SMRT Student Scope Submission

Title and Author(s)

MRI Evaluation for Multi White Matter Brain Lesion Post Kidney and Pancreas Transplant

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Introduction or Patient History

34-year-old male presented with aphasia after the transplants did four years. This finding was noted subsequent to renal and pancreas transplant. He was referenced to University of Pennsylvania for MRI of the brain.

Patient Preparation and Scan Set up

This exam was completed on a GE Signa 1.5 Tesla scanner. The patient was routinely screened for any ferrous metal objects inside and / or outside his body prior to starting the exam. The patient was positioned on the scanning table supine with head in the appropriate coil. The patient's head was positioned straight with in a head coil with the interpupilary line perpendicular to the scanning table. Soft sponges were used to restrict voluntary movement. A triangular cushion was placed under his knees as well as to keep the patient comfortable. Earplugs were also provided to reduce the noise level during the scan. A rubber ball was held by the patient in case he needs to contact the technologist. The patient received 20ml OMNI contrast, the dose was calculated by weight.

MR Imaging Parameters

GE 1.5T Tesla scanner

Series	Shown as Imagine number	Sequence	TR (ms)	TE (ms)	FOV	T/S	Matrix	NX	Band
1	No Shown	3 Plan Loc T2*	63.7	1.6	300	5/0	256X128	1.0	224
2	Shown	Sag T1 SE	500.0	14.0	22	5/0	256x192	0.5	122
3	Imagine 1	Ax T2 FSE XL90	4000.0	89.7	22	5/0	256x192	1.0	162
4	Imagine 2	Ax Flair* FSE IR	10002.0	135.0	22	5/0	256x192	0.5	244
5	Shown	Diffusion SE/EPI	10000.0	118.8	30	5/0	128X128	2.0	484
6	Shown	Gradient	750.0	40.0	22	5/0	192X192	4.0	484
7	Imagine 3	Ax T1 SE	600.0	20.0	22	5/0	256x192	1.0	122
8	Imaging 4	Ax T1+C SE	600.0	20.0	22	5/0	256x192	1.0	122
9	Shown	Cor T1+C SE	650.0	20.0	22	5/0	256x192	1.0	122

Findings and Discussions

According to the patient report, "The MRI examination revealed white matter T2 hyperintensities that are located in the periventricular white matter, deep and subcortical white matter. There is associated enhancement with many of the lesions. Given the distribution and appearance,
demyelinating disorder such as multiple sclerosis is favored. Other less favored considerations include Lyme disease or sarcoid. In light of the immunocompromised status of the patient, a more likely possibility for the finding is infection (including fungal infection and toxoplasmosis)."

Conclusions

After researching brain white matter lesions post transplant, the symptoms and associated pathology were recognizable. Brain while matter lesions arise from multiple sclerosis, diabetes or infection (including fungal infection and toxoplasmosis) after using medical immunocompromised therapy. They commonly found in brain white matter. These lesions can be multiple in numbers and can appear partially enhanced. Their symptoms occur according to lesions' location. This patient received further MRI imaging studies to follow the condition in the next two month and show no obviously changes. There is no special method for treatment.

References

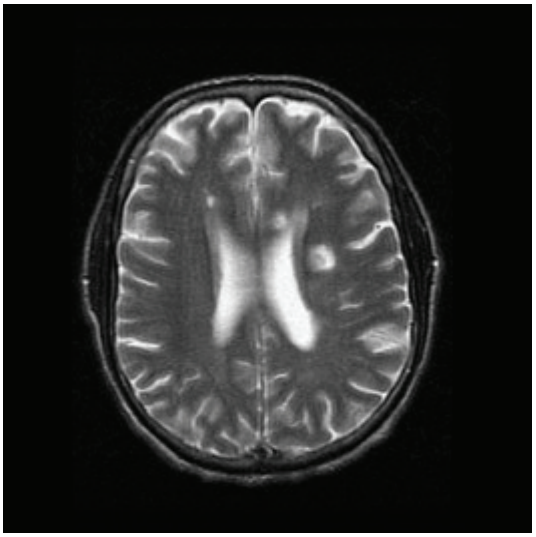
MayoClinic.com Multiple sclerosis overview
http://www.maycoclinic.com/health/multiple-sclerosis/DS00188/DSECTION=3

American Journal of Neuroradiology 26:2282-2289, October 2005
Brain MR Imaging Abnormalities in Kidney Transplant Recipients
http://www.ajnr.org/cgi/content/abstract/26/9/2282

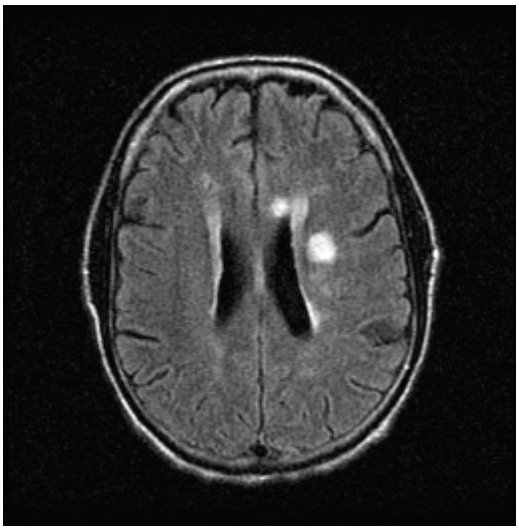
American Journal of Neuroradiology 20:1597-1604 (10 1999)
Disseminated Aspergillosis Involving the Brain: Distribution and Imaging Characteristics
http://www.ajnr.org/cgi/content/abstract/20/9/1597

***Neurology* 1999; 52:1626 Diffusion tensors imaging of lesions and normal-appearing white matter in multiple sclerosis**
http://neurology.org/cgi/content/abstract/52/8/1626

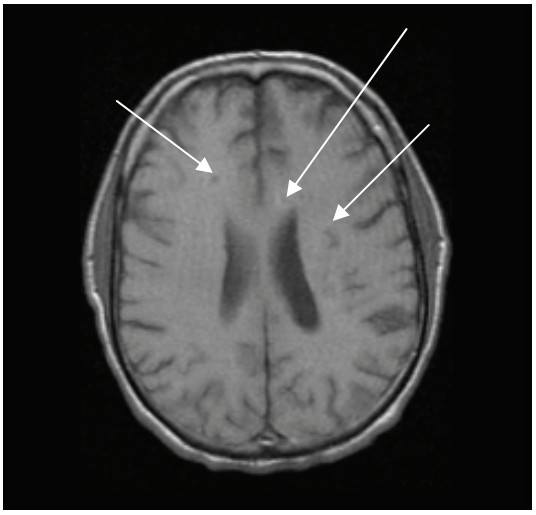
Images



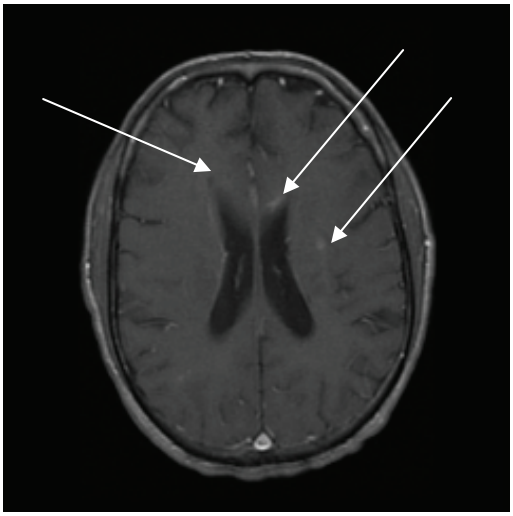
Imagine 1 Axial T2 FSE



Imagine 2 Axial Flair



Imagine 3 Axial T1 Pre



Imagine 4 Axial T1 Post