
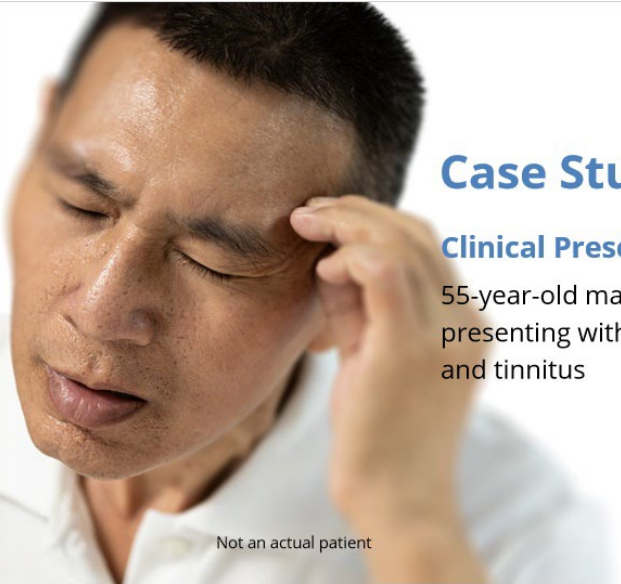


Case Study 2

1.1 Case Study 2



Case Study 2


Clinical Presentation
55-year-old male
presenting with headache
and tinnitus

Not an actual patient

Next

1.2 Pre-contrast MR

T2 Axial (Slide Layer)



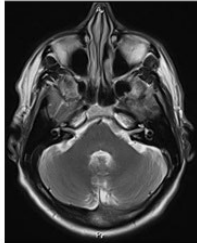
MRI of the brain with internal auditory canals/temporal bones without contrast

<click all the buttons to see more>

T1 AXIAL


T2 AXIAL

BALANCED SSFP



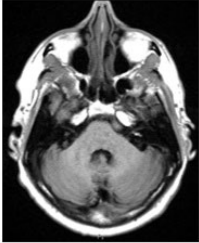
ADMINISTER CONTRAST

T1 Axial (Slide Layer)




MRI of the brain with internal auditory canals/temporal bones without contrast
<click all the buttons to see more>

T1 AXIAL **T2 AXIAL** **BALANCED SSFP**



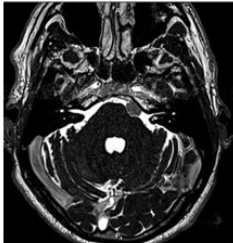
ADMINISTER CONTRAST

SSFP Axial (Slide Layer)



MRI of the brain with internal auditory canals/temporal bones without contrast
<click all the buttons to see more>

T1 AXIAL **T2 AXIAL** **BALANCED SSFP**



ADMINISTER CONTRAST

1.3 Administer Contrast

FULL PRESCRIBING INFORMATION

WARNING: NEPHROGENIC SYSTEMIC FIBROSIS (NSF)

Gadolinium-based contrast agents (GBCAs) increase the risk for NSF among patients with impaired elimination of the drug. Avoid use of GBCA in these patients unless the diagnostic information is essential and not available with non-contrast MRI or other modalities. NSF may result in fatal or debilitating fibrosis affecting the skin, muscle, and internal organs.

- The risk for NSF appears highest among patients with:
 - Chronic, severe kidney disease (GFR < 30 mL/min/1.73 m²), or
 - Acute kidney injury.
- Screen patients for acute kidney injury and other conditions that may reduce renal function. For patients at risk for chronically reduced renal function (e.g., age > 60 years, hypertension, diabetes), estimate the glomerular filtration rate (GFR) through laboratory testing (5.1).
- For patients at highest risk for NSF, do not exceed the recommended Clariscan dose and allow a sufficient period of time for elimination of the drug from the body prior to any re-administration (see [Warnings and Precautions](#) (5.1)).

1 INDICATIONS AND USAGE

Clariscan is a gadolinium-based contrast agent indicated for intravenous use with magnetic resonance imaging (MRI) in brain (intracranial), spine and associated tissues in adult and pediatric patients (including term neonates) to detect and visualize areas with disruption of the blood brain barrier (BBB) and/or abnormal vascularity.

2 DOSAGE AND ADMINISTRATION

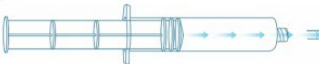
2.1 Dosing Guidelines

For adult and pediatric patients (including term neonates), the recommended dose of Clariscan is 0.2 mL/kg (0.1 mmol/kg) body weight administered as an intravenous bolus injection, intrathecally or by power injector, at a flow rate of approximately 2 mL/second for adults and 1.2 mL/second for pediatric patients. Table 1 provides weight-adjusted dose volumes.

Table 1: Volumes of Clariscan Injection by Body Weight

Body Weight		Volume
Pounds (lb)	Kilograms (kg)	Milliliters (mL)
	2.5	0.5
5.5	5	1
11	5	2
22	10	4
44	20	6
66	30	8
88	40	10
110	50	12
132	60	15
154	70	16
176	80	18
198	90	20
220	100	22
242	110	24
264	120	26
286	130	28
308	140	30

Administer Clariscan™ (gadoterate meglumine)

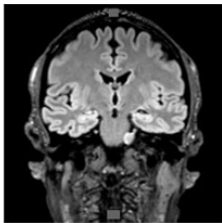


1.4 Post-contrast MR of the brain

FLAIR Coronal (Slide Layer)

Post-contrast MR of the brain

T1 AXIAL **FLAIR SAGITTAL** **FLAIR CORONAL**

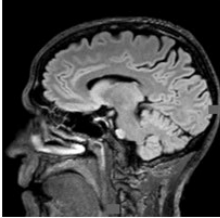


Findings

T1 Sagittal (Slide Layer)

Post-contrast MR of the brain

T1 AXIAL FLAIR SAGITTAL FLAIR CORONAL



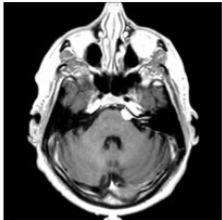
Findings

This interface displays a sagittal T1-weighted MRI scan of the brain. The scan shows the brain's anatomy in a sagittal plane, with contrast enhancement visible in the brain tissue. The interface includes three navigation buttons: 'T1 AXIAL', 'FLAIR SAGITTAL', and 'FLAIR CORONAL'. A 'Findings' button is located at the bottom right.

T1 Axial (Slide Layer)

Post-contrast MR of the brain

T1 AXIAL FLAIR SAGITTAL FLAIR CORONAL



Findings

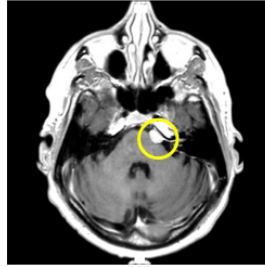
This interface displays an axial T1-weighted MRI scan of the brain. The scan shows the brain's anatomy in an axial plane, with contrast enhancement visible in the brain tissue. The interface includes three navigation buttons: 'T1 AXIAL', 'FLAIR SAGITTAL', and 'FLAIR CORONAL'. A 'Findings' button is located at the bottom right.

1.5 Findings



Findings

Small extra-axial lesion at the left lateral aspect of the pons, which shows significant enhancement on post-contrast images.



Diagnosis

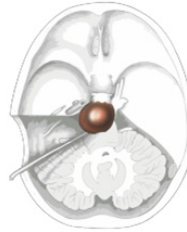
Cerebellar pontine meningioma

Clinical Information

1.6 Clinical information

Introduction

Meningiomas constitute 10% to 15% of all CPA tumors. They are frequently large at initial presentation and may extend anterior or posterior to the internal auditory canal. Meningiomas also may extend anterior to the brain stem or into the middle cranial fossa, or they may cause compression of the brain stem. These factors favor a retrosigmoid approach to these tumors.



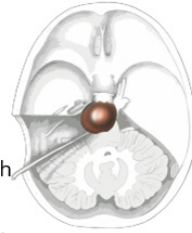
Many of the patients with meningiomas have serviceable hearing, and it can be preserved in one third of the patients by using a retrosigmoid approach. For these reasons a preoperative diagnosis of meningioma would aid in planning the surgical approach to the CPA tumor. The symptoms, physical findings, and audiovestibular test results in patients with meningiomas of the CPA are similar to those in patients with acoustic neurinomas.

Next

1.7 Clinical information

MRI appearance

Iso-intense to grey matter T1 signal, high signal on FLAIR and T2WI, and enhances vividly on post-contrast images. There is mass effect on the adjacent midbrain and pons. The mass appears separate from the seventh and eighth cranial nerves on these thick slices.



Anteriorly, the mass extends towards the right Meckel's cave, cavernous sinus and internal carotid artery. There is also associated dural thickening of the adjacent tentorium cerebelli.

Radiographic features

1.8 Radiographic features

Radiographic features: MRI

T1

Typically iso to hypointense compared to brain parenchyma

T2

High signal usually slightly hypointense to CSF, thin septations or small internal cysts may be present

FLAIR

High signal does not often suppress fully

DWI/ADC

They demonstrate no restricted diffusion

T1 C+ (Gd)

As is the case with the rest of the pineal gland, the walls of pineal cysts do not have a well-formed blood brain barrier, and as such, can enhance vividly with contrast. Enhancement is usually thin (<2 mm), smooth and confined to the rim (either complete or incomplete).

Treatment

1.9 Treatment

Treatment



Surgical treatment is the first choice for large cerebellopontine angle meningiomas, while small cerebellopontine angle meningiomas could be treated by stereotactic radiotherapy or stereotactic surgical treatment.

References

1.10 References

References:

1. Agarwal V, Babu R, Grier J, Adogwa O, Back A, Friedman AH, Fukushima T, Adamson C. Cerebellopontine angle meningiomas: postoperative outcomes in a modern cohort. *Neurosurg Focus*. 2013 Dec;35(6):E10. doi: 10.3171/2013.10.FOCUS13367. PMID: 24289118.
2. He X, Liu W, Wang Y, et al. (August 03, 2017) Surgical Management and Outcome Experience of 53 Cerebellopontine Angle Meningiomas. *Cureus* 9(8): e1538. doi:10.7759/cureus.1538
3. Laird FJ, Harner SG, Laws ER Jr, Reese DF. Meningiomas of the cerebellopontine angle. *Otolaryngol Head Neck Surg*. 1985. Apr;93(2):163-7. doi: 10.1177/019459988509300207. PMID: 3921906.
4. Bu J, Pan P, Yao H, et al. Small Cerebellopontine Angle Meningioma-Surgical Experience of 162 Patients and Literature Review. *Front Oncol*. 2020;10:558548. Published 2020 Oct 9. doi:10.3389/fonc.2020.558548.



© GE, 2022
GE and the GE Monogram are trademarks of GE.
April 2022