



History: 2 year old girl referred from outside institution for evaluation.  
Above: Scoliosis series



AP and lateral views of the cervical spine



Coronal reformat of CT cervical spine



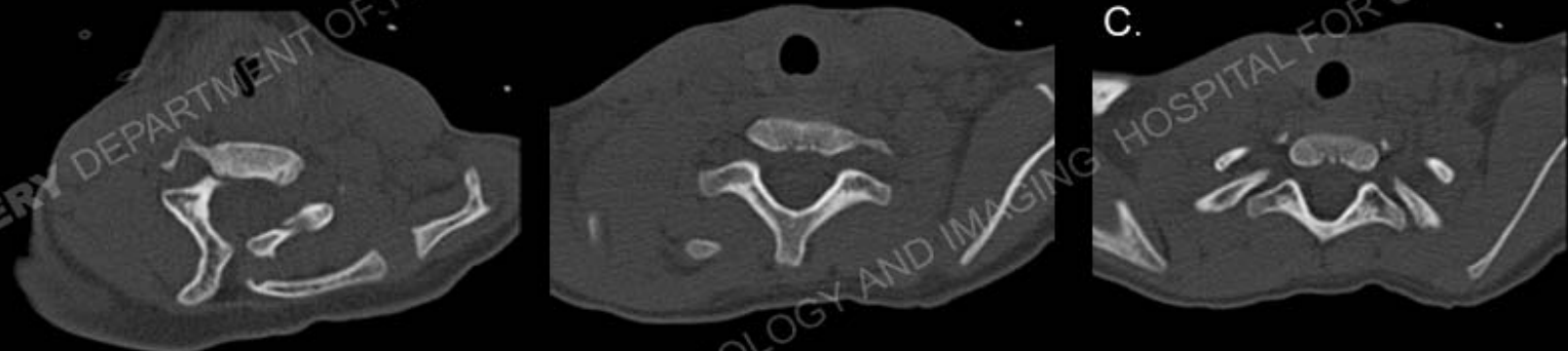
Axial CT image cervical spine

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A.

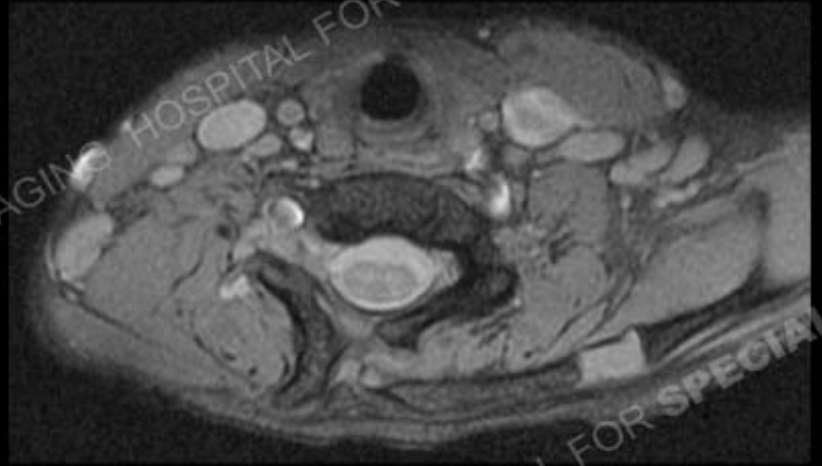
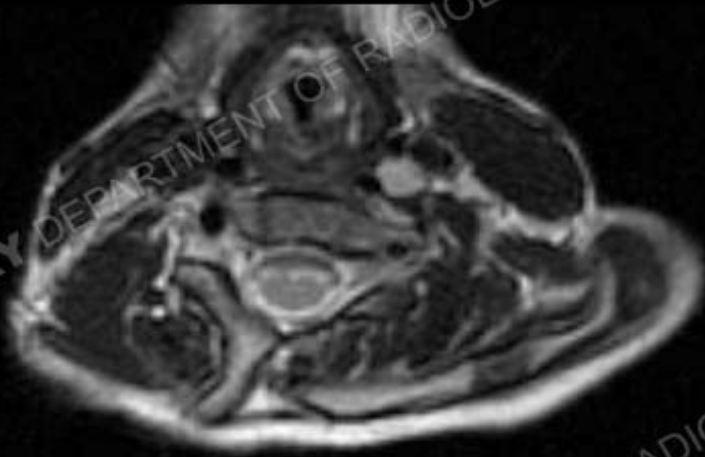
B.

C.

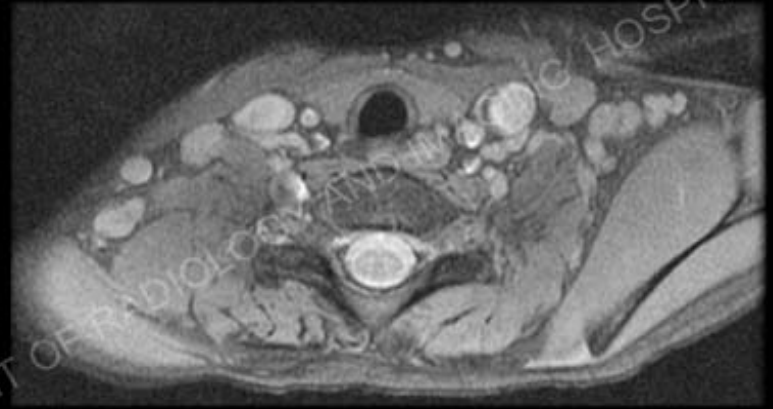


A - C: Multiple axial CT images extending from superior to inferior

AXIAL T2 image of cervical spine



AXIAL Fat Sat MPGR images of C-spine







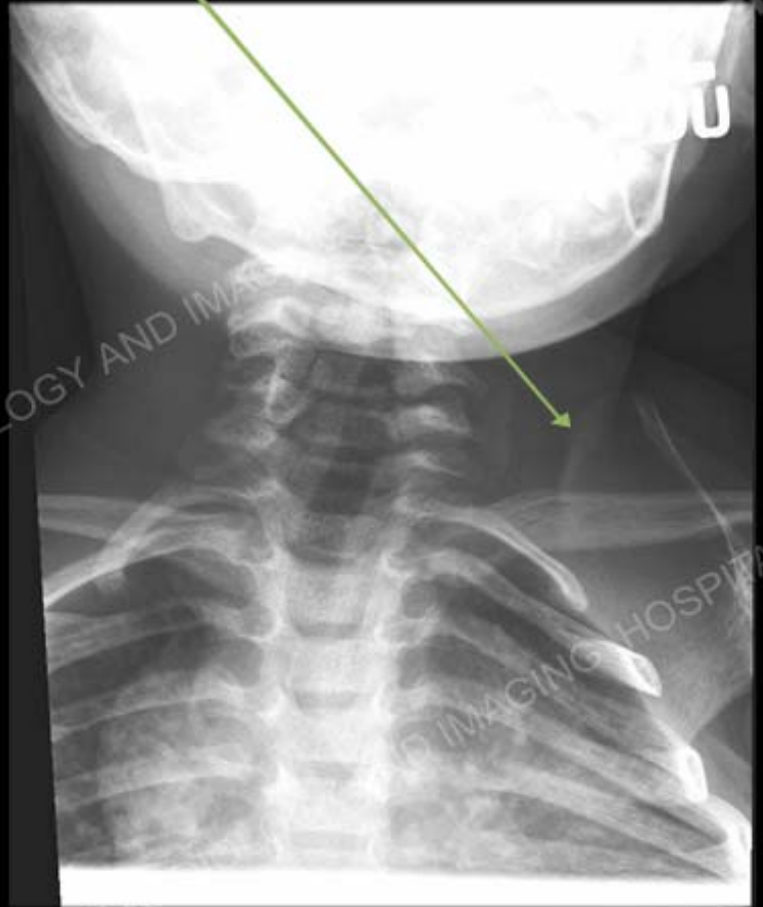
Coronal reformats of CT cervical spine

## Findings

Multiple modalities demonstrate elevation of the left scapula with an abnormal bone emanating from the cervical spine and extending towards the left scapula. Fusion anomalies are seen of the cervical spine. There is a non osseous connection seen between the bone emanating from the cervical spine towards the left scapula. This is demonstrated on the CT by the absence of bone and on the MRI by high signal extending between the additional bone and the native scapula.



Elevation of the left scapula



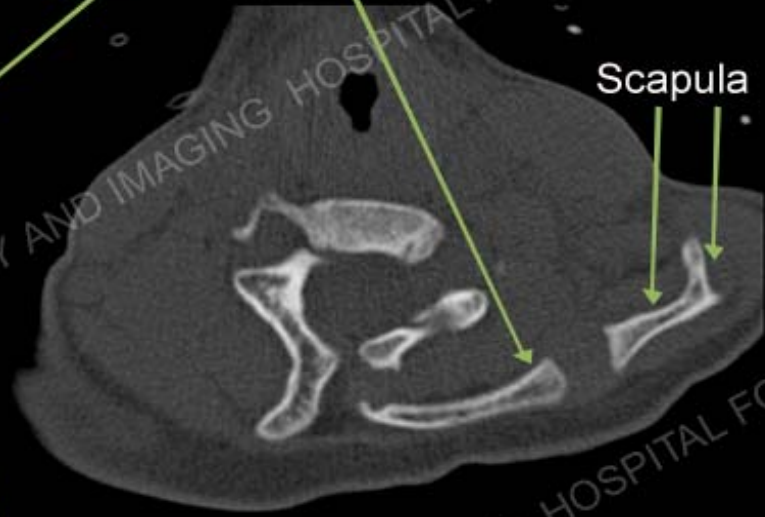


Additional bone emanating from cervical spine

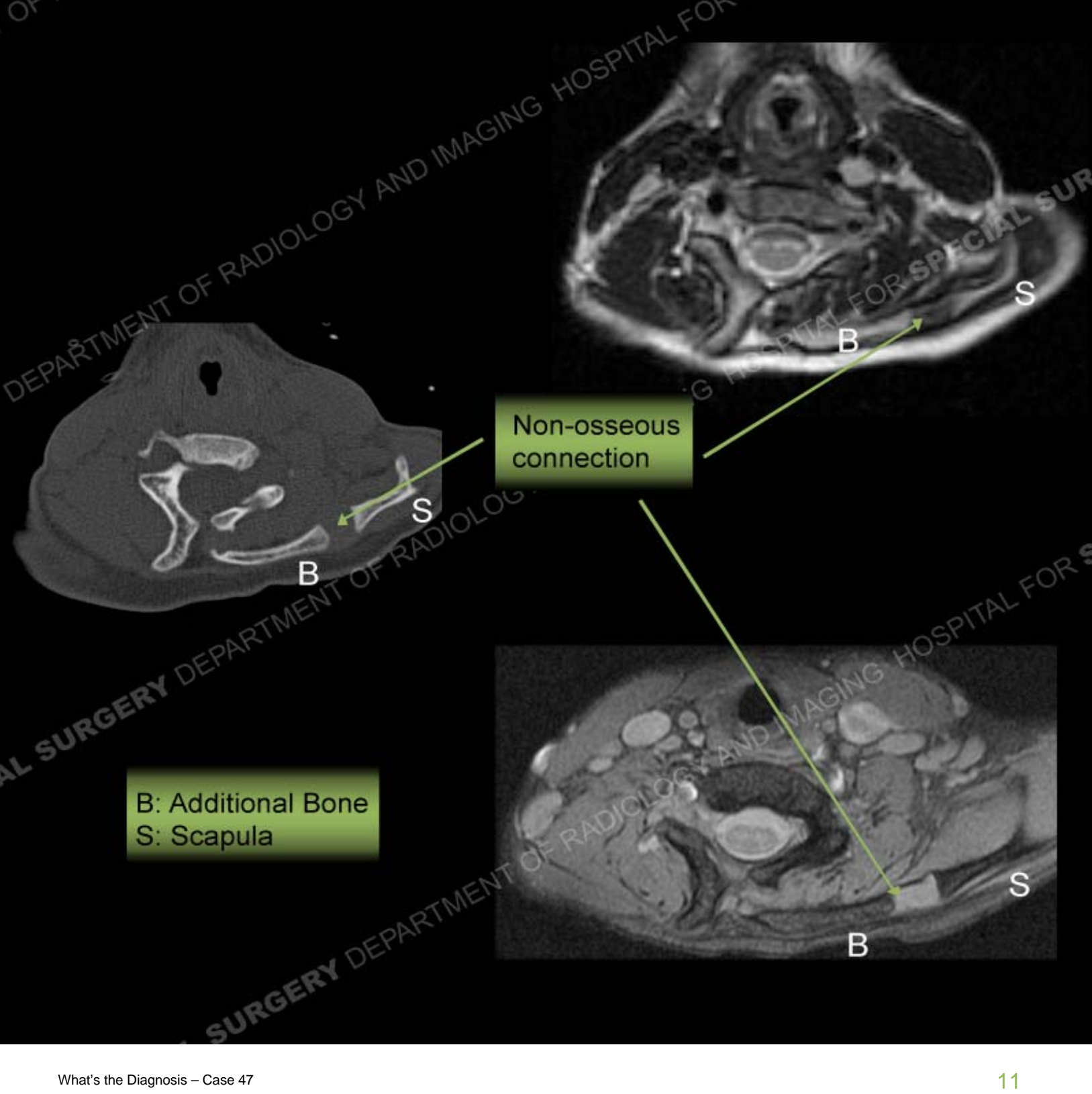


Fusion anomalies of C-spine

Additional bone extending from C-spine to scapula



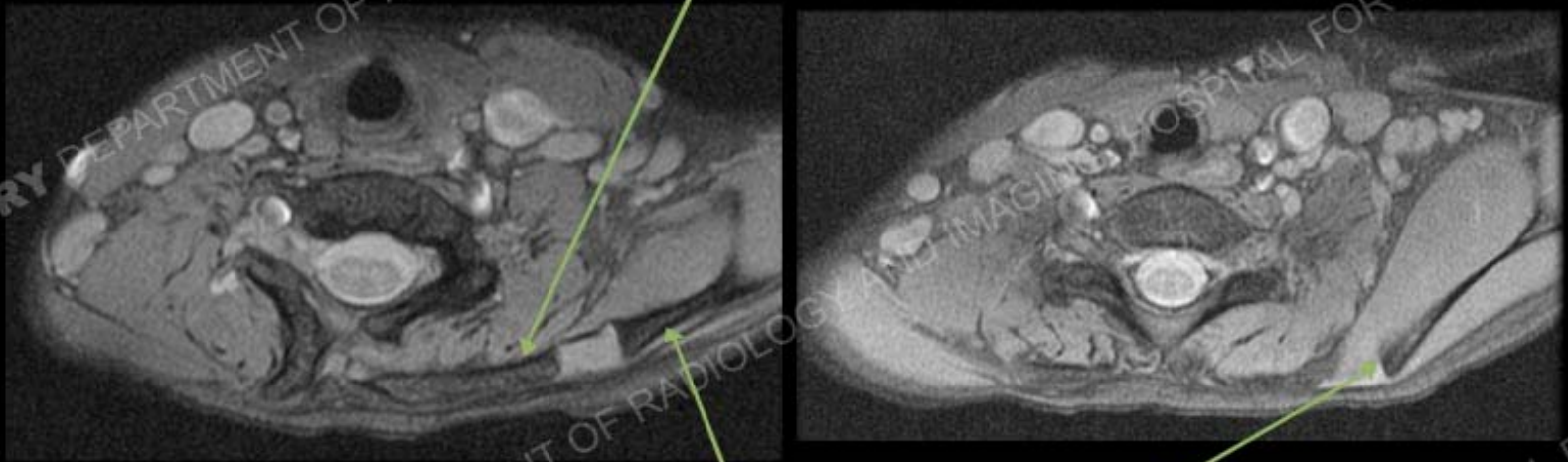
Elevation of left scapula



Non-osseous connection

B: Additional Bone  
S: Scapula

Additional bone extending to scapula



Scapula

\*\* Note on the right side no scapula is seen as the left scapula is elevated

## Diagnosis: Sprengel's Deformity

Sprengel's deformity is a congenital deformity yielding an elevation and medial rotation of the scapula related to a failure of the normal caudal migration of the scapula. In approximately 30% of the deformities, an omovertebral bone is present that extends from the posterior elements of the cervical spine to the native scapula. This may be connected directly to the scapula by osseous bridging or by non-osseous (cartilage or fibrous tissue) bridging as in this case. The deformity is most typically seen in the setting of a Klippel Feil (KF) syndrome where there is fusion of two or more cervical vertebrae. KF often has associated other vertebral anomalies, a webbed neck, cervical ribs, and cardiac/pulmonary/renal/ and GI anomalies.





## Resources

Resnick and Kransdorf. Bone and Joint Imaging. 2005.

[http://www.wheelessonline.com/ortho/sprenghels\\_deformity](http://www.wheelessonline.com/ortho/sprenghels_deformity).

