Patient Name: **Jon Doe**
Date of 2nd Opinion: **9.30.11**

Date of Birth: **7.23.03**
Date of Original Exam: **9.8.11**

**This report should be reviewed by your physician so that you can fully understand the imaging findings, their implications, and any further work up that may be necessary.*

## Clinical Information:
Abnormal brain MRI. Left cerebellar lesion.

## Technique:
The initial scan from 4/21/11 consists of pre and post IV contrast spin echo images and single voxel MR spectroscopy with the acquisition voxel placed around a lesion in the left cerebellar hemisphere.

The 2nd scan was performed without contrast and incorporates high resolution sagittal and coronal T2 weighted images centered on the cerebellum.

**Comparisons:** Comparison is made with MRI brain from 04/21/2011

## Findings:
Both scans demonstrate a region of abnormally increased FLAIR and T2 signal and decreased T1 signal within the anteroinferior aspect of the left cerebellar hemisphere, incorporating the lateral aspect of the left cerebellar tonsil. The size has not changed significantly between the two scans, measuring approximately 1.4 cm AP, 1.1 cm rostrocaudal and 1.1 cm transverse.

There are two components to the lesion, an ovoid nodular appearing component located medially and a somewhat crescentic component located laterally, connected by a thin line of altered signal as shown on coronal T2 weighted image 23 from 9/8/11. This suggests that the more lateral lesion may represent edema that is associated with the nodular component. The spectroscopy study demonstrates relatively decreased NAA peak relative to choline and creatinine. This pattern is nonspecific but is suggestive of neoplasm.

In view of the absence of contrast enhancement on the initial scan, this also suggests low grade neoplasm such as astrocytoma. Absence of significant interval change between the time of the two scans also suggests low grade lesion. Absence of enhancement would also be incompatible with active inflammation. It is noted that some fungal or viral processes may not exhibit enhancement. Enhancement could also be suppressed by steroids, if given prior to the initial scan. A solitary focus of demyelination would be unusual at age 8, but cannot be excluded. Follow up scanning would be helpful in this regard. Gliotic changes from old insult/trauma and hamartoma are additional diagnostic considerations.

The initial scan demonstrated mucoperiosteal thickening of the paranasal sinuses, and fluid signal throughout the mastoid air cells, consistent with sinusitis and

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mastoiditis respectively. These changes resolved by the time of the 2nd scan. There is no evidence of intracranial hemorrhage, shift of midline structures, or extracerebral fluid collections. The major vascular structures exhibit normal signal voids consistent with patency. There is no Chiari malformation or hydrocephalus demonstrated.

## Impressions:

1. Left cerebellar hemisphere lesion is unchanged between two scans obtained approximately 4.5 months apart. The proton spectrum demonstrates relative decrease in the height of the NAA peak as discussed above, suggesting a low grade neoplastic process such as astrocytoma orhamartoma. Absence of enhancement would be atypical of a high grade neoplastic process such as hemangioblastoma, unless there had been administration of steroids prior to the time of the initial scan which was obtained post contrast.

   Differential diagnostic considerations in order of likelihood are:

   - Low grade neoplasm or small hamartoma (Dysplastic Cerebellar Gangliocytoma)
   - Gliosis related to remote insult/trauma
   - Cerebellitis (fungal/parasitic) possible but considered less likely

   Serial scanning would be helpful to assess the long term stability of this lesion.

2. Sinusitis and mastoid changes that were present at the time of the initial scan had resolved by the time of the 2nd scan.



## Recommendations:

In the appropriate clinical setting, serial MR scanning is recommended to assess for stability of this lesion. If abnormality should progress/worsen, then more aggressive workup (biopsy) should be considered unless the patient's clinical symptoms warrant this sooner.

**MetisMD Quality Score 4:** Exam Of Good Diagnostic Quality. No Limitations.

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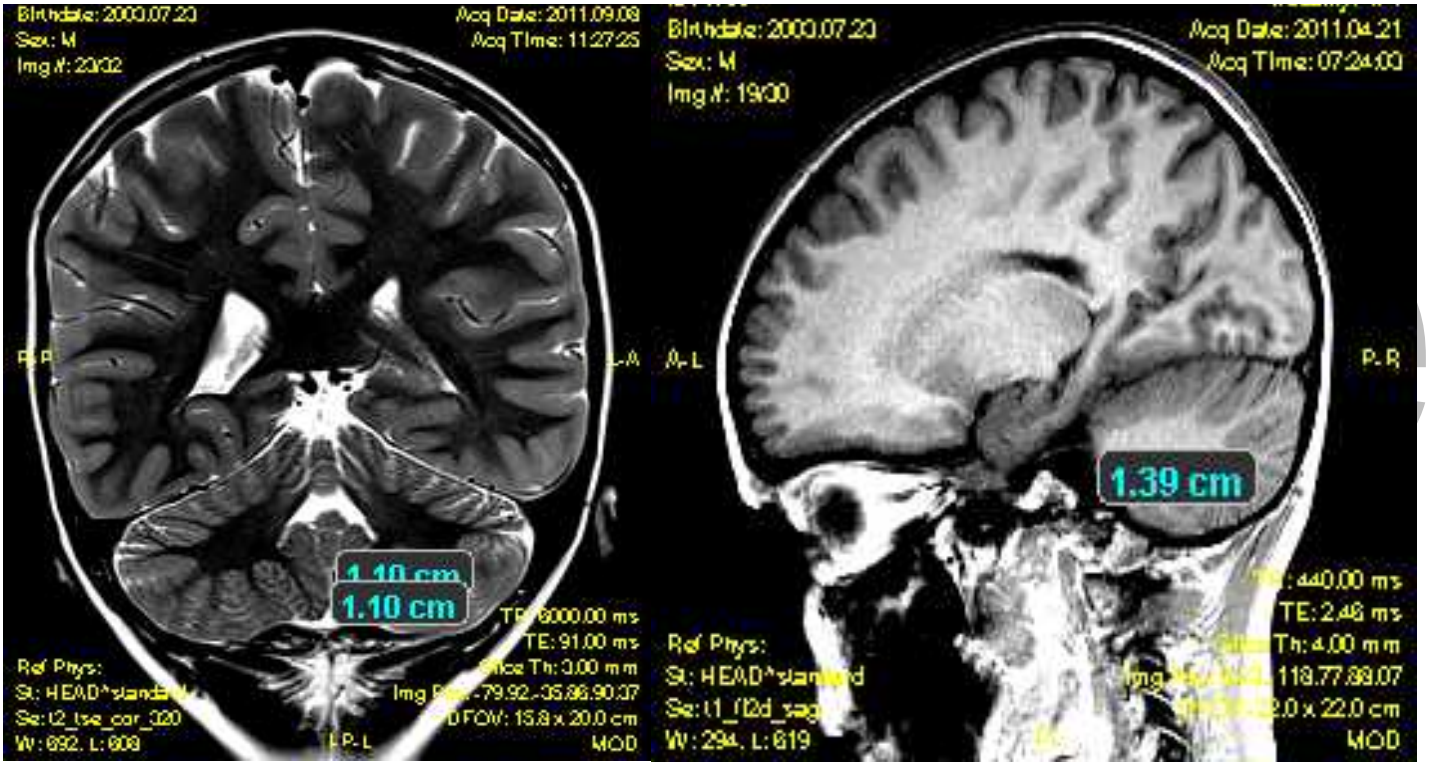
Gregory Goldstein, M.D.
*Board Certified Radiologist*
*Diplomate, American Board of Radiology*

Key Images:

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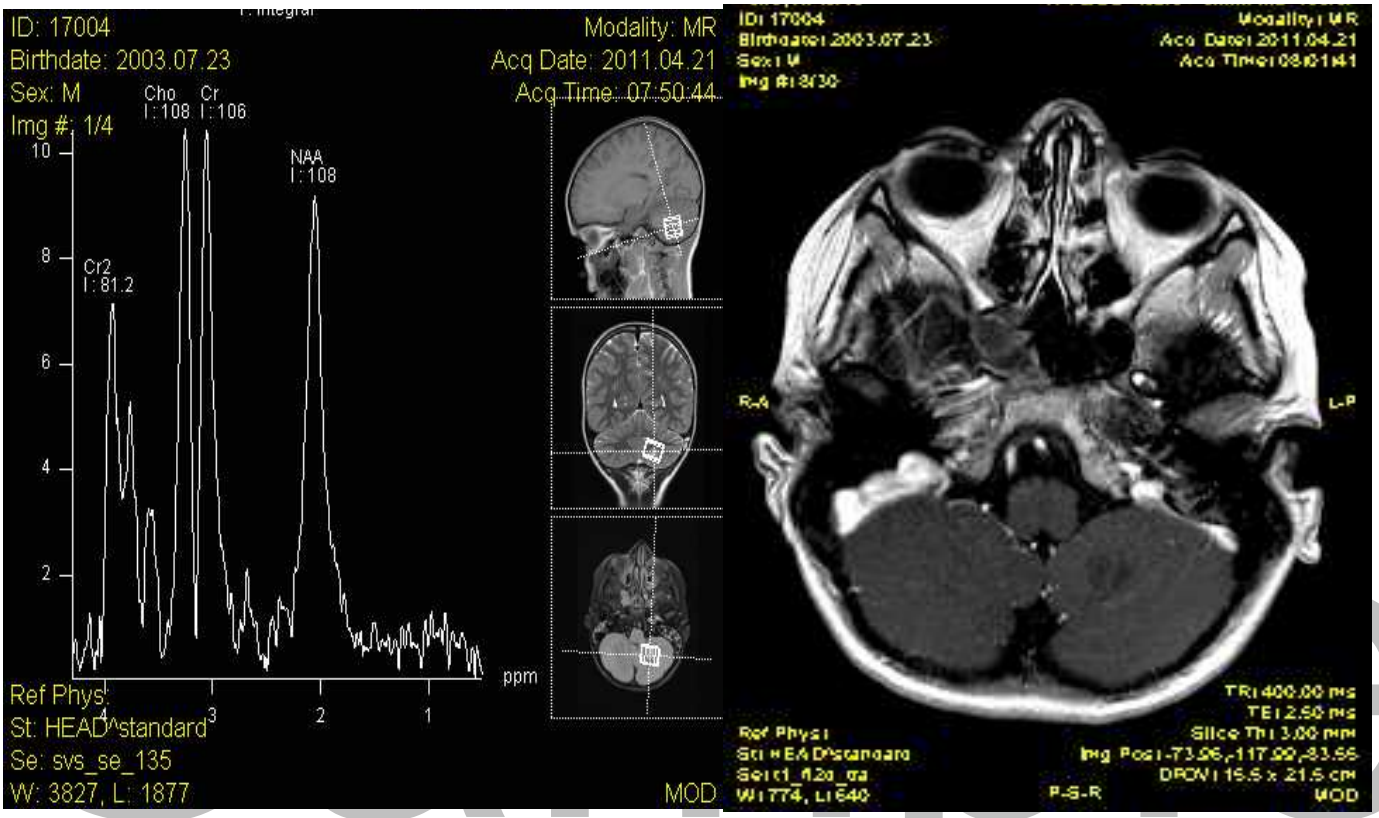




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