACHILLES APPROX 10 CM FROM INSERTION

SAG RT MID ACHILLES

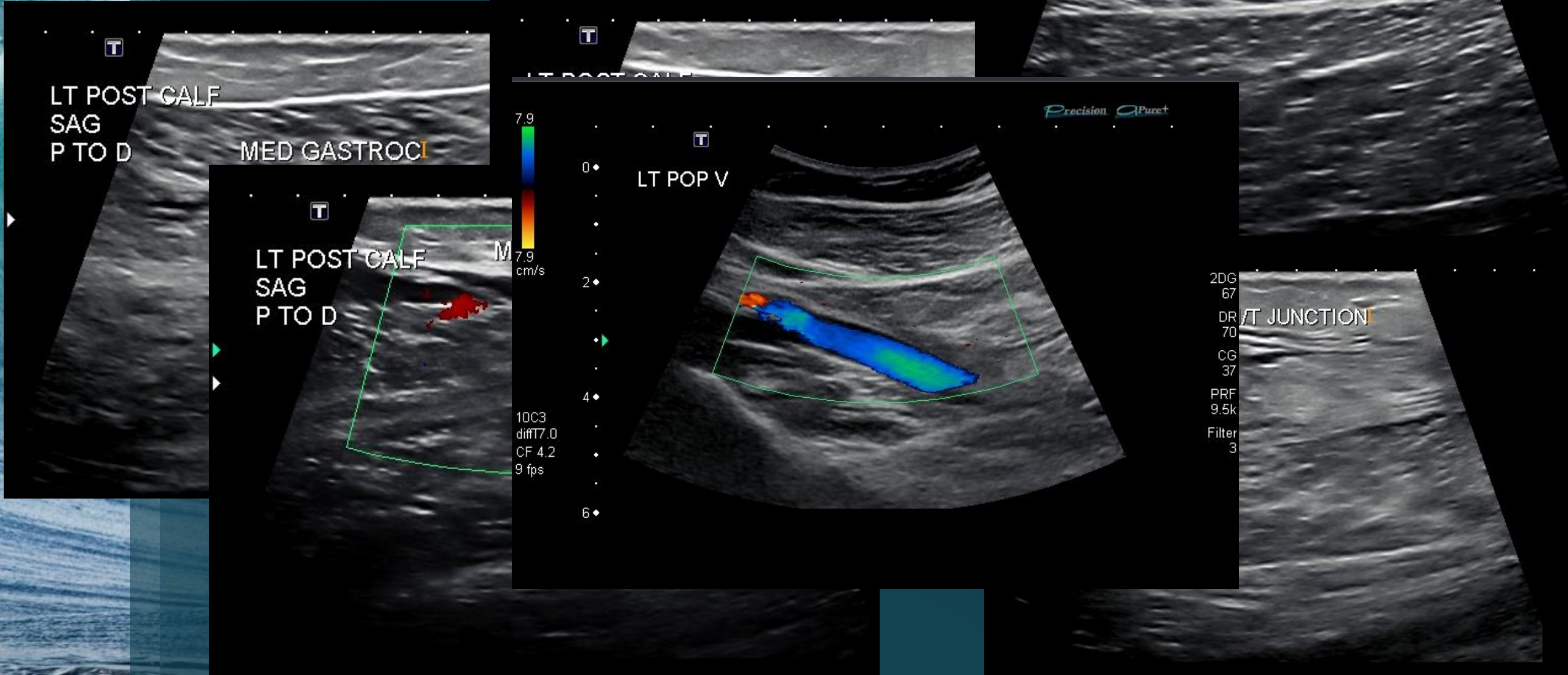
Case study 2

- 67-year-old female with a history of Achilles pain treated conservatively. Now pain and a 'lump' in the posterior calf for three months following an increase in weight and reduced physical activity.



Case study 3

- 33-year-old female with acute, severe pain in the posterior calf following returning to netball after having 12 months due to Covid.



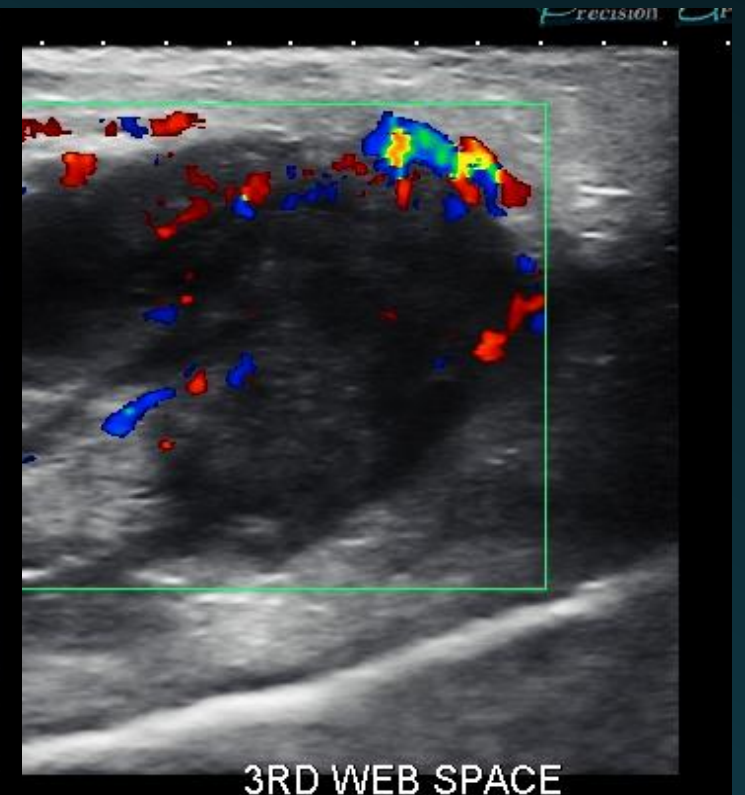
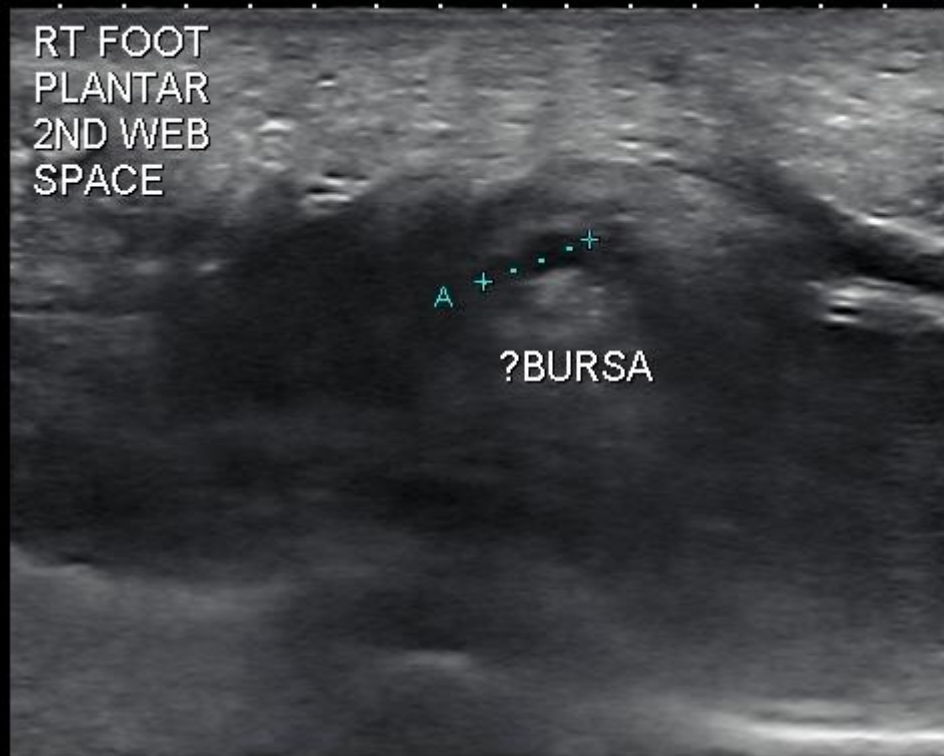
Case study 4

- 64-year-old female with a long standing history of a 3rd web space Morton's neuroma.
- Neuroma has been previously injected multiple times and surgically removed approximately 5 years ago
- Now symptoms returning.

RT FOOT
PLANTAR
3RD WEB SPACE

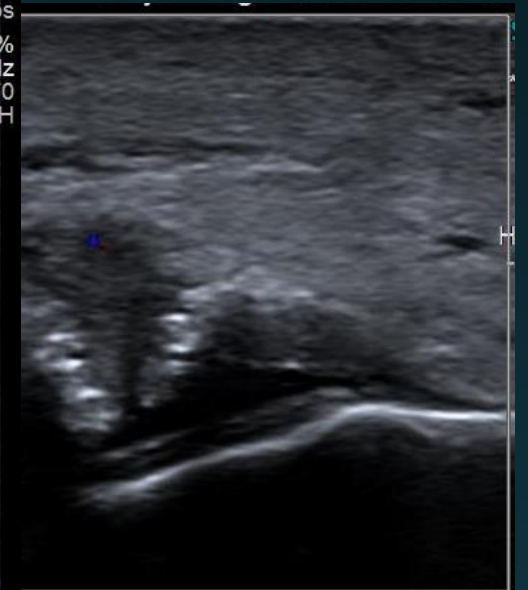
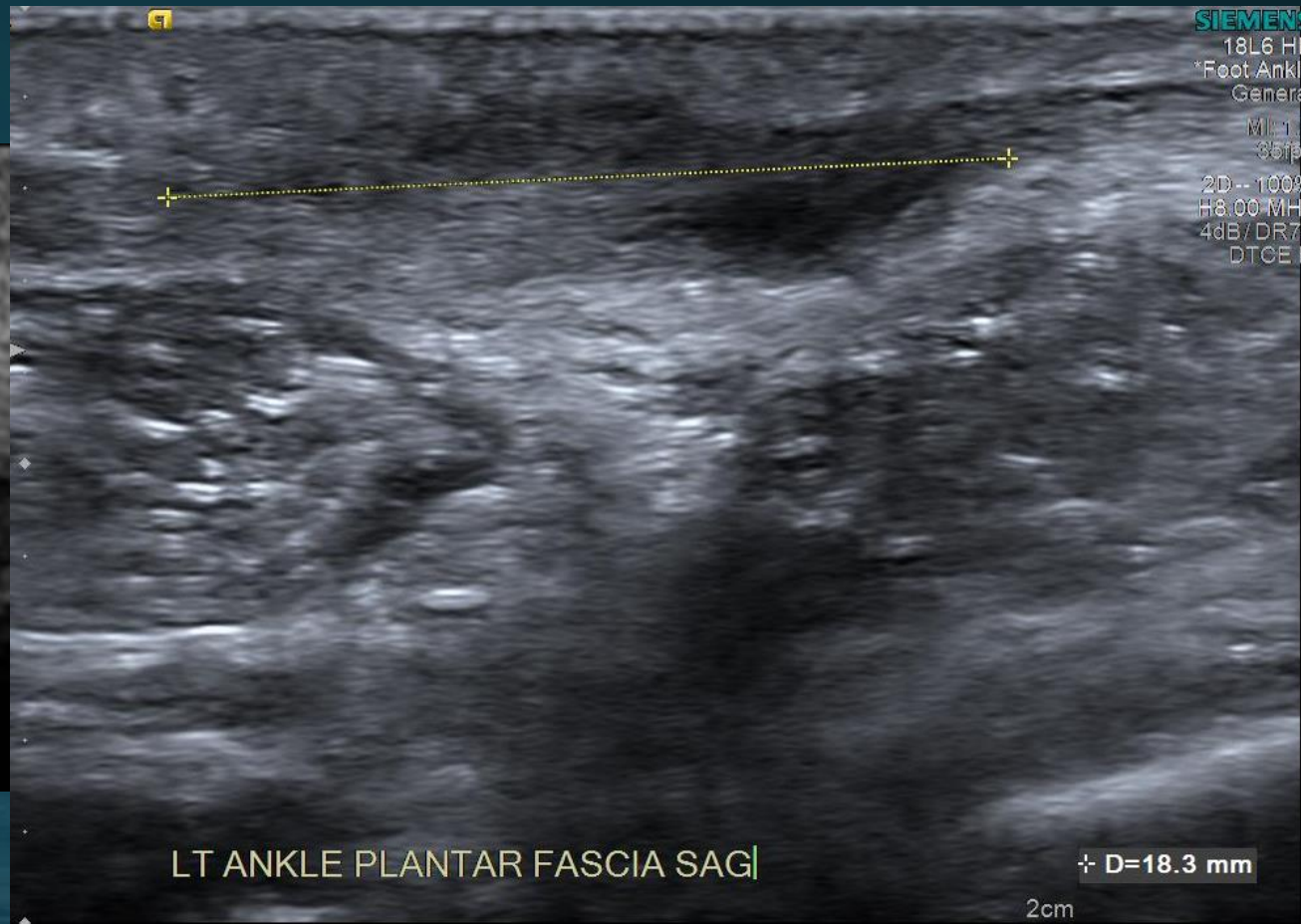
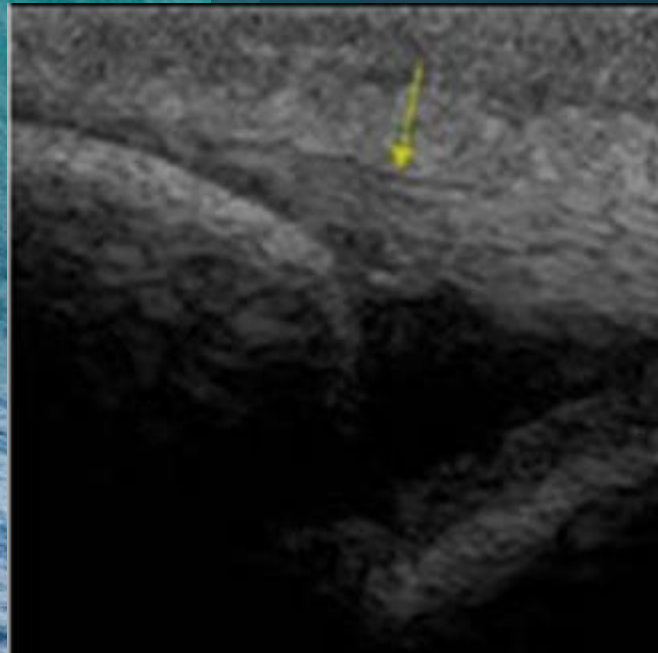


RT FOOT
PLANTAR
2ND WEB SPACE



Case study 5

- 54-year-old male one week post inversion injury walking off a step. Swelling has reduced however still has lateral ankle pain.





Take home message

- Tendinopathy and tendinosis both denote diseased tendon, pain is discriminating factor.
- Beware of satisfaction syndrome
- Optimize your image to avoid missing subtle changes
- Clearly document abnormalities observed

Something to practice

- When scanning always pay attention to your image parameters such as depth, gain, focus and preset.

