

THE VOMIT (VICTIMS OF MEDICAL IMAGING TECHNOLOGY)

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Every day we come across many patients who face a trigger of investigations due to some kind of misdiagnosis due to multiple reasons. One of the reasons is that we the radiologists are either not aware of or we are not updated by the advancing medical technology. Mostly doctors are seen putting a full stop on their learning once they acquire some professional degree.

My first story of this series is about a five-year-old boy, student of KG and eldest son of his parents. The child noted after spending a year at school that his eyesight was deteriorating gradually in August 2019. The child was taken to the nearby general practitioner who satisfied the parents that all is under control. After repeated and persistent complaints his parents took him to a dedicated largest eye care facility of the town in October 2019 where he was advised an MRI scan to be on the safe side. MRI was performed at a large tertiary care 800-bedded hospital and was reported by experienced and qualified radiologists. The scan was read as benign intracranial hypertension due to prominent bilateral optic sleeves. But unfortunately the optic pathway was not covered in entirety and only optic nerves were imaged. Similarly dedicated sequences for imaging intracranial nerves were not part of the routine protocol at the health facility. To add to misery the child was semi imaged (due to ignorance of upgraded sequences by the technician and radiologist) under general anesthesia, as he was too young to follow instructions. After this report the clinician decided to perform lumbar puncture. MRI was performed in Nov 2019. The parents very reluctant to undergo an invasive procedure started visiting multiple ophthalmologists, neurologists and neurosurgeons and everyone came up with a different solution and a different diagnosis. After running from one doctor to another they ultimately approached a

Neuroradiologist to take a second opinion on the scan. On a single cut in the region of optic chiasma was an enhancing focus which appeared to be an optic glioma. Patient was immediately advised to visit a pediatric oncologist.



Scan Date: Nov 2019

During this time period from November 2019 to February 2020 patient and his parents visited two GPs, five ophthalmologists, three neurophysicians and two neurosurgeons.

By mid February they were able to meet the pediatric oncologist who repeated MR scan with all latest available sequences.

Today on **10th day of March** the child had his first chemotherapy. In the interval of four months between two scans the child developed extension of mass along bilateral optic nerves.

Over this time span of four months the child had three visits to GP, three visits to Ophthalmologist at an eye

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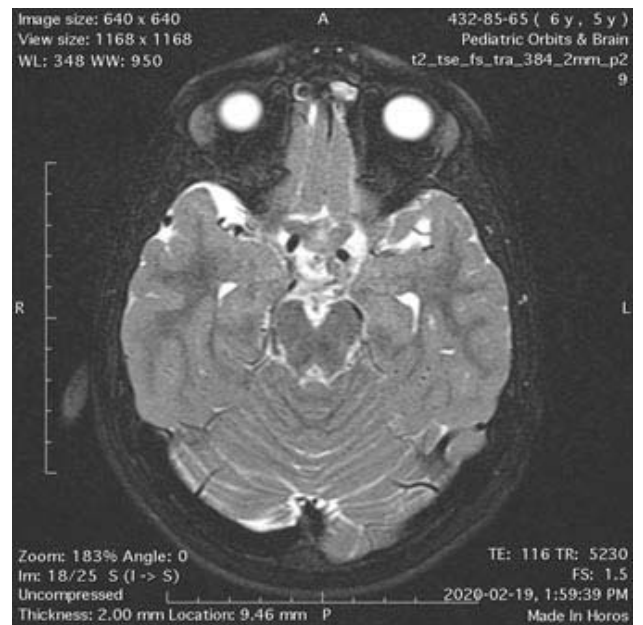


Re Evaluated scan of Nov 2019 in Jan 2020

trust, two ophthalmologists at their private clinics, three radiologists, one neurosurgeon and three neurologists!!!

Literature Review:

According to an educational exhibit published in RSNA on July 2009 with a title Appearance of Normal Cranial Nerves on Steady State Free Precession MR images it is concluded that with the use of routine MR protocols, the smaller cisternal components of



Repeat scan at another center Feb 2020

intracranial nerve cannot be evaluated in detail.¹ Be familiar with the normal anatomy and course of nerves but be familiar with the dedicated sequences available in your scanner along with their particular acronym by different vendors.²

Type of sequence	Philips	Siemens	GE	Hitachi	Toshiba
Balanced GE	Balanced FFE	True FISP	FIESTA	BASG	True SSFP

So my suggestion is emphasis on refreshing your expertise, going through latest articles, attending conferences and upgrading your knowledge.

Conflict of Interest: None

References

1. RSNA Education Exhibits. Appearance of Normal Cranial Nerves on Steady-State Free Precession MR ImagesSujay Sheth, Barton F. Branstetter, IV, Edward J. Escott Published Online: Jul 1 2009
2. <https://www.imaios.com/en/e-Courses/e-MRI/MRI-Sequences/Sequence-classification>