

### Title and Author(s)

Include Title of your submission and any collaborator as co-authors

Title: **Optic Gliomas in Children**

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### Introduction or Patient History

A twelve-year-old female was diagnosed as having an optic glioma in April 2004. The patient underwent both radiation and chemotherapy, and has performed two previous MRI follow-up exams. Her tumor originated in the optic chiasm and extended along the optic tracts bilaterally, causing a mass effect of the third ventricle towards the patient's right side. On October 21, 2004 a follow up exam was performed to evaluate her response to treatment.

### Patient Preparation and Scan Set up

The patient was screened prior to her MRI exam. She was placed supine on a GE Signa 1.5T scanner table with her head placed in the head coil. We placed two sponges next to her head in order to increase patient comfort and decrease possible motion. The patient was also given earplugs to minimize the noise of the MR scanner. 7cc of gadolinium were administered halfway through the examination.

### MR Imaging Parameters

The imaging parameters used are as follows:

Pulse Sequence	TR	TE	Field of View	# of slices	Slice Thickness	Matrix	NEX / Averages
Sagittal T1	366	14	24	16	5 skip 2	256x192	2
Axial FLAIR	9000	159	24	20	5 skip 2	256x192	1
Axial T2	3366	104	24	20	5 skip 2	256x256	2
Axial T1	466	14	24	20	5 skip 2	256x192	2
Axial DIFFUSION	5000	95.1	32	24	5 skip 1	128x128	1
Coronal T1	500	14	17	20	3 skip 1	256x192	3

**7cc Gadolinium Administered**

Sagittal T1 + gad	466	20	24	16	5 skip 2	256x192	2
Axial T1 + gad	416	14	24	20	5 skip 2	256x192	2
Coronal T1 + gad	433	14	17	20	3 skip 1	256x192	1.5

**Findings and Discussions**

When compared to the previous MRI exam, the patient seems to be responding positively towards both radiation and chemotherapy treatment. The large optic glioma shrunk in size from 4.4x2.9 cm to currently measuring at 3.9x2 cm. The ventricles appear to be normal with no mass effect of the third ventricle occurring. There still appears to be some enhancement within the cerebral peduncles and optic tracts. However, the patient has no new tumors presently and shows great progress.

**Conclusions**

Through the duration of the MRI scan on this 12 year old patient I became very interested in exactly how optic gliomas originate, how they are caused, and I wanted to know as much information about this case as I could. I love children so it was painful to see such an amazing little girl look so terrified and sad. I discovered that optic gliomas have no apparent cause, they appear randomly and are usually diagnosed by MRI or CT scans. The most common symptoms of such a tumor are vision loss and headaches. This type of cancer spreads very slowly, which is good news to all patients who are diagnosed with this. I did a little research and came to find out that the main reason for the symptoms is because the tumor puts pressure and displacement onto the normal optic nerve tissue. MRI exams are one of the best ways of detecting optic gliomas and also the best way to follow up treatment of the tumor.

**References**

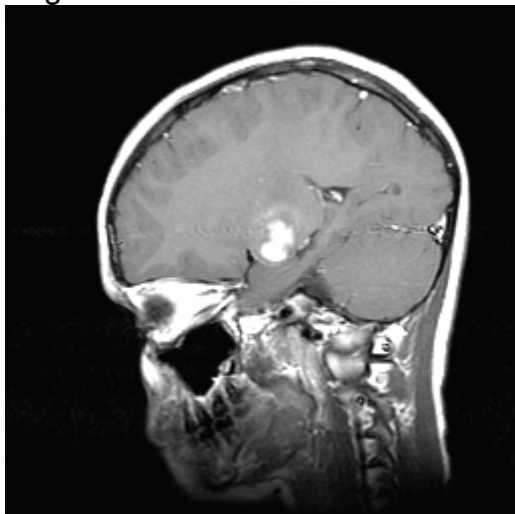
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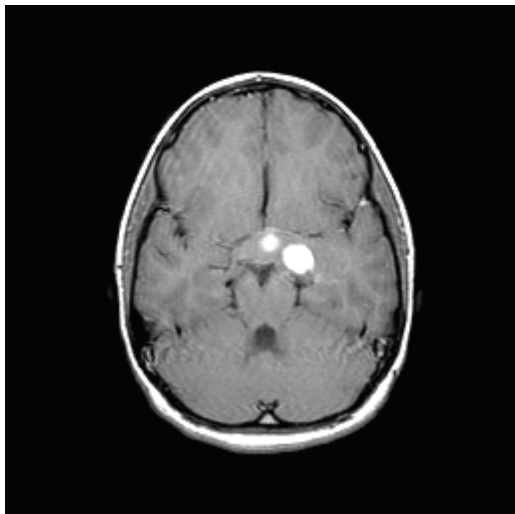
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## Images

Sagittal T1 + Gad



Axial T1 + Gad



Coronal T1 + Gad

