

## SMRT Student Scope Submission

### Title and Author

Title: Massive Disk Herniation of the Thoracic Vertebrae

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### Introduction or Patient History

Patient was a 43-year-old female who was five months pregnant. Presented with progressive paresthesia ("pins and needles") and weakness in her lower extremities. Symptoms included burning pain and numbness of the legs, especially the right. Patient stated the pain began in right hip area previous to discovering her pregnancy. Patient had considerable trouble walking. Due to pregnancy, physical therapy, EMG/nerve conduction study and steroid medication were all implemented before MRI scan of the thoracic and lumbar spine was ordered.

## Patient Preparation and Scan Set up

The patient arrived to the outpatient Spine Center for her appointment. The patient filled out forms to obtain medical history, a spine survey to ascertain the complaint and source of the complaint and finally a MRI screening form. The patient was screened for MRI safety precautions. Due to pregnancy, the patient's obstetrician and primary care doctor were consulted for safety purposes. The attending radiologist was also consulted by the conducting radiographers to ensure safety of the patient and unborn child. The patient was informed of the risks and benefits to her fetus by having the MRI examination and the radiographer obtained consent. The patient completed a pregnancy screening/acknowledgement form as well.

Patient was scanned on a General Electric Signa HDX 1.5 Tesla scanner. Patient was placed in the supine position on an eight channel 234 USA Technologies coil. Earplugs and noise canceling headphones were supplied to the patient. An angled sponge and additional pillow were placed under the patient's knees to increase her comfort. Landmark was placed at the C3 vertebrae in order to create a counting film for the thoracic spine series. The patient was then advanced into the scanner and consulted to insure comfort before the exam began.

## MR Imaging Parameters

The thoracic spine protocol was used for this study, which included a total of 7 sequences.

Sequence	FOV	Slices	TR	TE	T/S	Matrix	NEX	Band
3 pl T2* F	48 x 48	11	5	1.5	5/5	256 x 128	2	N/A
3 pl T2* F	48 x 48	11	5	1.5	5/5	256 x 128	2	N/A
Sag T2 frF	32 x 32	13	3650	77.96	3/1	448 x 224	4	41.67
Sag T1 FSE	32 x 32	13	600	9.94	3/1	256 x 224	2	20.83
Sag T2 fat	32 x 32	13	3883	114.6	3/1	448 x 224	4	41.67
Ax T2 frFS	20 x 20	60	4133	74.88	4/1	256 x 192	2	31.25
Ax T1 FSE	20 x 20	60	567	15.62	4/1	256 x 192	2	20.83

## Findings and Discussions

The MRI scan showed the patient had a massive disk herniation. According to the Radiologist's preliminary report, the herniation was of the T6-T7 region or the T7-T8 level. The spinal cord was believed to be significantly impinged. At least three-quarters of the patient's spinal cord was affected by the disk herniation.

The radiologist recommended the patient have urgent surgery and decompression. The radiologist conferred with the attending neurosurgeon and the patient's obstetrician to formulate a surgery plan.

## Conclusions

In conclusion, although herniated disk of the cervical and lumbar spine are fairly common as a source of radiculopathy, demonstration of herniated disk in the thoracic spine is a rare occurrence. Most herniation occurs in the lumbar spine, about 15 times more than the 8% that occurs in the cervical spine. Herniation in the thoracic spine is so rare, it only occurs 1-2% of the time. It is especially rare for the herniation to be as massive as the one occurring in this patient and for it to occur in such a central location.

A report from the patient's neurologist indicates the obstetrician disagreed with the surgery suggestion. The patient's OB and Neurologist agreed that the best plan was to keep her stable with oral steroids for another 6-8 weeks. This time would allow the fetus to reach adequate lung maturity. Surgery would be postponed until after that time unless a significant increase in intraspinal pressure occurs.

## References

MedlinePlus.com Herniated nucleus pulposus

<http://www.nlm.nih.gov/medlineplus/ency/article/000442.htm>

Mautner MD, Kenneth R. History and Physical Dictation. The Emory Clinic. 12 September 2008

Mautner MD, Kenneth R. Follow Up Dictation. The Emory Clinic. 15 October 2008

Rodts, Jr. MD, Gerald Edward. MRI Dictation. The Emory Clinic. 16 October 2008

Rodts, Jr. MD, Gerald Edward. Neurological Surgery Patient Note. The Emory Clinic. 16 October 2008

## Images

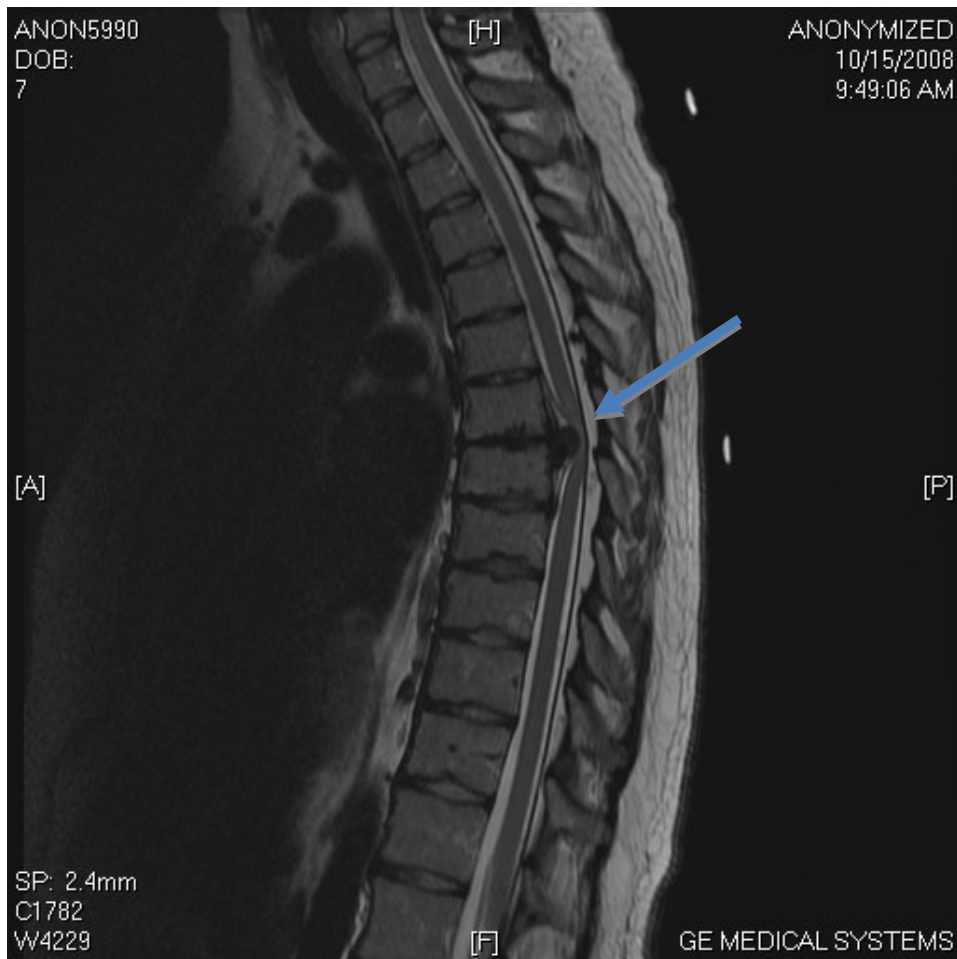
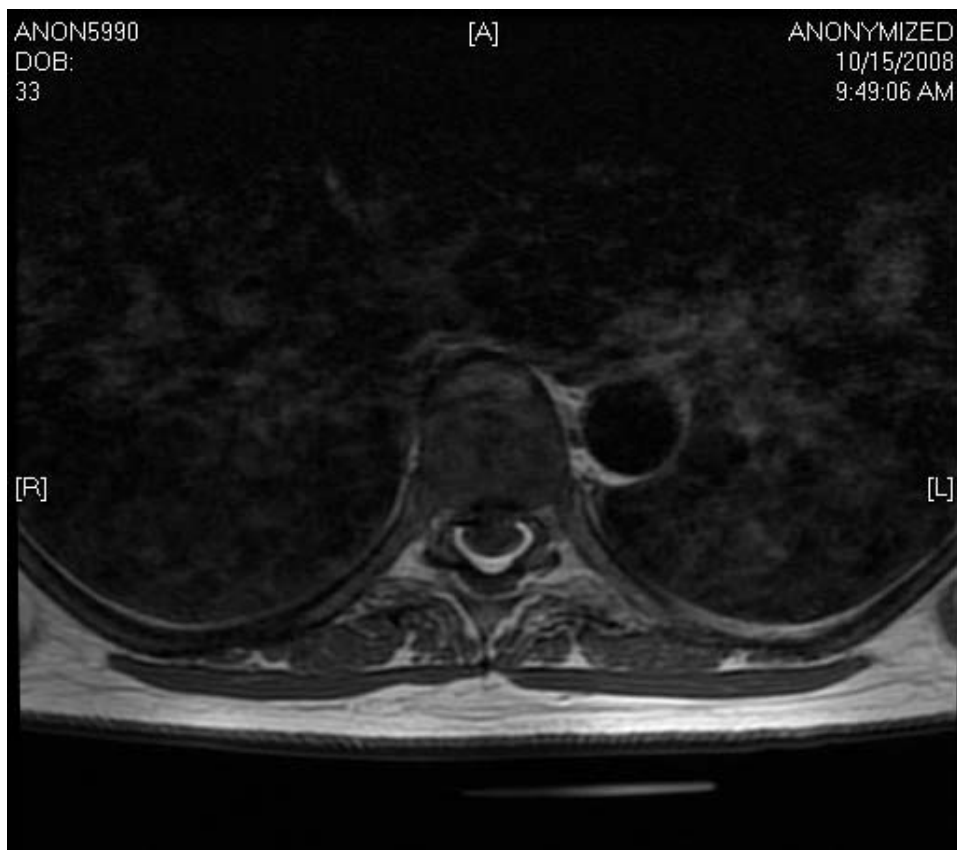


Figure 1: Sagittal T2, shows MDH



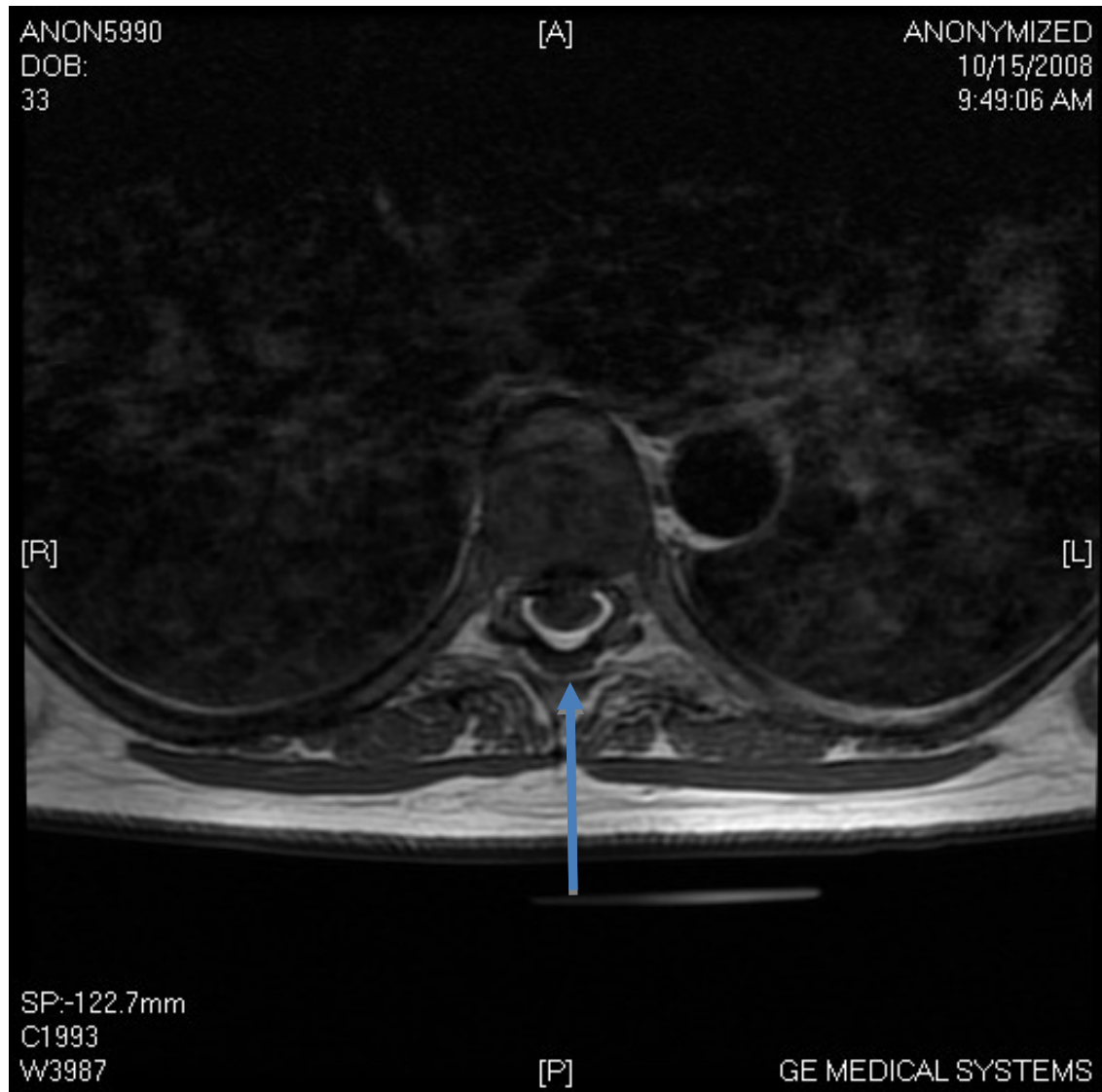


Figure 2: Axial Image; Showing MDH