

Atypical meningioma

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Section: Neuroradiology

Imaging Technique: CT

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Imaging Technique: MR

Case Type: Clinical Cases

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Patient: 65 years, male

Clinical History:

Routine imaging follow up after treatment of sinonasal cancer

Imaging Findings:

Middle age patient treated for a cancer of the facial area by surgery and external irradiation. No neurological symptoms. Systematic follow up CT and MR are presented.

Discussion:

Post irradiation meningioma are a late and rare manifestation of irradiation (1). They can be either associated with low-dose x-ray therapy such as individuals treated in childhood for tinea capitis (2), or with high-dose cranial irradiation (3). The average time from radiation therapy to diagnosis is around 25 years (range 5 to 40 years (3) for high dose irradiation; the with interval is longer in meningiomas induced by lower doses of irradiation (2). These tumors have distinct characteristics: their location at the site of maximal irradiation, and features suggesting rapid growth and aggressive biological behavior (2). There is a significantly higher number of calvarial tumors, a high proportion of multiple meningiomas, a higher recurrence rate following apparent complete , and an increased number of histologically malignant meningiomas (2). MR is the imaging modality of choice (4): the aggressive behavior of radiation induced meningiomas helps to differentiate them from spontaneous meningiomas which usually present as well marginated lesions. Rapid growth and multiple location can also help to anticipate the correct diagnosis.

Differential Diagnosis List: Radiation-induced meningioma

Final Diagnosis: Radiation-induced meningioma

References:

Rubinstein AB, Shalit MN, Cohen ML, Zandbank U, Reichenthal E (1984)

Radiation-induced cerebral meningioma: a recognizable entity.

J Neurosurg Nov;61(5):966-71. (PMID: [6593438](#))

Soffer D, Pittaluga S, Feiner M, Beller AJ

Intracranial meningiomas following low-dose irradiation to the head.

J Neurosurg 1983 Dec;59(6):1048-53. (PMID: [6631499](#))

Mack EE, Wilson CB

Meningiomas induced by high-dose cranial irradiation.

J Neurosurg 1993 Jul;79(1):28-31. (PMID: [8315464](#))

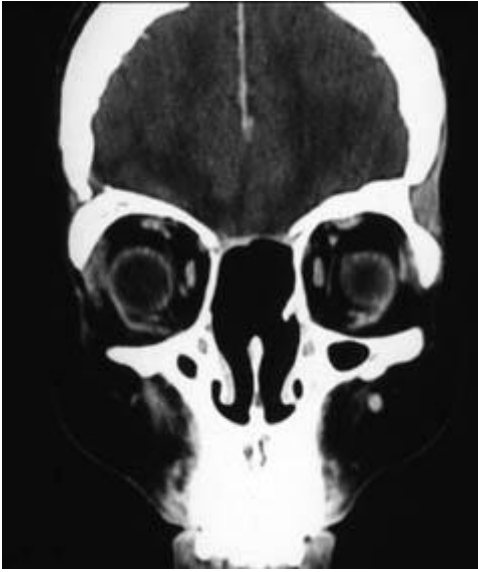
Becker M, Schroth G, Zbaren P, Delavelle J, Greiner R, Vock P, Allal A, Rufenacht DA, Terrier F (1997)

Long-term changes induced by high-dose irradiation of the head and neck region: imaging findings.

Radiographics Jan-Feb;17(1):5-26. (PMID: [9017796](#))

Figure 1

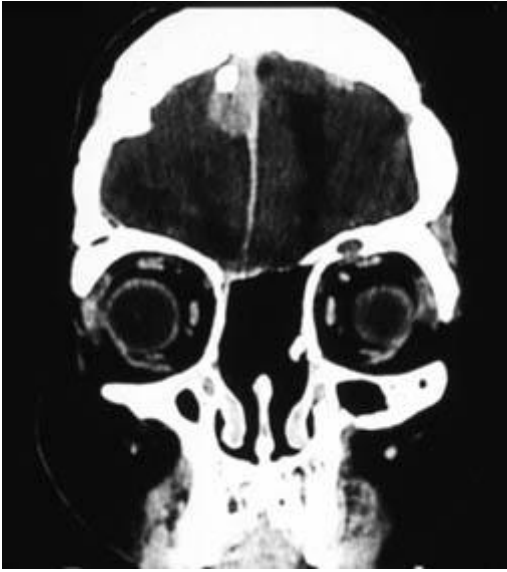
a



Description: The post contrast coronal CT shows normal post therapeutic changes at the level of the ethmoid, nasal cavity and anterior skull base. There is no intracranial lesion. **Origin:**

Figure 2

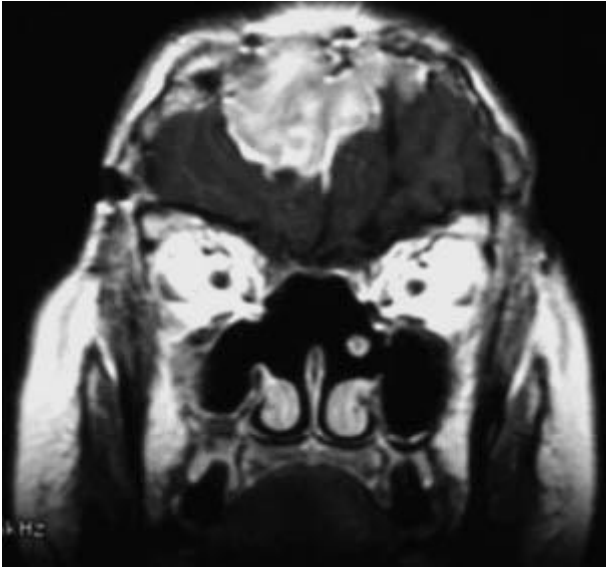
a



Description: The post contrast coronal scan reveals that an enhancing lesion adherent to the falx cerebri has appeared. **Origin:**

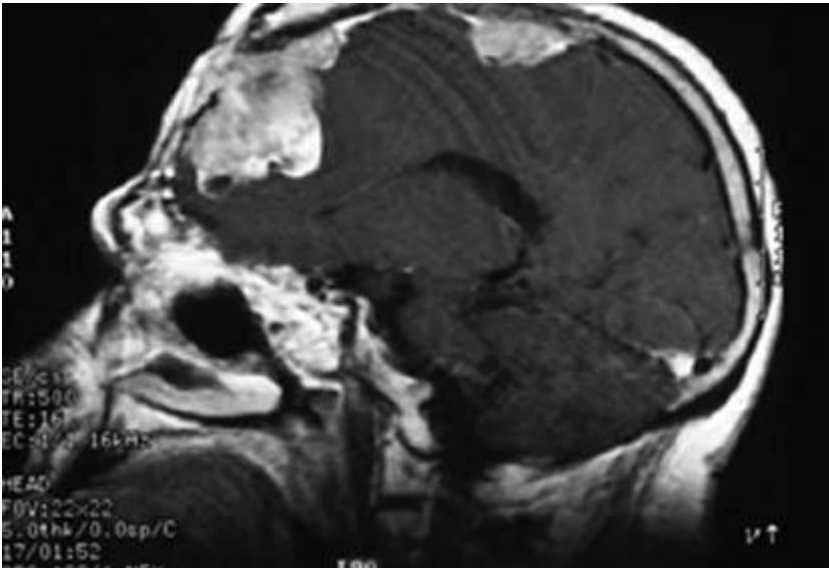
Figure 3

a



Description: Gd enhanced T1 weighted coronal view shows growth of the lesion which has invaded the falx and the contralateral side **Origin:**

b



Description: The Gd enhanced T1 weighted sagittal view displays a second tumor , with dural thickening between both lesions **Origin:**