SMRT Student Scope Submission

Title and Author(s)

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

Title: Pituitary Tumor, Status Post Surgical Excision.

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Introduction or Patient History

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A 43-year-old female was referred to the hospital of the University of Pennsylvania for post-surgical MRI of the brain. The patient had a pituitary tumor excision. MRI sequences were obtained for tumor removal conformation.

Patient Preparation and Scan Set up

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The exam was performed using a 1.5 Siemens scanner. The patient completed the written questionnaire and was screened verbally for ferromagnetic objects prior to the exam. We put the patient supine on a table with head towards the bore of the magnet. Sponges were positioned on the sides of her head to maintain positioning and avoid the artifacts. In addition sponges were used under her knees to relieve the strain on the patient's back. I gave earplugs to the patient to reduce acoustic noise. Also, the emergency ball was provided to the patient to relieve anxiety. The birdcage head coil was placed on her head with the interpupilary line parallel to the table and the head is straight. I positioned the patient so that horizontal alignment light passed through the nasion. Finally we sent the patient in to the scanner.

MR Imaging Parameters

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SEQUENCE	TR	TE	FOV	NX	SLICE THICKNESS	SKIP		
AXIAL T2	4100	87	22	2	5MM	1MM		
AXIAL FLAIR	10000	120	22	2	5MM	INTEREAVE		
SAGITTAL T1-THIN	800	18	20	2	3MM	1MM		
CORONAL T1-THIN	415	12	20	2	3MM	1MM		
AXIAL DIFFUSION	10000	110	30	1	5MM	1MM		
ADMINISTRATION	OF 20CC	OF	GADOLINIUM					
SAGITTAL T1 POST	780	20	20	2	3MM	1MM		
CORONAL T1 POST	760	15	20	2	3MM	1MM		
AXIAL T1 POST	400	12	22	1	5MM	1MM		

Findings and Discussions

MRI of the brain with attention to pituitary gland (thin section unenhanced and enhanced sagittal and coronal t-1 weighted) and the sequences mentioned above confirmed the findings of CT scan. Based on the report," there are changes of recent transsphenoidal pituitary resection. T1 hyperintense material is identified in the sella. The pituitary infundibulum is in the midline. There is minimal residual enhancing tissue in the sella, which likely reflects the residual pituitary gland. There is no compression on the optic chiasm. The cavernous sinuses appear normal. There is no suprasselar mass. There is no intracranial hemorrhage, extracerebral fluid collection, and midline shift or mass effect. Cerebral volume is normal for age. There is no pathologic enhancement. There are bilateral fluid levels in the maxillary sinuses, greater on the left side with evidence of layering. There is partial opacification of the ethmoid air cells and the frontal sinus."

Conclusions

I learned that pituitary tumor is neoplastic disease with unknown etiology, the growth rate may vary and they can become quite large. Most likely tumor invades surrounding tissues and they represent 10-15% of all intracranial tumors. Also, pituitary tumors incidentally found in 10% of autopsies. Some symptoms include increased serum prolastin levels, impotence or become infertile for males, menses might stop or become irregular and breast begins to produce milk in females. Besides, very common complication is visual disturbance due to optic nerve involvement and compression of surrounding structures. Pituitary tumors are treatable through surgical extraction often followed by radiation therapy. The mortality rate is low and morbidity mostly includes permanent visual lost. MRI with enhancement is excellent and most likely necessary tool in evaluation of pituitary tumors.

References

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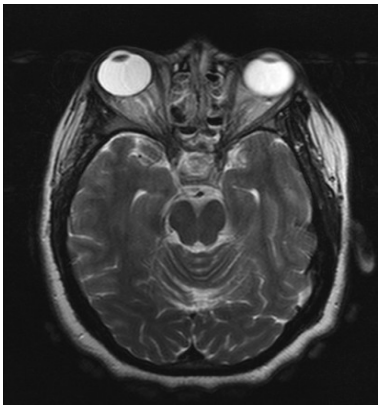
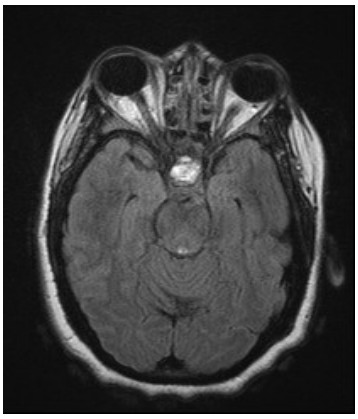
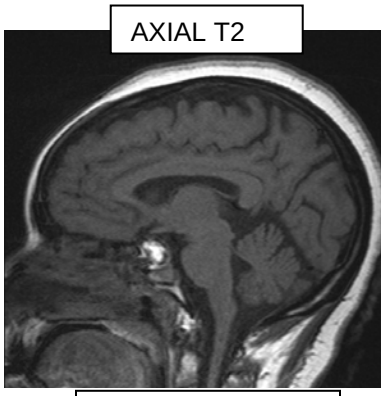
- CONCEPTS OF ALTERED HEALTH STATES. CAROL MATTSON PORTH. 2002 LIPPINCOTT WILLIAMS AND WILKINS.
- RADIOGRAPHIC PATHOLOGY FOR TECHNOLOGIST. JAMES D. MACE AND NINA KOWALCZYK. 2004 MOSBY, INC.
- PITUITARY TUMORS-LONG-TERM OUTCOMES AND EXPECTATIONS. CLIN NEUROSING 2001.
- REPORT OF ROENTGEN FINDINGS. DEPARTMENT OF RADIOLOGY.HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA. SHEDAR KARINA, RAD-STAFF.

Images



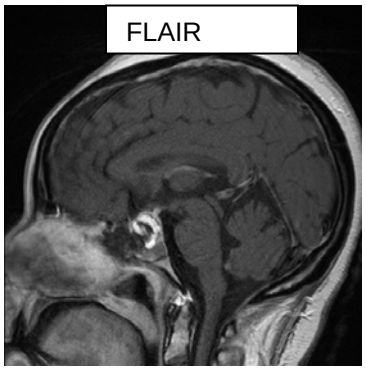
AXIAL T2



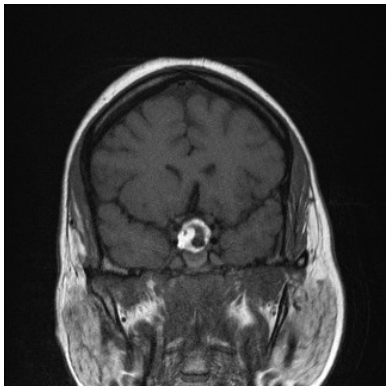


Sag T1 PRE

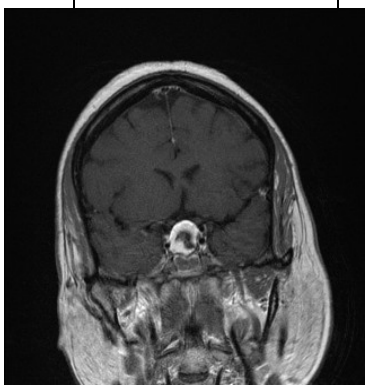
FLAIR



Sag T1 Post



COR T1 PRE



COR T1 POST