

Clinical History

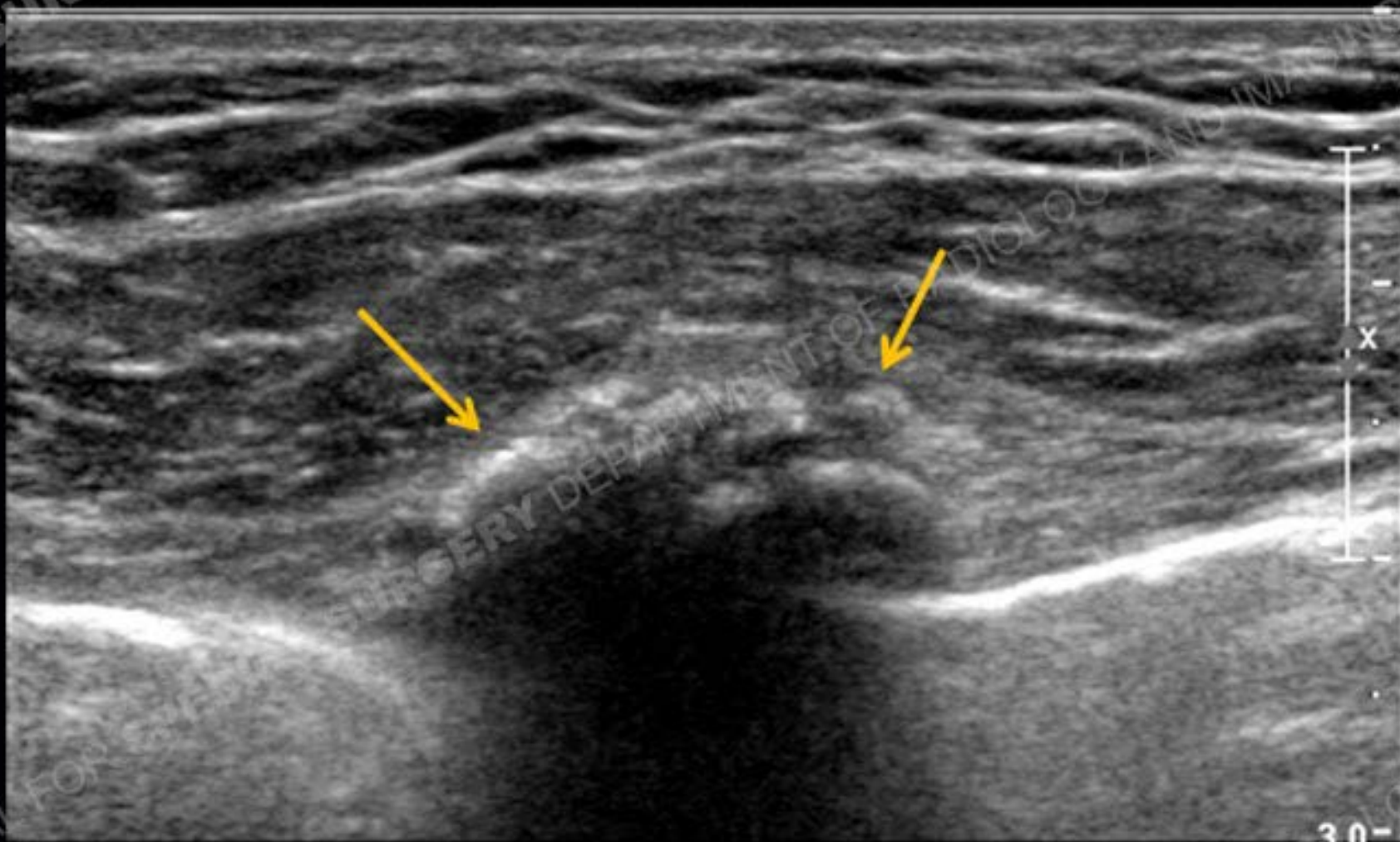
A 35 year old male sustained a fall with pain at the anterior chest wall.

One week after the injury, chest and rib radiographs (at an outside institution) were interpreted as normal.

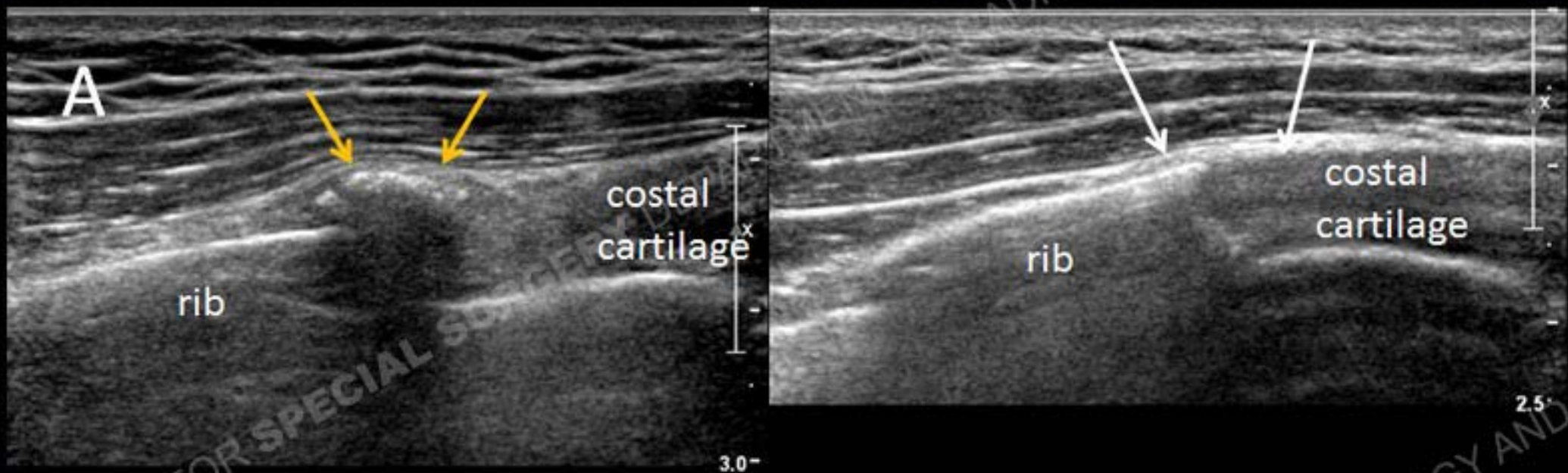
After two more weeks of pain and subsequent development of a palpable “nodule” at the area of discomfort, he obtained a second opinion.

Ultrasound evaluation of the area of concern was requested.





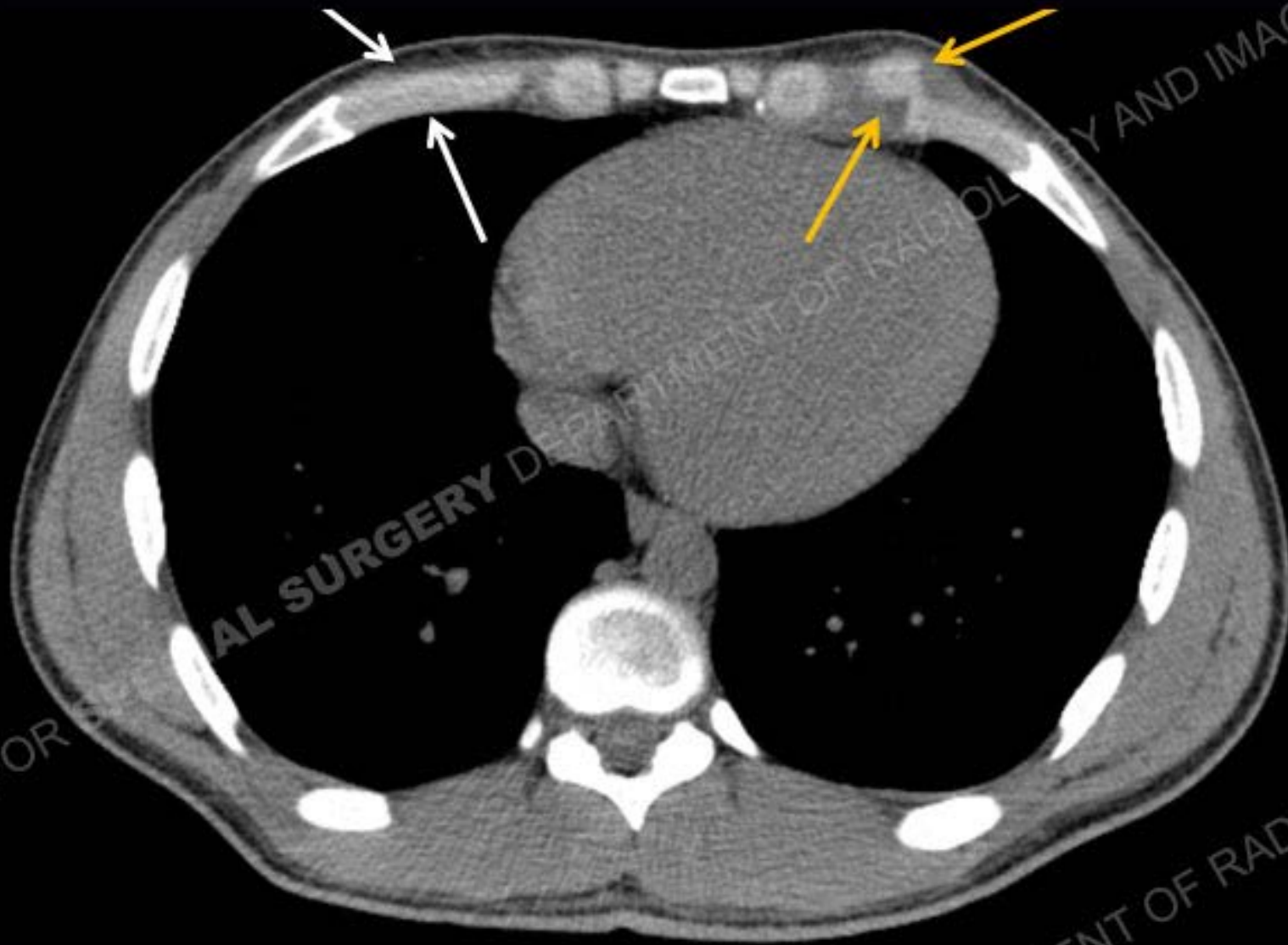
B. Short-axis ultrasound view. The area of osseous irregularity and soft tissue thickening at the far anterior left 4th rib is re-demonstrated (arrows). This correlates with the area of discomfort and is diagnostic of a costochondral junction fracture. The ossific irregularity represents reactive bone formation at the site of injury.



Normal comparison rib

A. The previously described long-axis view of the costochondral junction fracture (yellow arrows).

B. Normal adjacent 3rd rib costochondral junction on the same patient for comparison (white arrows) demonstrates a smooth contour of the costochondral junction.



CT image of another patient with a similar diagnosis.
Yellow arrows demonstrate a mildly displaced left costal cartilage fracture.
White arrows demonstrate the normal contralateral costal cartilage.

Diagnosis: Costochondral junction fracture

Discussion

Costal cartilage fractures may be a difficult clinical diagnosis.

Radiographs are generally normal in the absence of an associated rib fracture.

While, as demonstrated, the diagnosis may be made by either CT or ultrasound imaging (as well as MRI), ultrasound is less expensive, faster, and like MRI avoids the use of radiation.

