SMRT Student Scope Submission

Title and Author(s)

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

Title MRI for the Evaluation of Carotid Paragangliomas

Authors Ronald Motley

Supervisor Name / Affiliation Carolyn Kaut Roth RT (MR)
Anthony Festa RT (MR)

Date of Submission July 24, 2006

Introduction or Patient History

☐ A 51 yo Male presents with a palpable mass in the right anterior aspect of his neck. The patient has had a previous MRI exam for a carotid paraganglioma. This study was a follow-up study from July 29, 2005

Patient Preparation and Scan Set up

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A 1.5 Tesla Siemens MRI scanner was used to perform this exam. Stringent MRI safety guidelines were employed to screen the patient before allowing him to enter the room to perform the study. Foam earplugs were provided to protect the patient's hearing.
A phased-array head/neck coil was placed over the head and the anterior neck portion was positioned into place on the patient's neck. A foam wedge was placed under the knees for patient comfort. A gadolinium injection was used to better highlight the vessels and provide enhancement information of the tumors themselves.
The study was then begun.

	Sequences	Type	TR	TE	FOV	ST	Matrix	NSA	Bandwidth
Not shown	FL2d1	Localizer	24	6	24	10	512/512	1	63.670
shown	SE2d1	Sag. T1	597	14	24	5	256/192	2	63.670
Not shown	SE2d1	Axial T1	577	14	24	5	256/192	2	63.670
Not shown	TSE2d1_23	Axial T2	7210	104	24	5	256/192	1	63.670
Not shown	TIR2di_9	Axial STIR	6830	64	24	5	256/192	1	63.670
Not shown	FL2d1	Axial T1post Gad	277	4.3	24	5	256/192	1	63.670
shown	FL2d1	Coronal T1 post Gad	233	2.78	24	5	256/192	3	63.670

Findings and Discussions

A paraganglioma is a neoplasm that usually occurs in the abdomen with only about 3% found in the neck. Except for the carotid body, most paragangliomas occur in females. Most are single tumors, if they happen in multiple sites, it is usually part of a heritable syndrome, such as Carney's complex. About a quarter of all paragangliomas are due to a family history of the condition. They are almost always benign, though a very small percentage are malignant. The patient in the case I chose has the most common neck paraganglioma; the carotid type. He actually has two tumors: one on the right carotid bifurcation measuring 33mm x 24mm and one on the left carotid bifurcation; which is about 23mm x 23mm in size. Compared to his previous study on July 7, 2005 this patient's tumor has fortunately remained the same size. Even though angiography is the most sensitive of the studies used to detect paragangliomas, a MRI is often used because of it's non-invasive nature compared to angiography and it is also better at detecting small tumors than ultrasound. The most common treatment for a paraganglioma is surgical removal of the tumor. This is often done if the tumor is compressing the carotid vessel. If the tumor gets large enough, it may press against the 10^{th}, 11^{th} and 12^{th} cranial nerves. This may cause a number of symptoms to manifest themselves, such as dysphagia; which was present in this case, odynophagia and hoarseness of the voice.

Conclusions

A carotid paraganglioma is a rare tumor that despite it's dangerous location; on the carotid artery, has a very high surgical survival rate. As an interesting aside, I found out while researching this article, that carotid paragangliomas for some reason occur more frequently in persons living at high altitudes than low and in women more often than men. The prognosis for this patient is very good. It will probably be determined that his tumor is a benign one since it has not grown over the last two years.

References

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3. Bansal, Anu MD
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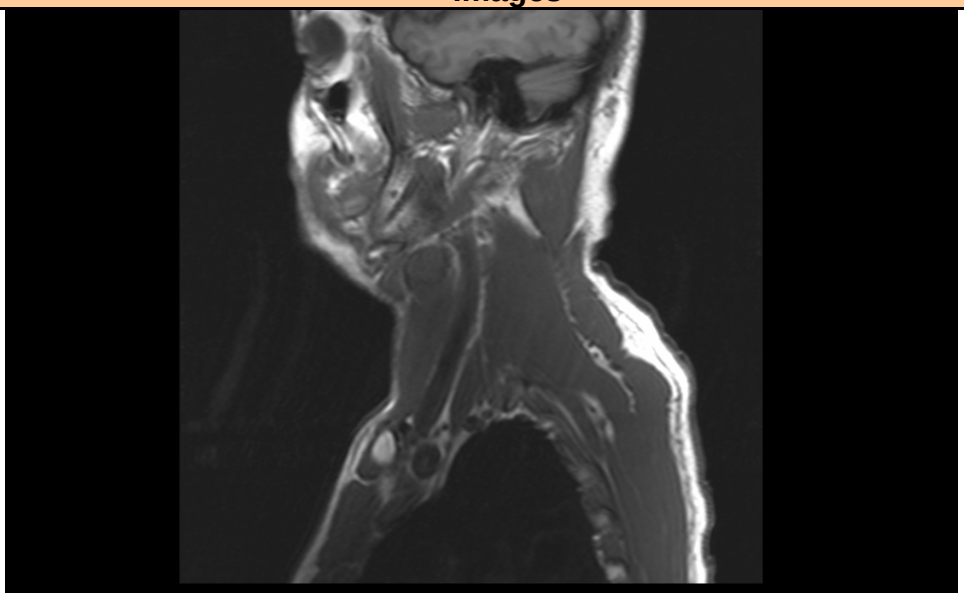
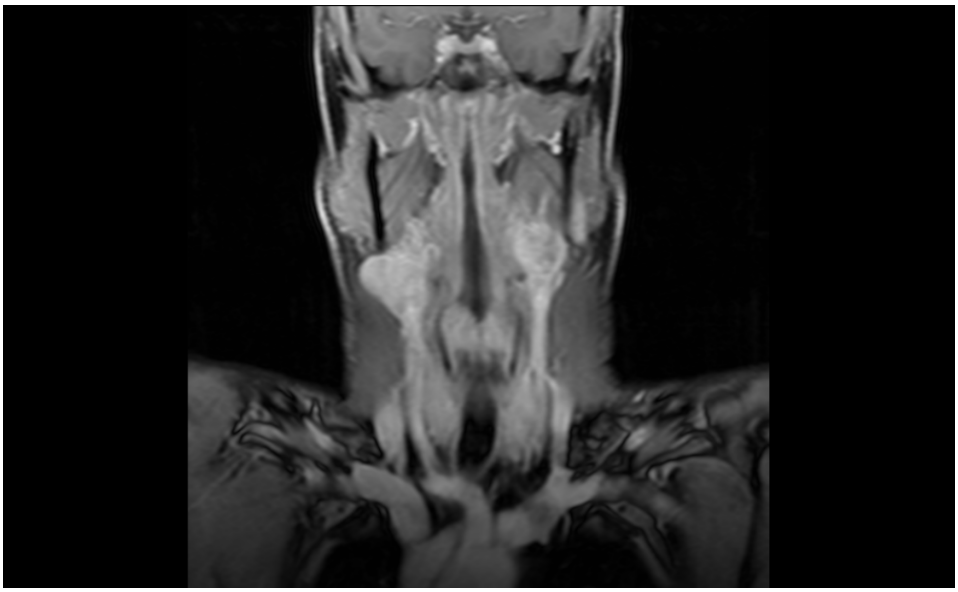
Images



☐ Sagittal T1



Coronal T1 post Gad.