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FROM VISION TO  
PRECISION



# When the Rib is the Culprit: Slipping Rib Syndrome as an Overlooked Cause of Pain

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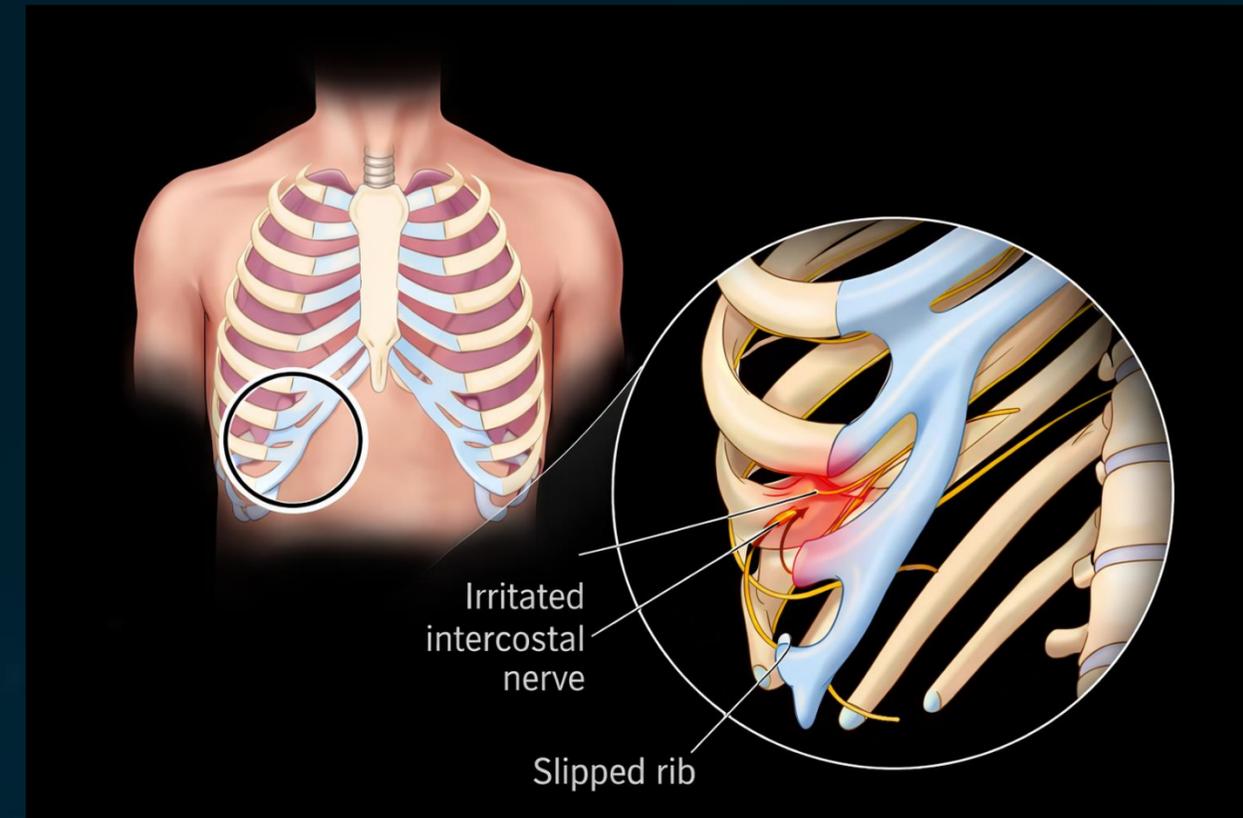


# Learning Objectives

- To recognize the dynamic ultrasound features of slipping rib syndrome.
- To understand the complementary role of MRI in chest wall pain evaluation.
- To emphasize the importance of targeted imaging in diagnosing an under-recognized condition.

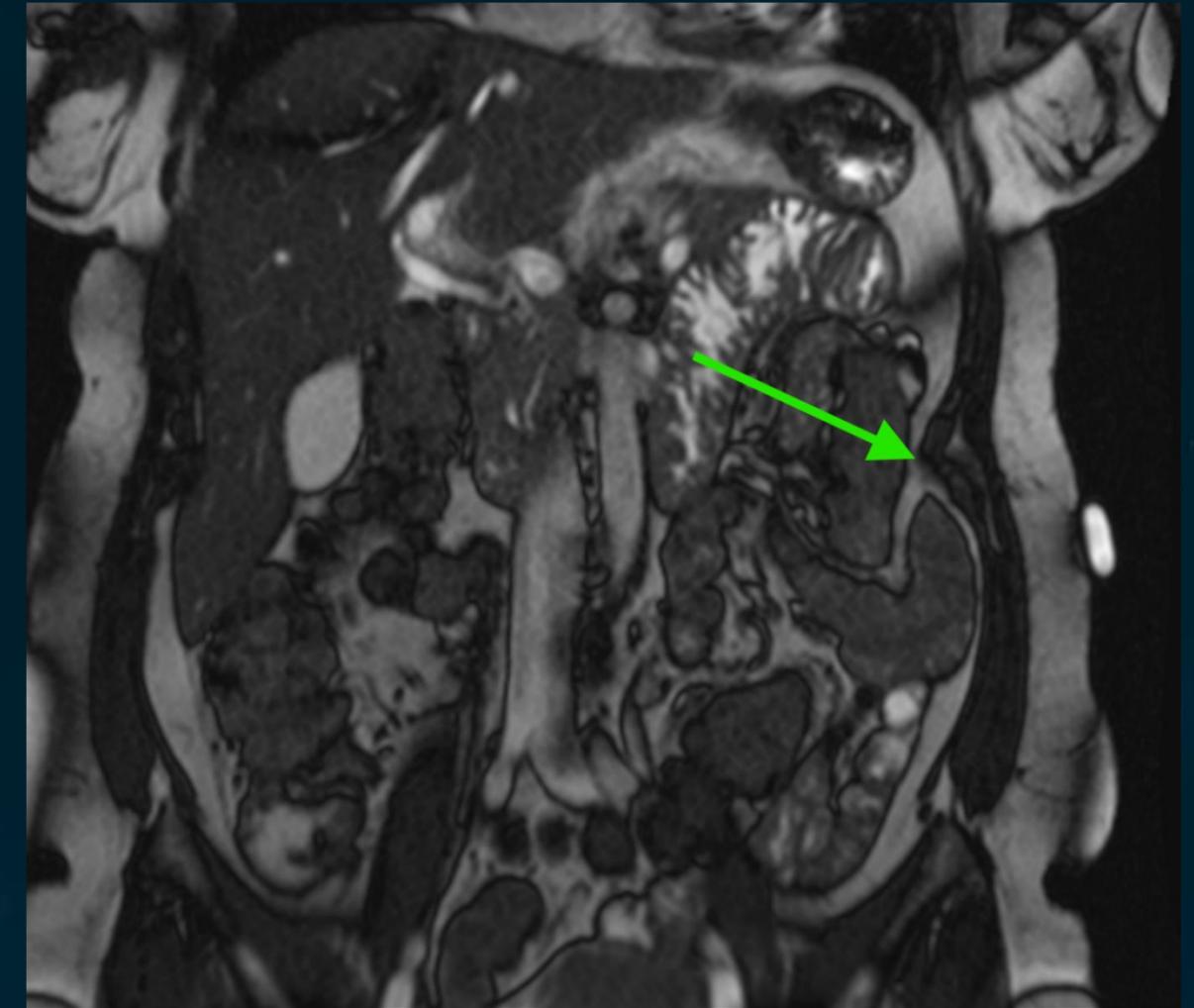
# What is Slipping Rib Syndrome?

- AKA Cyriax syndrome and painful rib syndrome.
- Defined as hypermobile and lax lower costal cartilages (typically the 8th, 9th or 10th ribs) that causes irritation of the intercostal nerves.
- Typical presentation is intermittent, sharp pain, exacerbated by movement or respiration.
- Imaging features with different modalities
  - Often overlooked by static imaging (CT & radiographs).
    - Cannot visualize cartilage movement or subluxation.
  - Dynamic ultrasound (with manoeuvres such as Valsalva, crunch, or manual push) is the most frequent tool for diagnosis.
    - Shows motion of costal cartilage slipping relative to adjacent ribs.
  - MRI can also show associated soft tissue changes and can exclude alternative causes of chest wall pain.
  - Fluoroscopy is inferior to dynamic US as rib abnormal rib movement can be subtle.
- Early diagnosis guides appropriate management and reduces unnecessary investigations.



*Generated diagram illustrating slipping rib causing nerve irritation.*

# Case I - Slipping Rib Syndrome

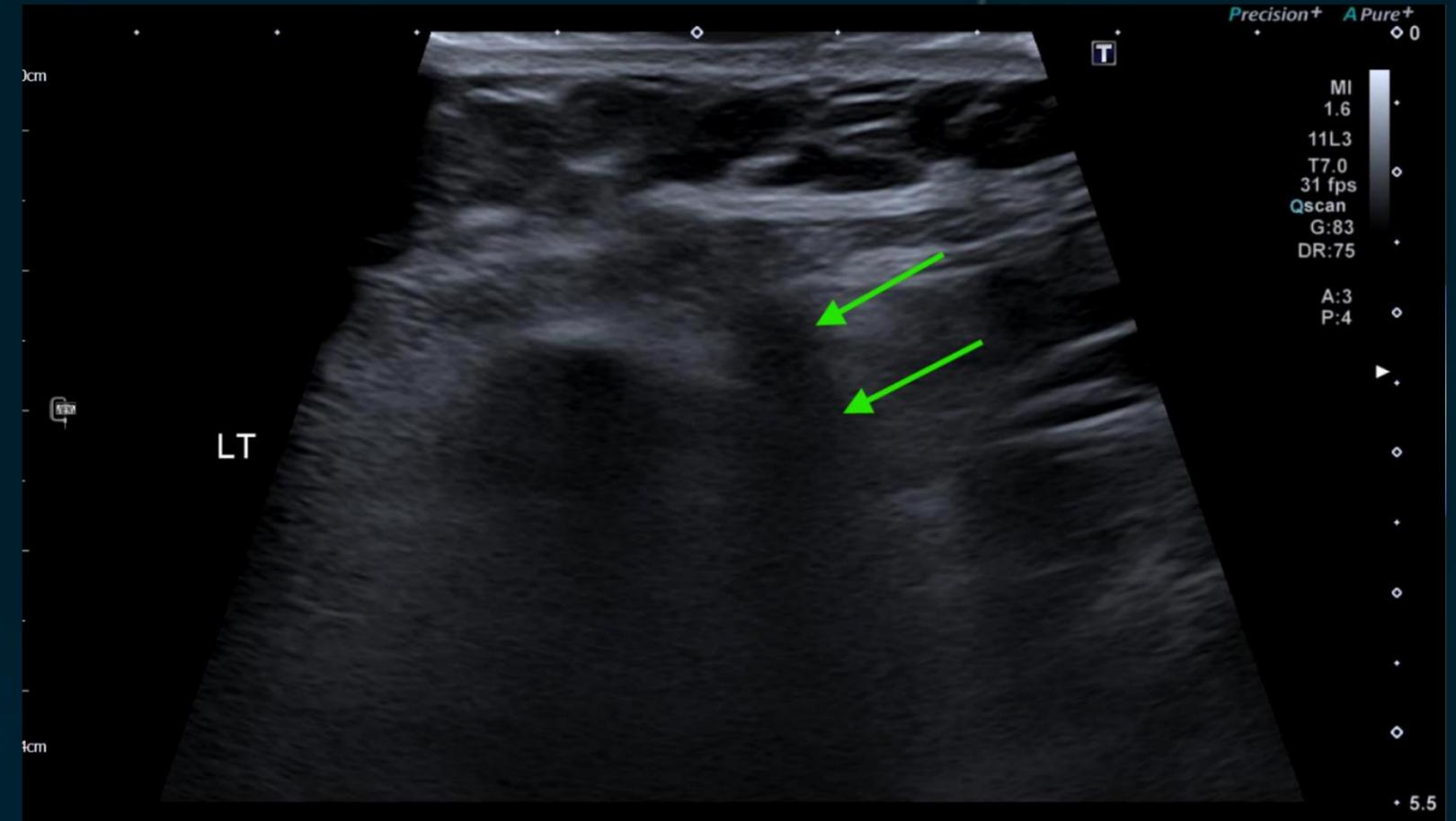
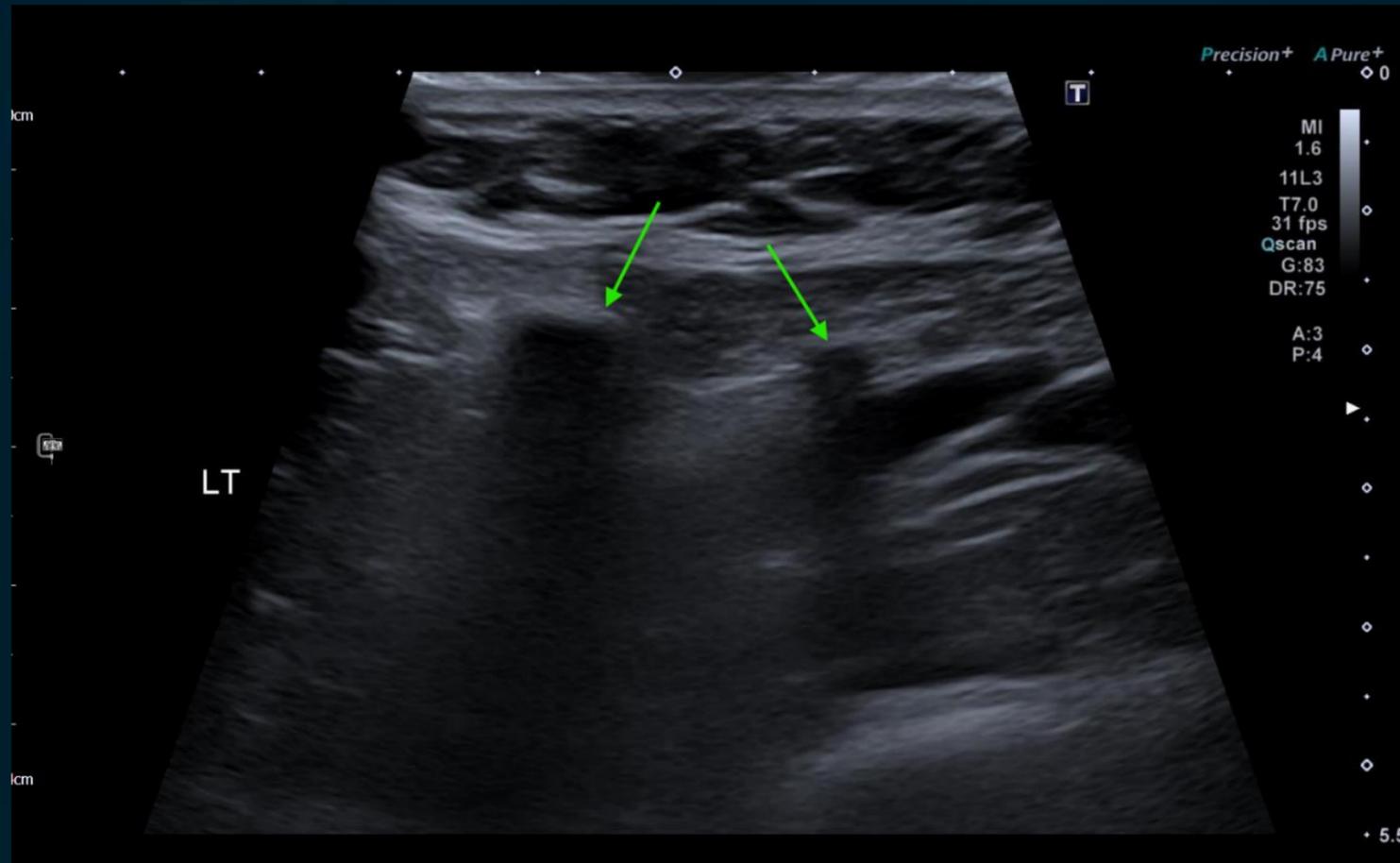


Surface shaded display (SSD) reconstruction CT image (left) and sagittal MIP CT image (right) highlighting widened left 9th / 10th rib intercostal space (green arrows).

Coronal non-enhanced T2 of the abdomen showing medially displaced 9th/10th left rib.

Case I images were adapted from Royal Papworth Hospital, UK, as a courtesy of Dr. Mohammad AlHumoud.

# Case I - Slipping Rib Syndrome



*Linear grey-scale dynamic US examination of the left lower ribs showing the left 9th and 10th ribs (green arrows) which demonstrated hypermobility during physical manoeuvre, that caused overlapped ribs (left image).*

*Case I images were adapted from Royal Papworth Hospital, UK, as a courtesy of Dr. Mohammad AlHumoud.*

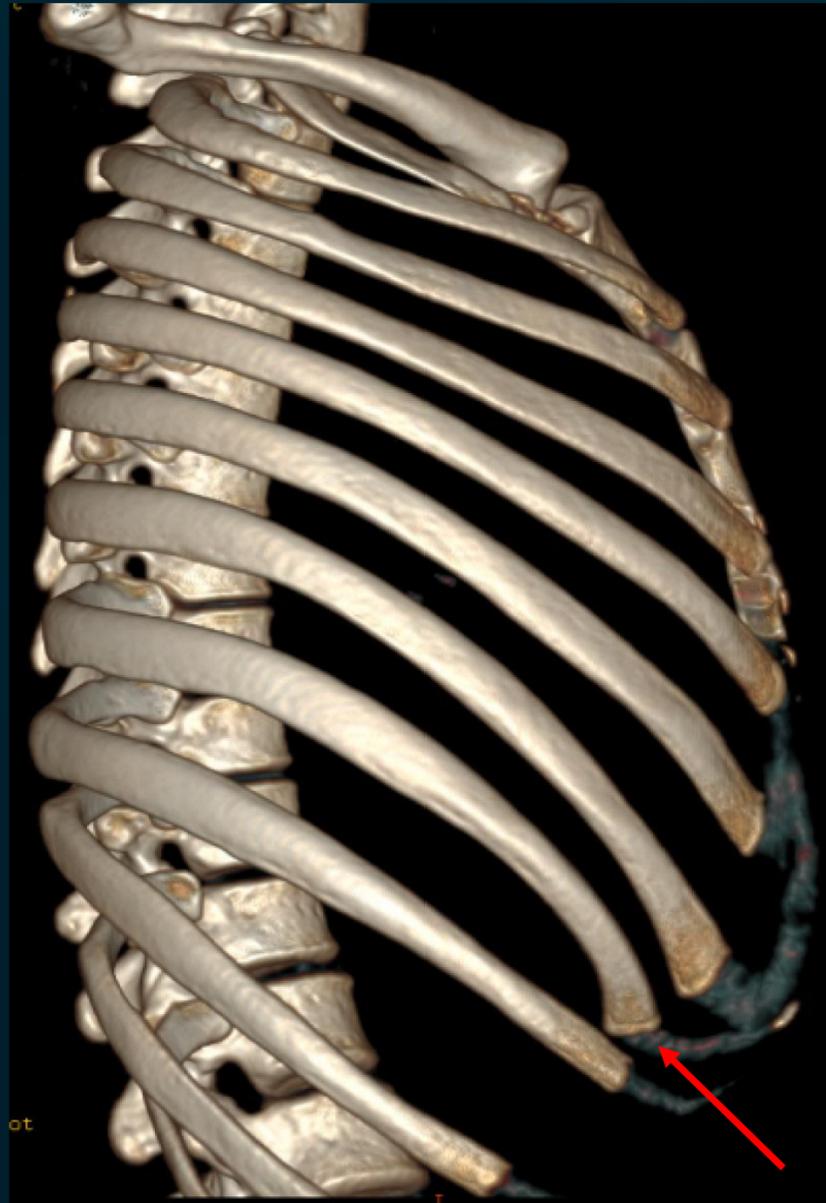
# Case II - Slipping Rib Syndrome



*Plain coronal CT images (left and middle) and sagittal CT images (right top and right bottom) demonstrating inward traction of the lower ribs indenting the liver at the right side and abutting the splenic flexure of the colon at the left.*

*Case II images were adapted as a courtesy of Dr. Ali Almokadem.*

# Case II - Slipping Rib Syndrome



*Surface shaded display (SSD) reconstruction CT images with inner view (left) and outer view (right) demonstrating inward traction of the 8th rib (red arrows)*

*Case II images were adapted as a courtesy of Dr. Ali Almokadem.*

# References

- Madeka I, Okusanya O, Mojica J, et al. A review of slipping rib syndrome: diagnostic and treatment updates to a rare and challenging problem. *J Clin Med*. 2023;12(24):7671. doi:10.3390/jcm12247671.
- Davelaar CMF, Hauer NN, van der Geest RJ, et al. A clinical review of slipping rib syndrome. *J Pain Res*. 2021;14:3159-3168.
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- Turcios NL. Slipping rib syndrome: an elusive diagnosis. *J Clin Pract*. 2017;71(3):e104795. doi:10.1111/ijcp.12949.