
Spinous Process Apophyseal Avulsion

Joseph Junewick, MD FACR

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History

Teenage female gymnast with neck pain.

Diagnosis

Spinous Process Apophyseal Avulsion of C7

Discussion

Clay shoveler's fracture affects the spinous process of the lower cervical and upper thoracic spine. Acute or chronic repetitive deceleration forces caused by the pull of the trapezius, rhomboids, and the ligamentum nuchae on the neck exert traction on their attachment to the spinous processes. In children this may be manifest as an apophyseal avulsion injury-the so called pediatric equivalent clay shoveler's injury.

Findings

CT-Sagittal reformatted image shows subtle separation of the apophysis of the spinous process of C7.

MR-Sagittal inversion recovery image shows edema in the C7 spinous process.

NM-Sagittal SPECT image from Tc-99m methylene diphosphonate bone scan shows changes of injury/healing.

Reference

Yamaguchi KT, Myung KS, Alonso MA et al. Clay-Shoveler's Fracture Equivalent in Children. Spine (2012); 37:E1672-E1675.







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