



## Case Description

- 50-year-old male with acute exacerbation of chronic R shoulder pain after reaching behind the driver's seat of the car
- Pain described as a dull and deep ache limiting ROM with weakness

## Examination

- Significant R shoulder hiking with pain at 70° abduction and limited external rotation to 45° with pain
- Tenderness to palpation of the supraspinatus tendon
- Positive Neer's and Hawkin's tests

## Ultrasound Examination

- Initial diagnostic ultrasound revealed
  - Mid-section focal calcification (Figure 1A) of the supraspinatus (SS)
  - Partial articular surface tear of the supraspinatus measuring 1.22 cm by 0.66 cm (Figure 1B)
  - Unequivocal infraspinatus (IS) findings due to acoustic shadow from calcific tendinopathy (Figure 1C).
- After treatment, 28-week follow-up ultrasound showed complete healing of SS tear (Figure 1E) and improvement in calcific tendinopathies (Figure 1D, F).

## Images

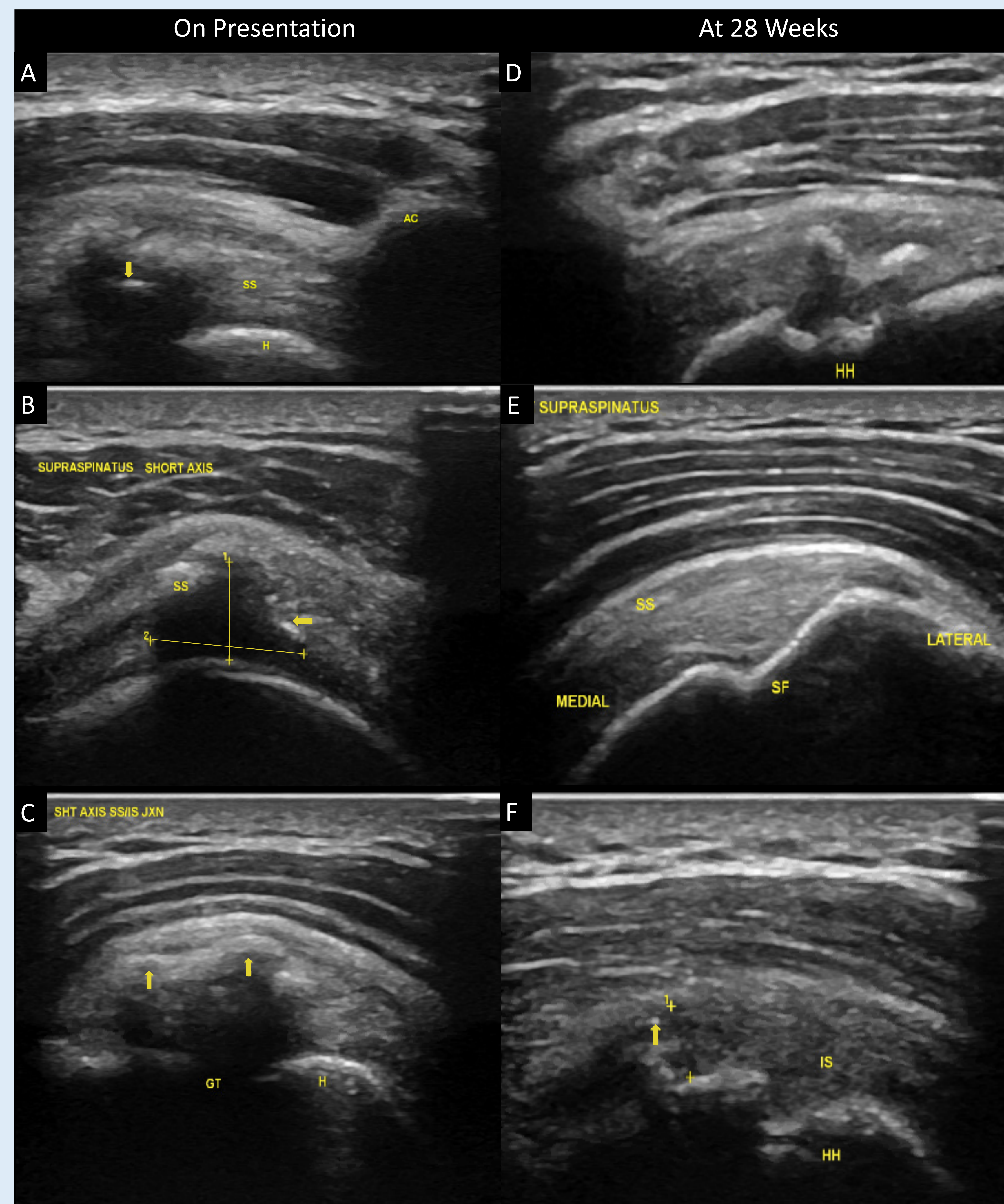


Figure 1

## Results

- Patient opted for a micro-fragmented adipose tissue injection 2 weeks after initial presentation
- Fat was collected from the bilateral gluteal and flank areas and mechanically processed using a Lipogems device
- 3 cc was injected directly into the supraspinatus tendon tear site, 3 cc near the articular surface, and 3 cc into the joint capsule
- 14-week follow-up showed moderately improved ROM and pain reduction. At this time, ultrasound-guided barbotage of both SS and IS calcific sites was performed followed by LR-PRP injection (5 cc total) into the SS tear site, and the SS and IS calcific sites.
- 28-weeks follow-up showed near full recovery of pain and ROM with complete healing of the tendon tear

## Discussion

- Micro-fragmented adipose tissue shows promise in tissue regenerative application due to presence of mesenchymal stem cells
- Platelet-rich plasma is more well-studied biologic agent known for its healing potential through the release of growth factors found in platelet granules
- Together, these therapies could work synergistically with the fat filling in and scaffolding the torn region and the PRP acting as a growth accelerant
- Significance: This is the first human application of both therapies to treat a partial thickness supraspinatus tear.