MILIARY TUBERCULOSIS OF THE BRAIN

By
Dr. Humera Ahsan

Department of Radiology
Aga Khan University Hospital

Central nervous system (CNS) involvement occurs in 2 – 5 % of all patients with tuberculosis

CNS TB may be observed in several forms:

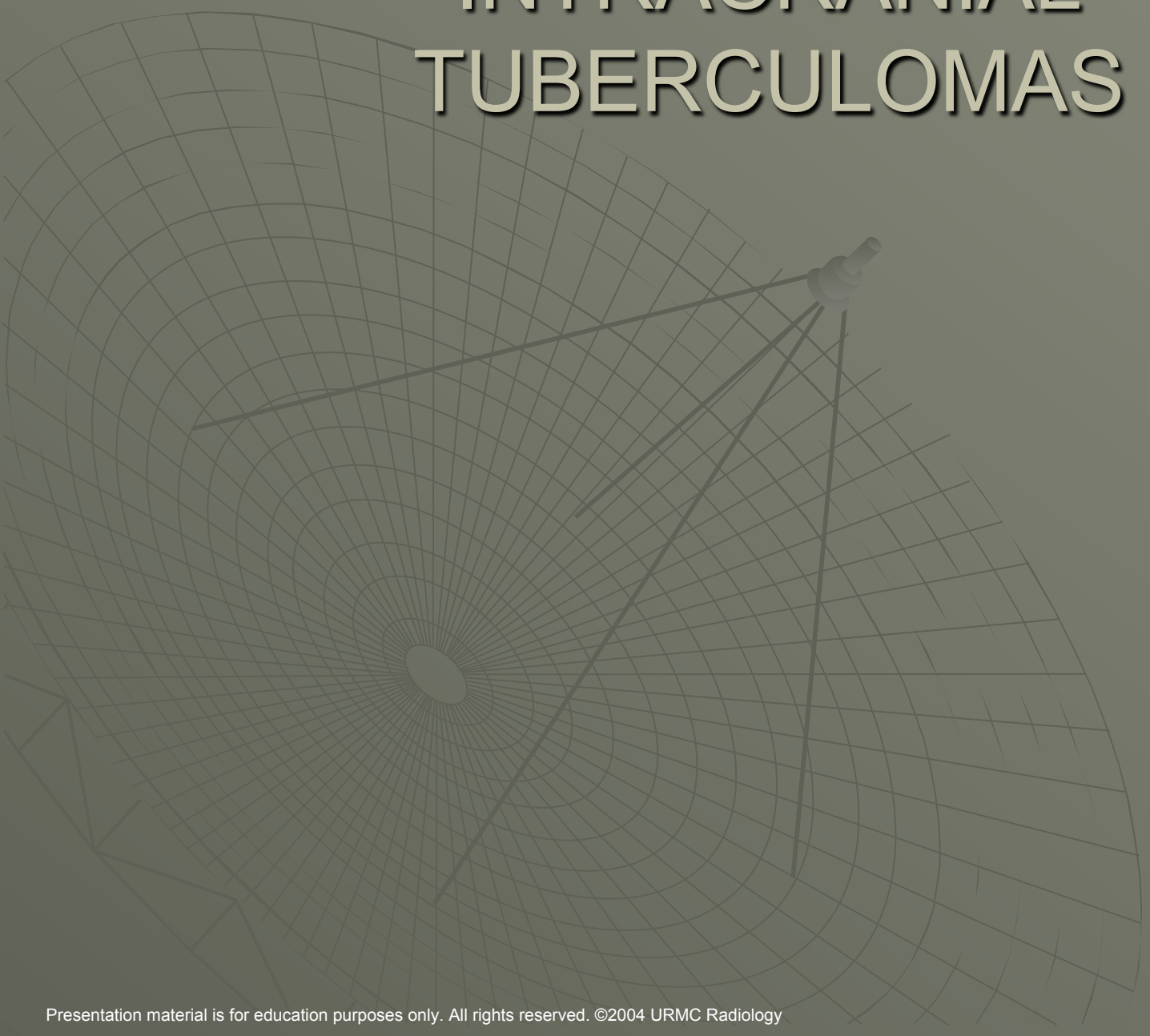
1. Intracranial or spinal tuberculous granulomas (tuberculomas)

2. Meningits

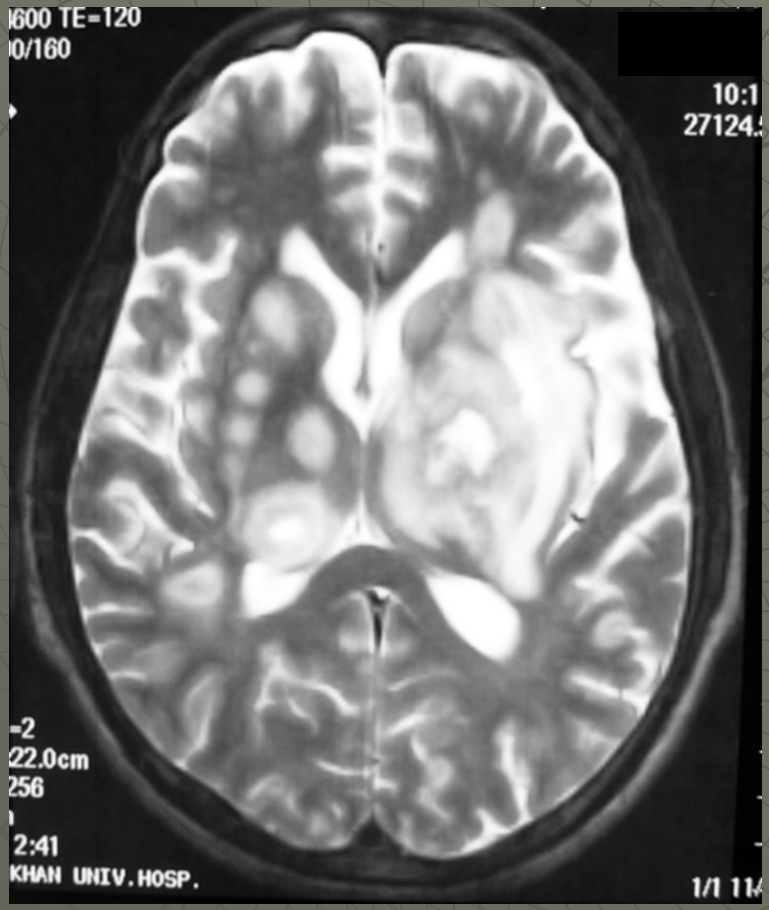
3. Tuberculous abscess formation which is relatively rare, but can be seen in immuno compromised patients.

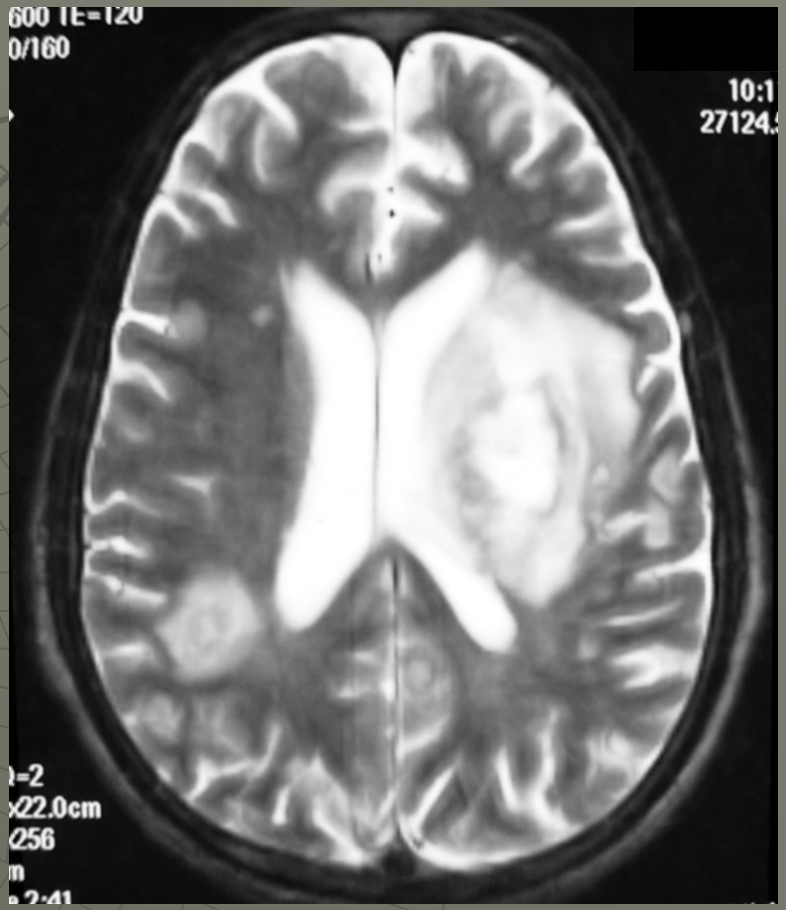
The bacilli disseminate from a pulmonary source hematogenously to the cerebrum. They often lodge at the gray-white matter junction, where they may remain dorment for years or may form tuberculous granulomas.

INTRACRANIAL TUBERCULOMAS

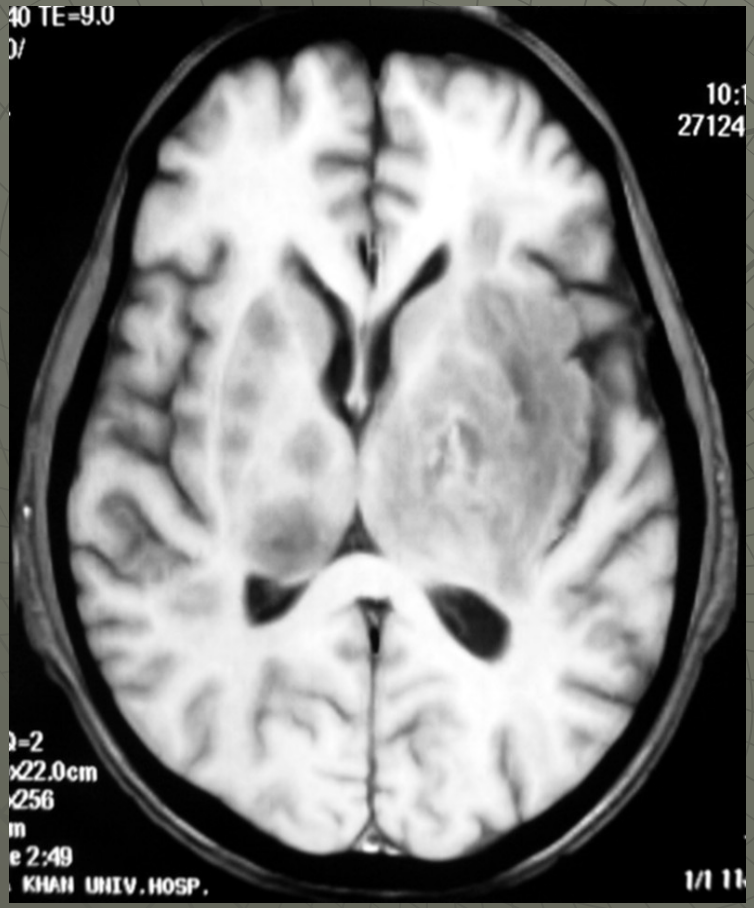


Axial T2 WT Images

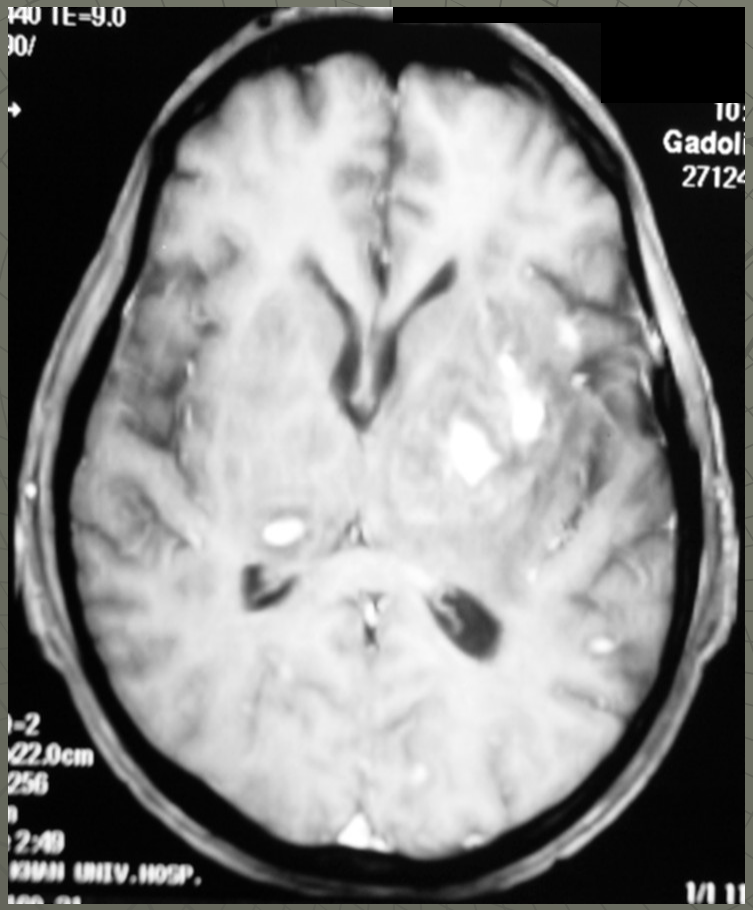


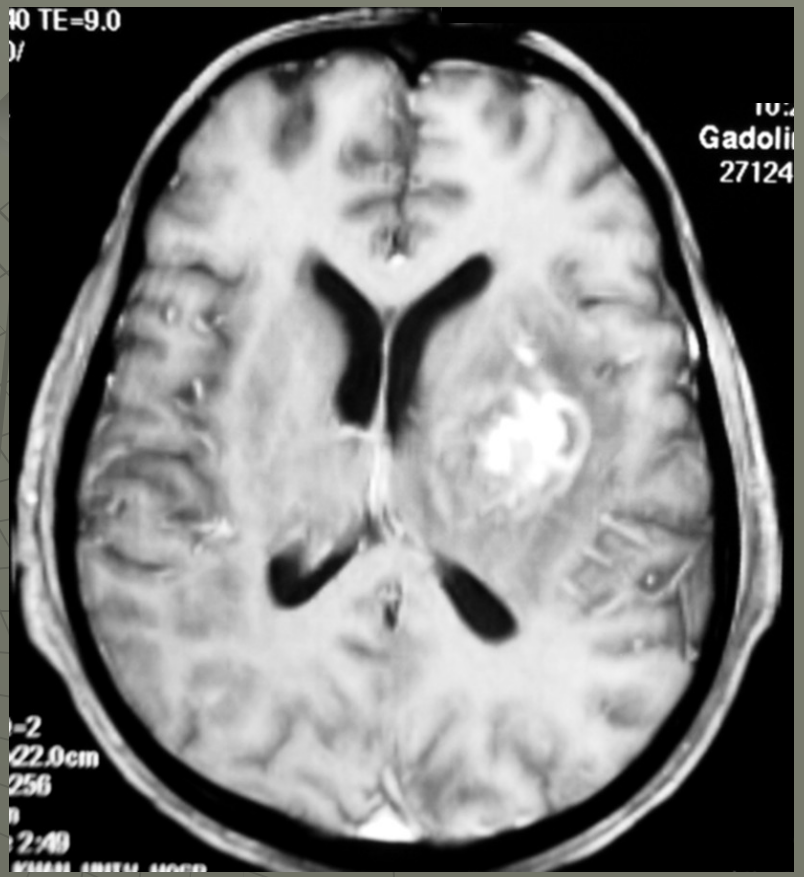


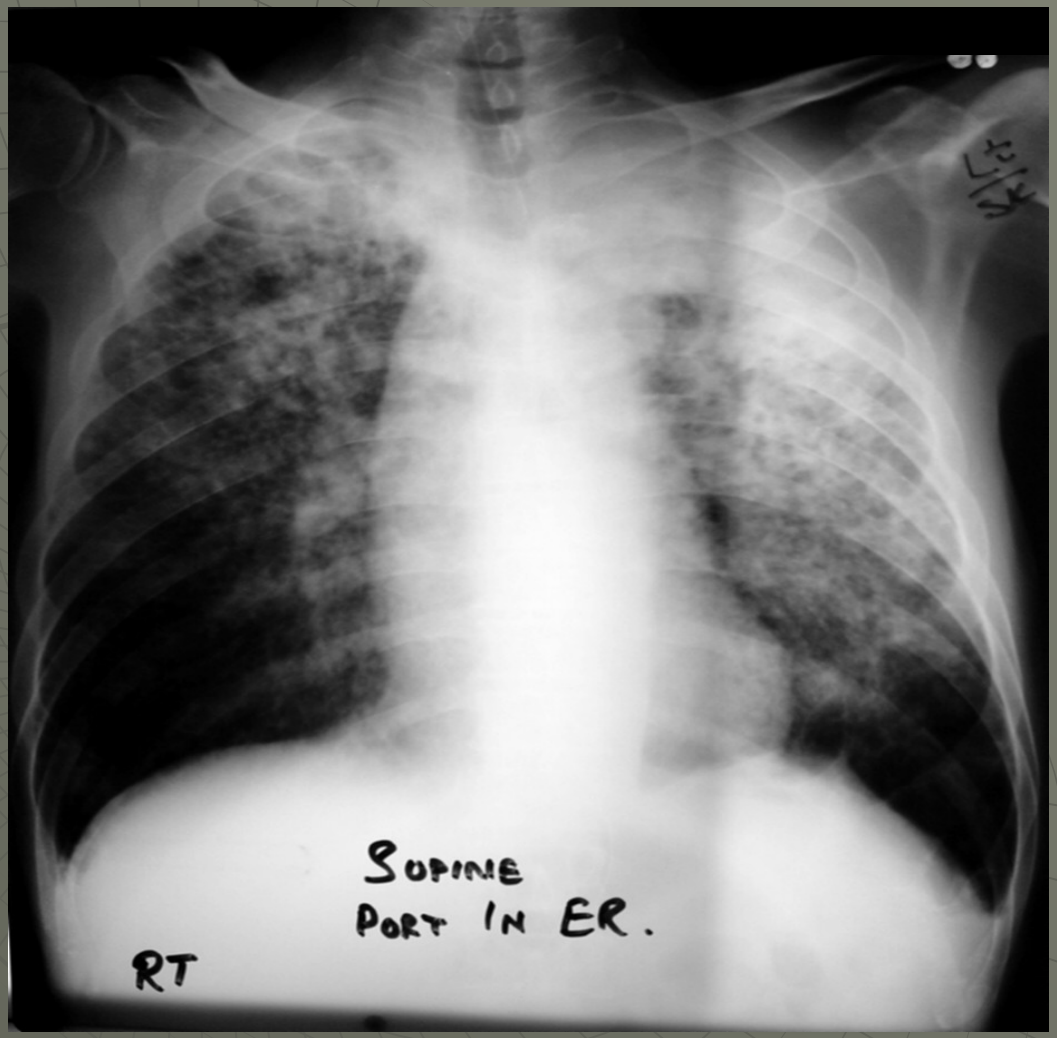
AXIAL T1 & CORONAL FLAIR



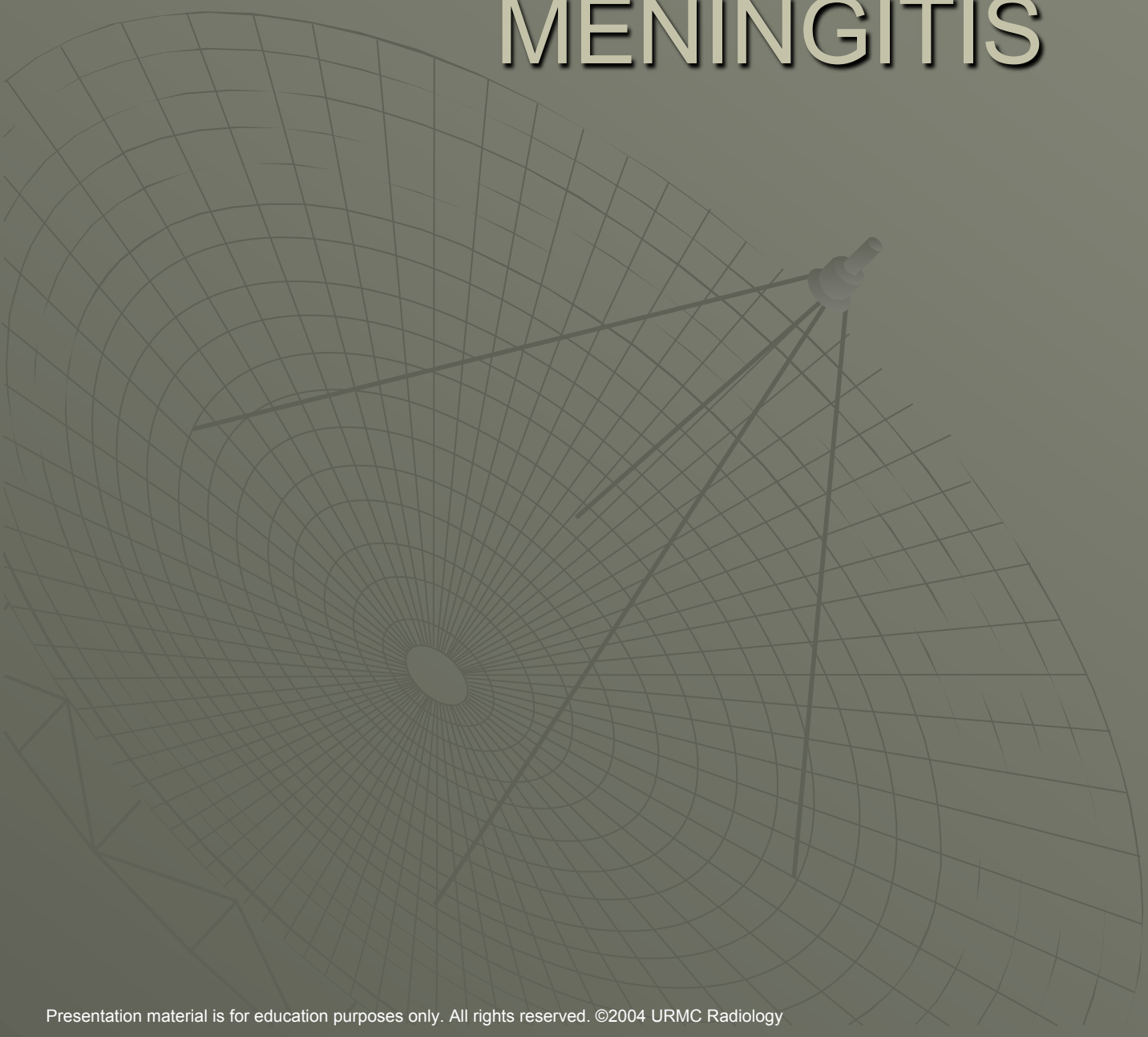
POST CONTRAST







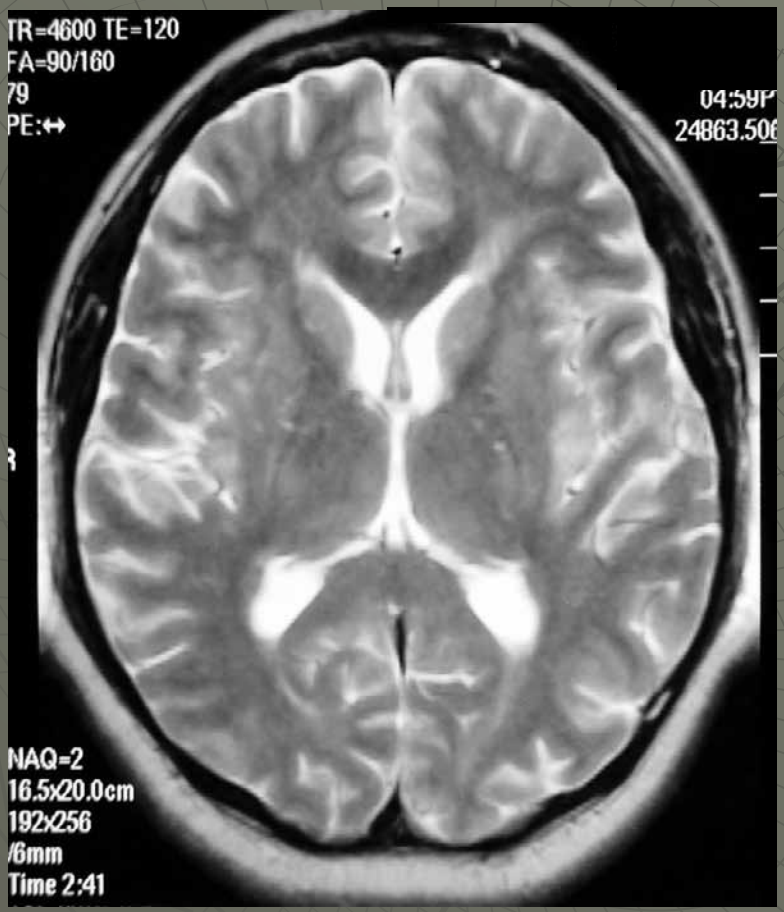
MENINGITIS

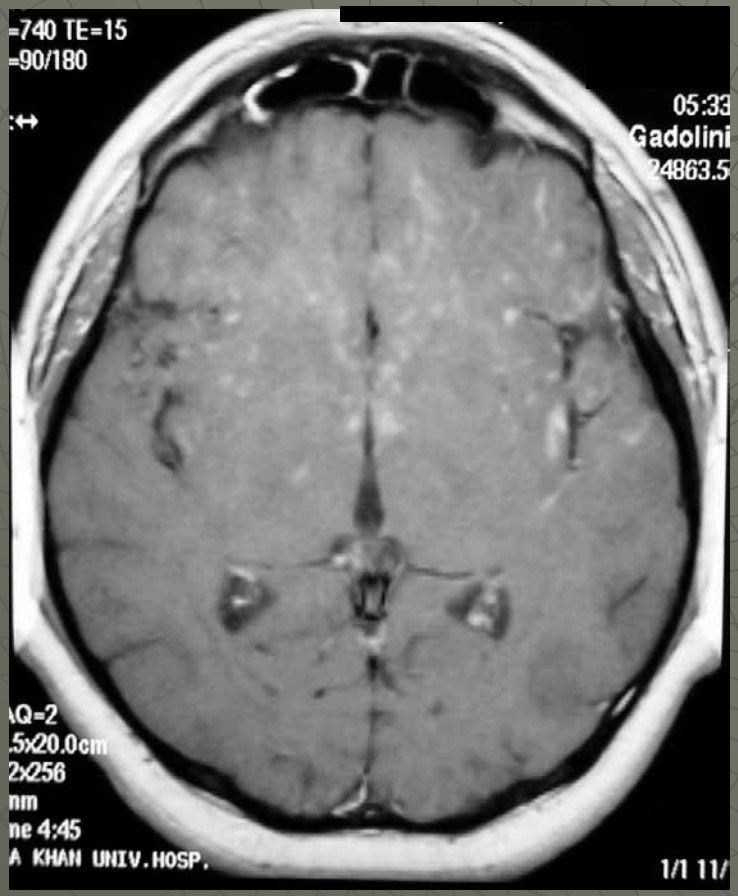


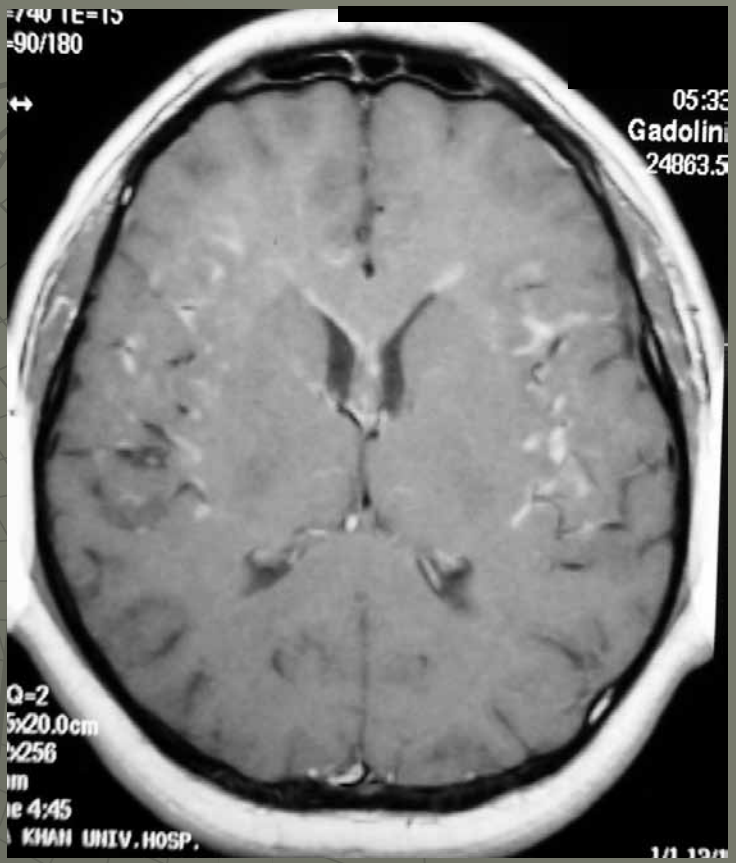
TB meningitis typically causes a thick basilar exudate that is associated with meningeal enhancement.

It results in brain edema manifested by effacement of sulci.

TB meningitis may cause communicating or non-communicating hydrocephalus, infarctions secondary to tuberculous periarteritis.

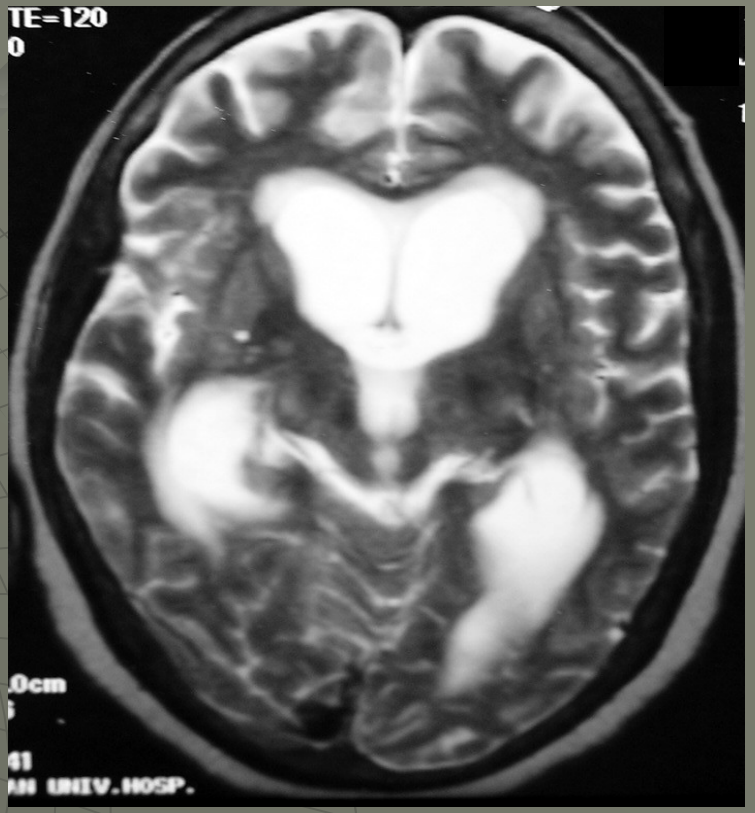


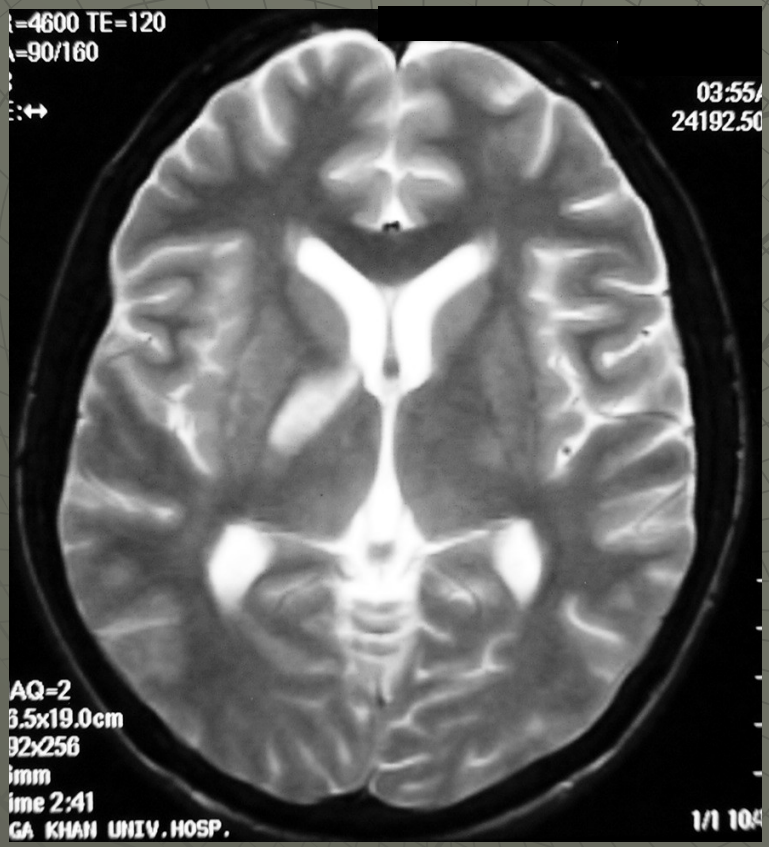




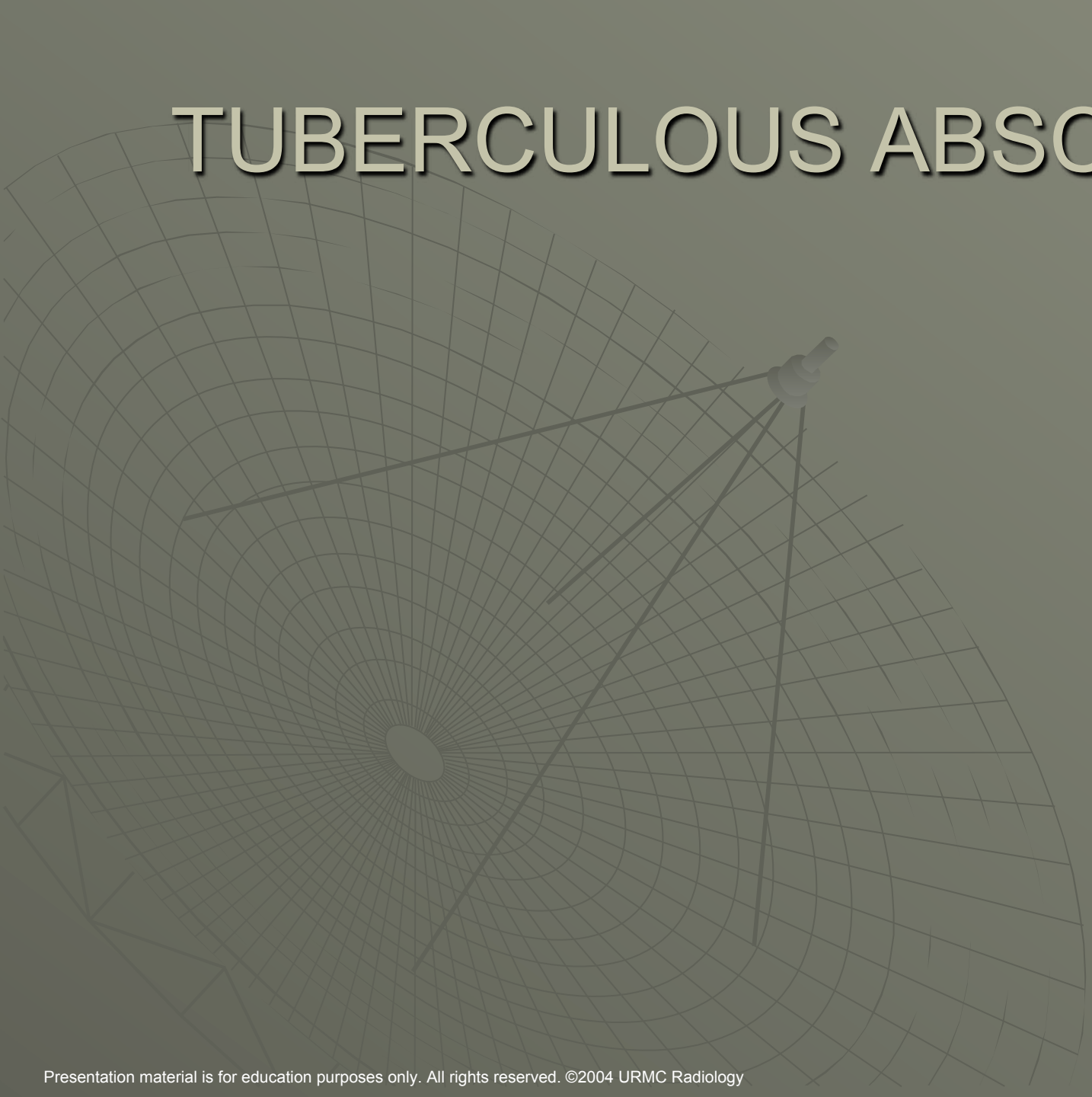
COMPLICATIONS

- HYDROCEPHALUS
- INFARCTIONS



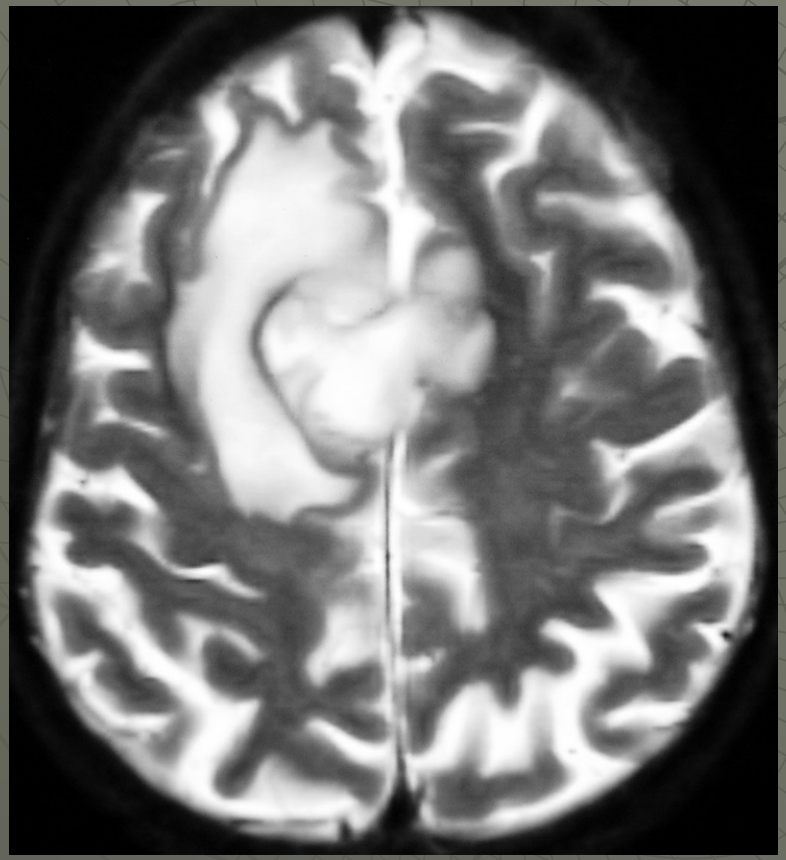


TUBERCULOUS ABSCESS

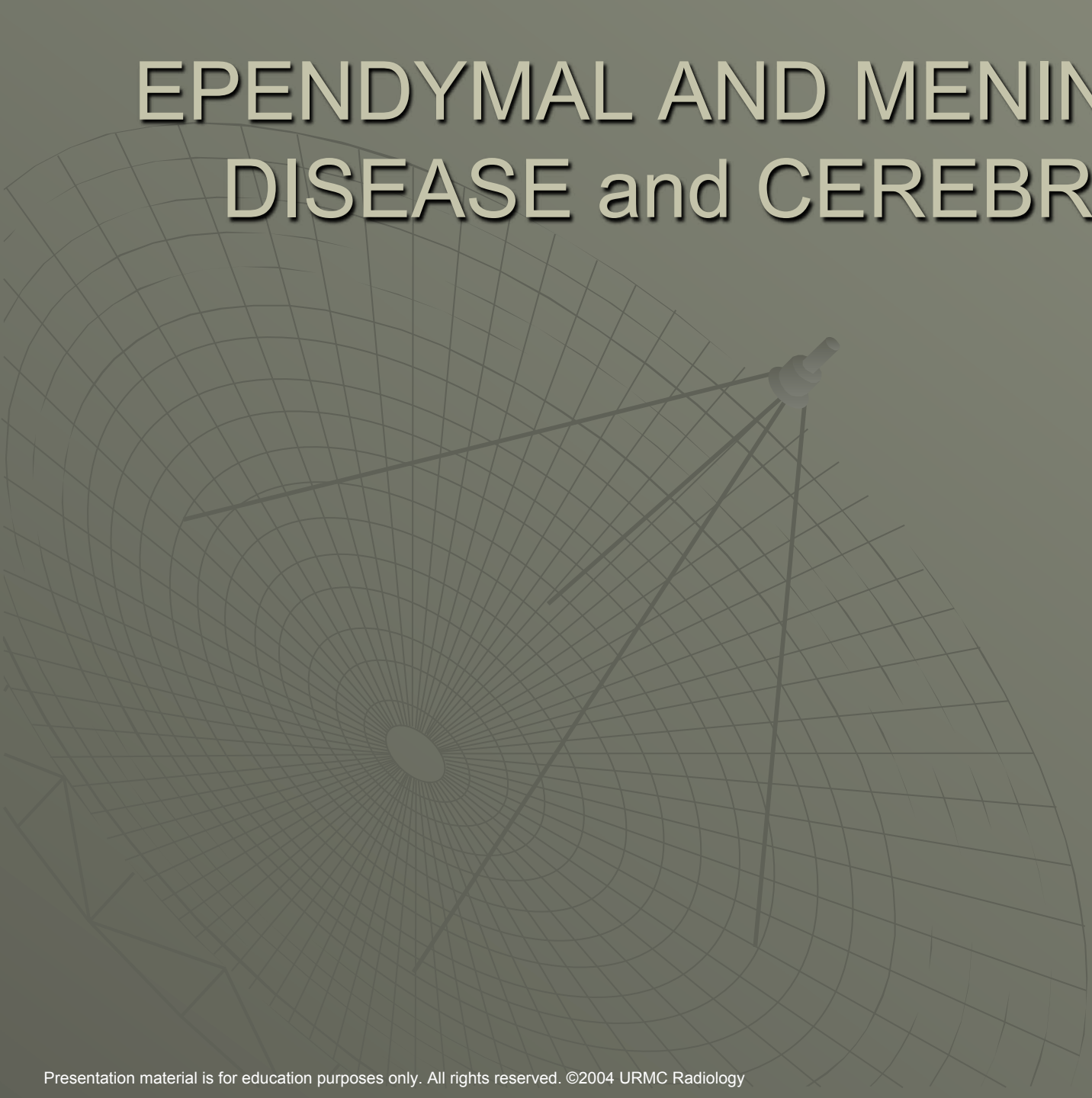


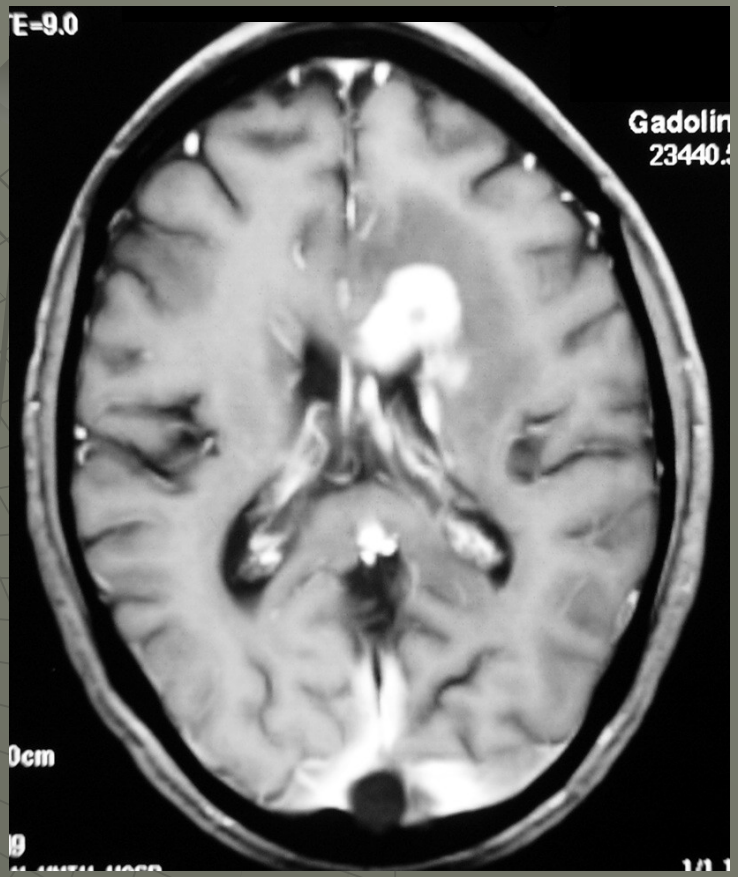
TB abscess is much larger than tuberculoma, and it is formed by semiliquid pus which contains large numbers of organisms.

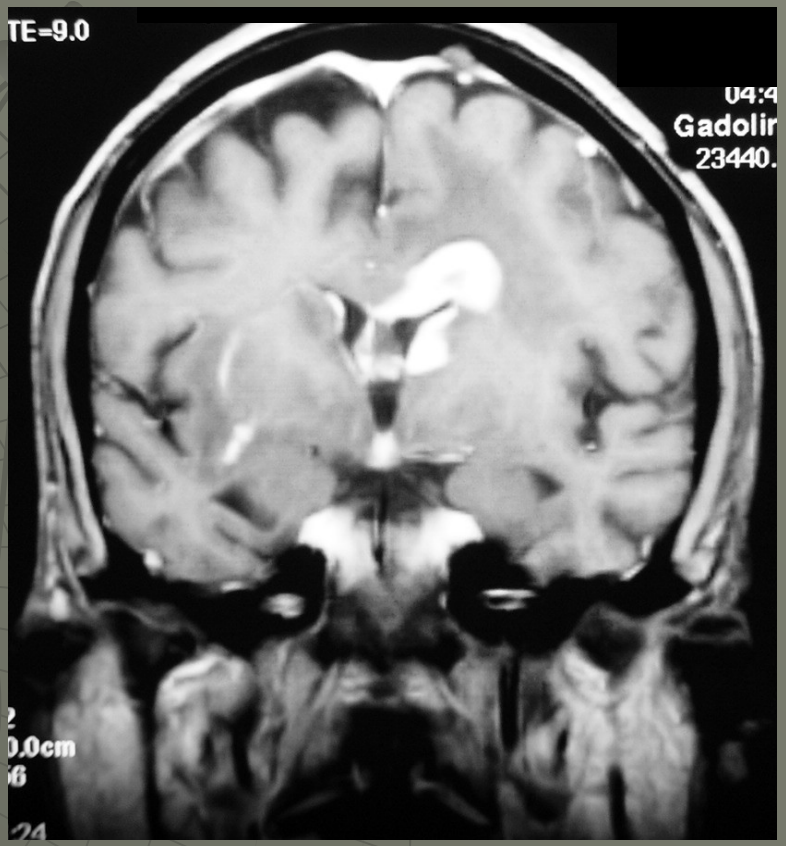
TB abscess may be unilocular or multiloculated, and it has a greater degree of surrounding edema and rim enhancement.

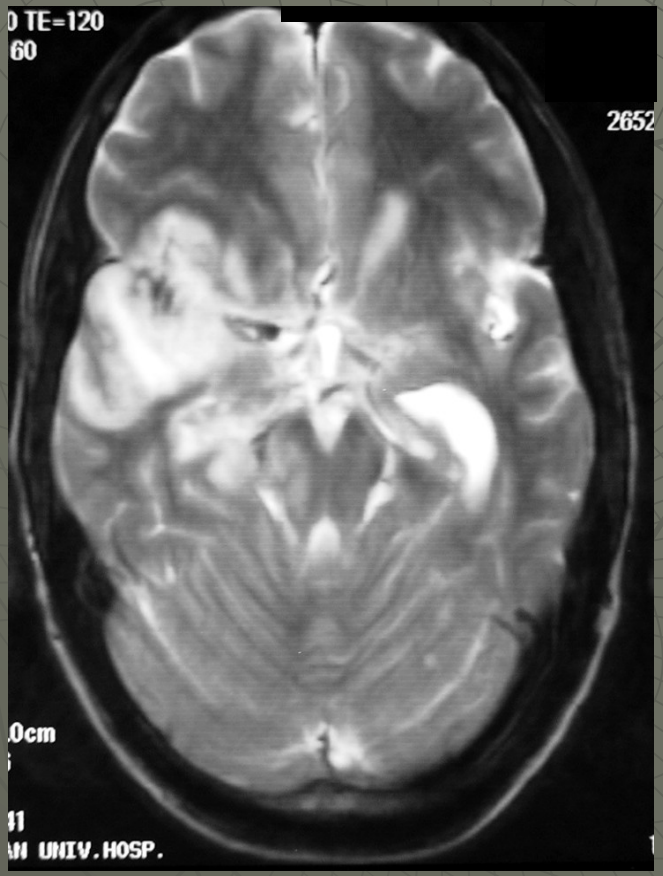


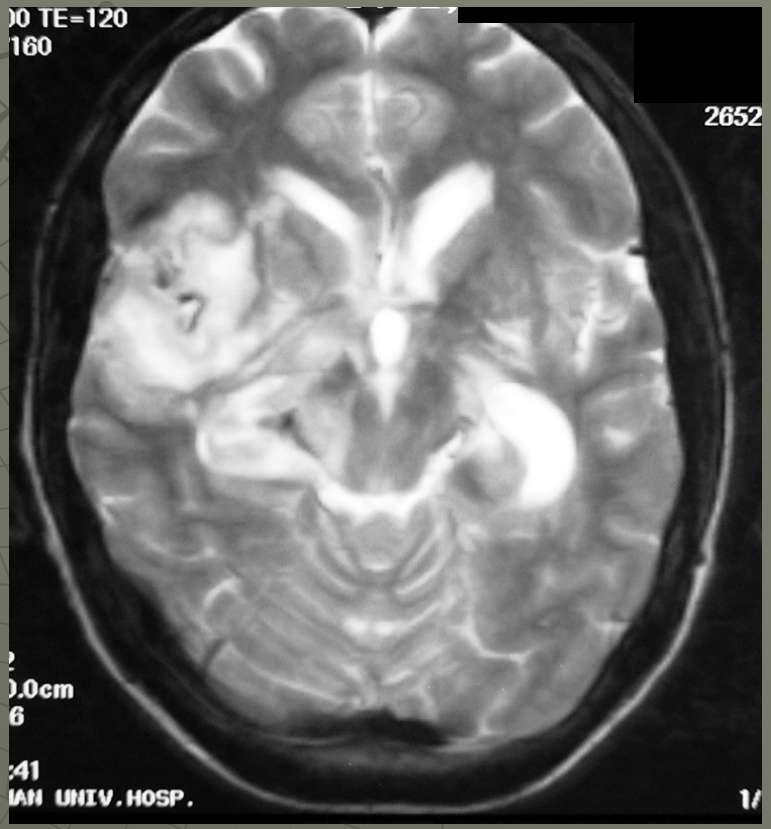
EPENDYMAL AND MENINGEAL DISEASE and CEREBRITIS

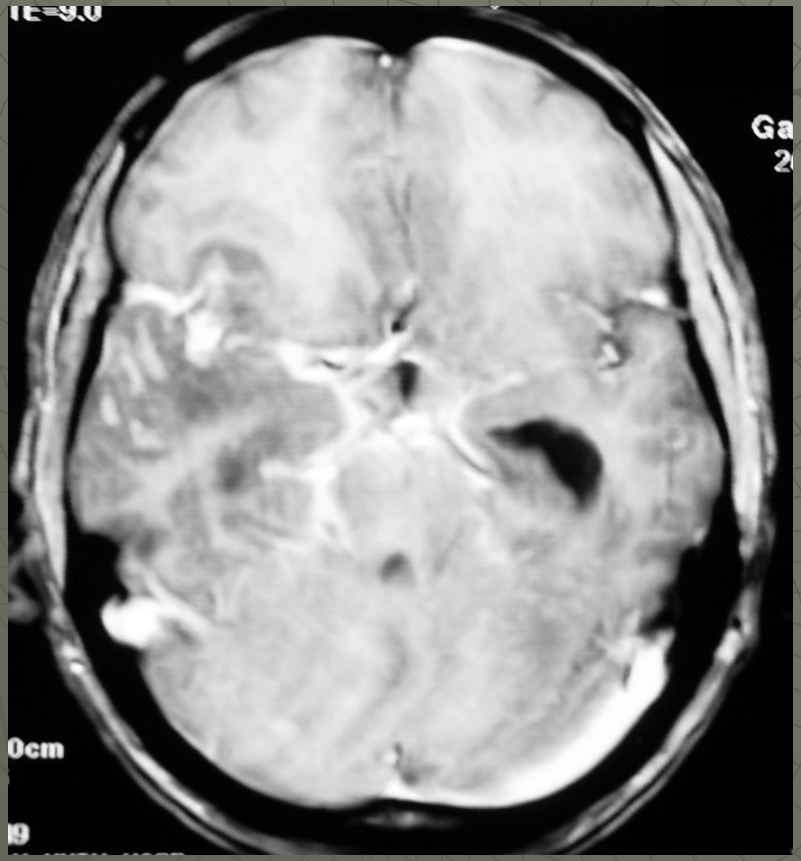


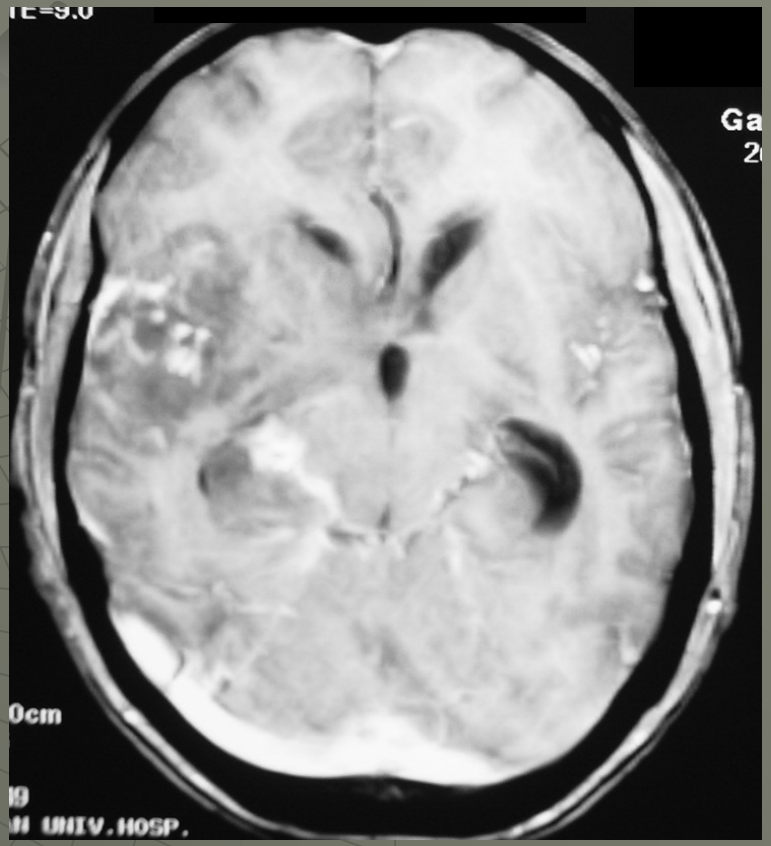


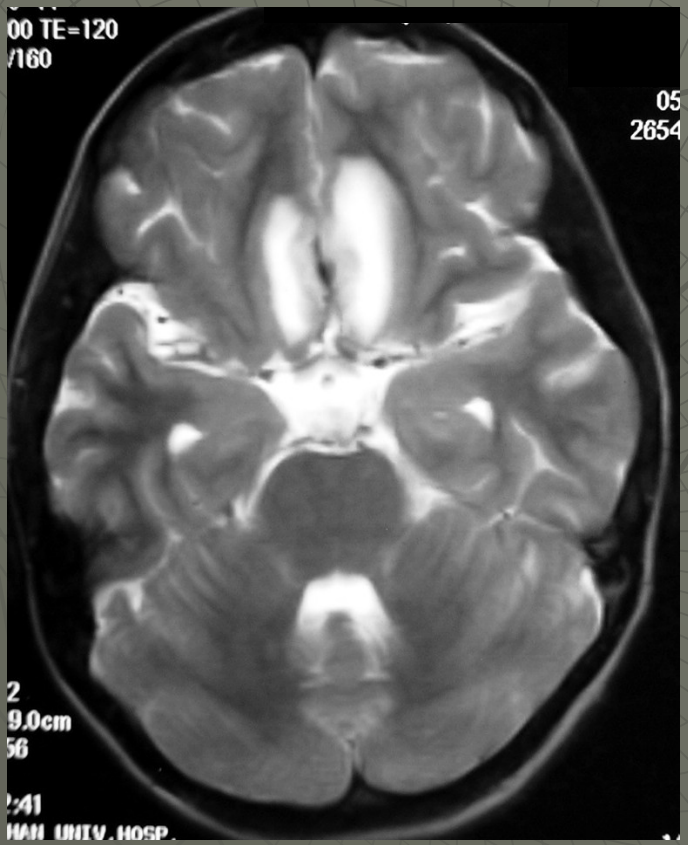


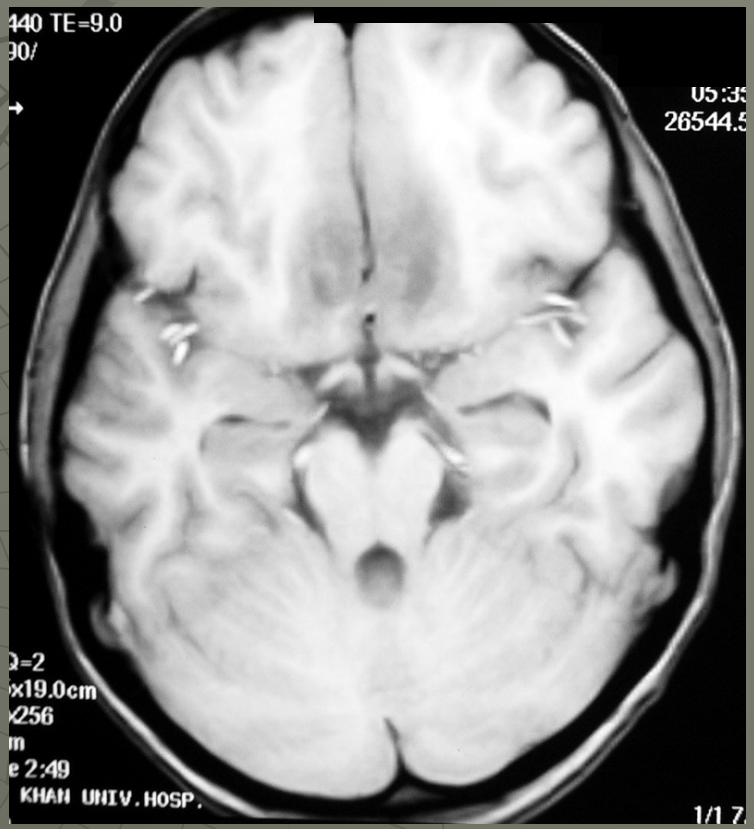


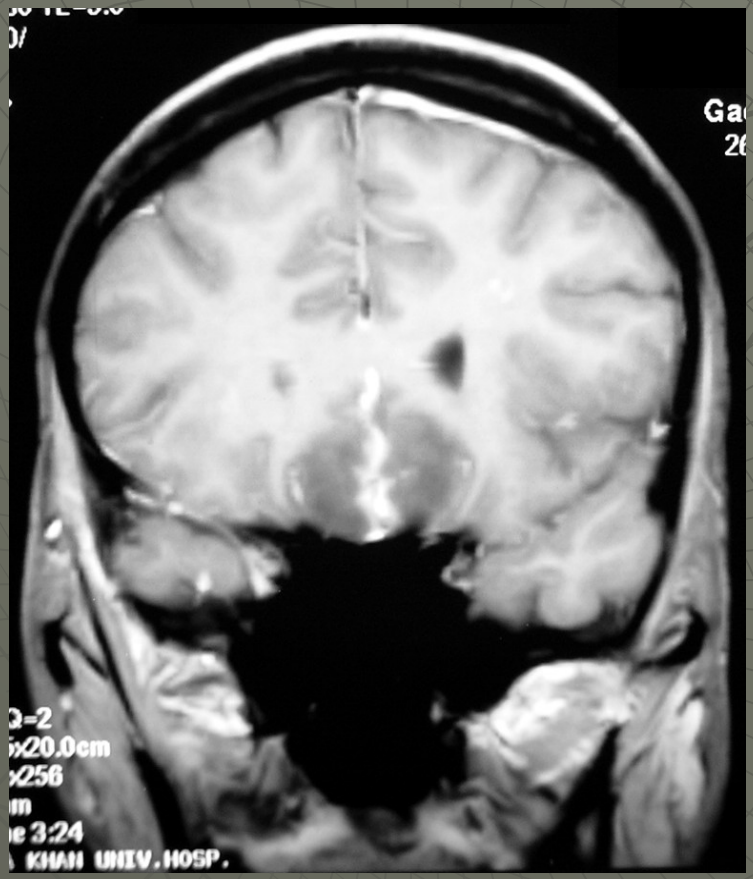


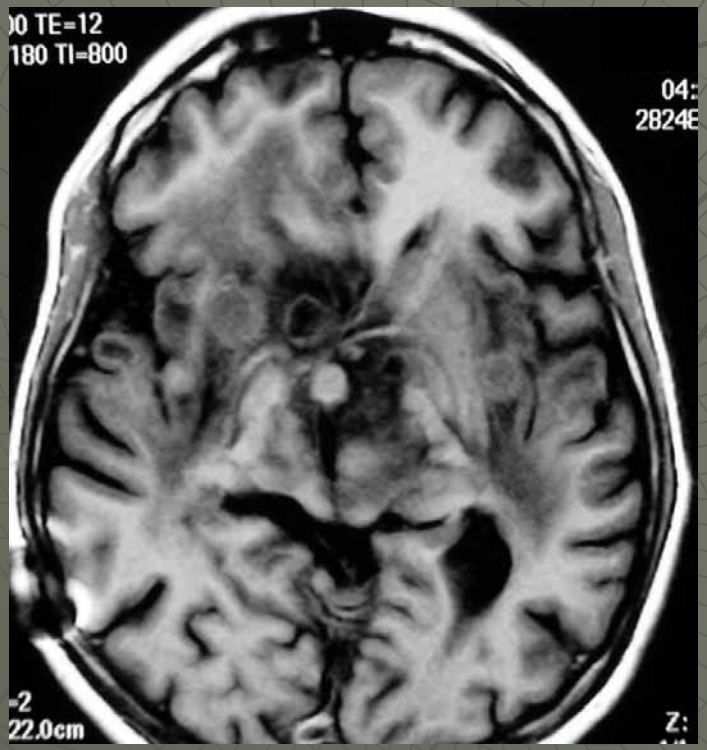


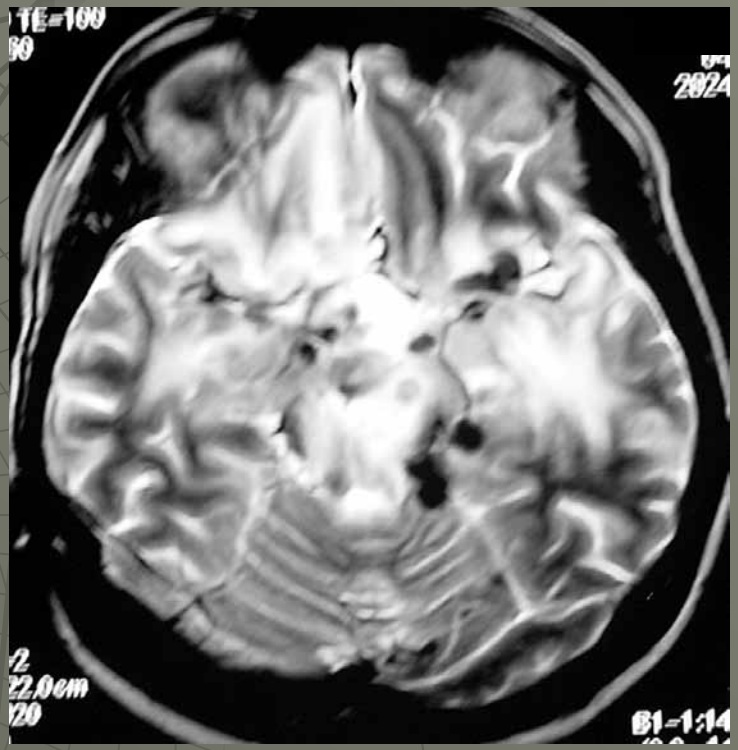




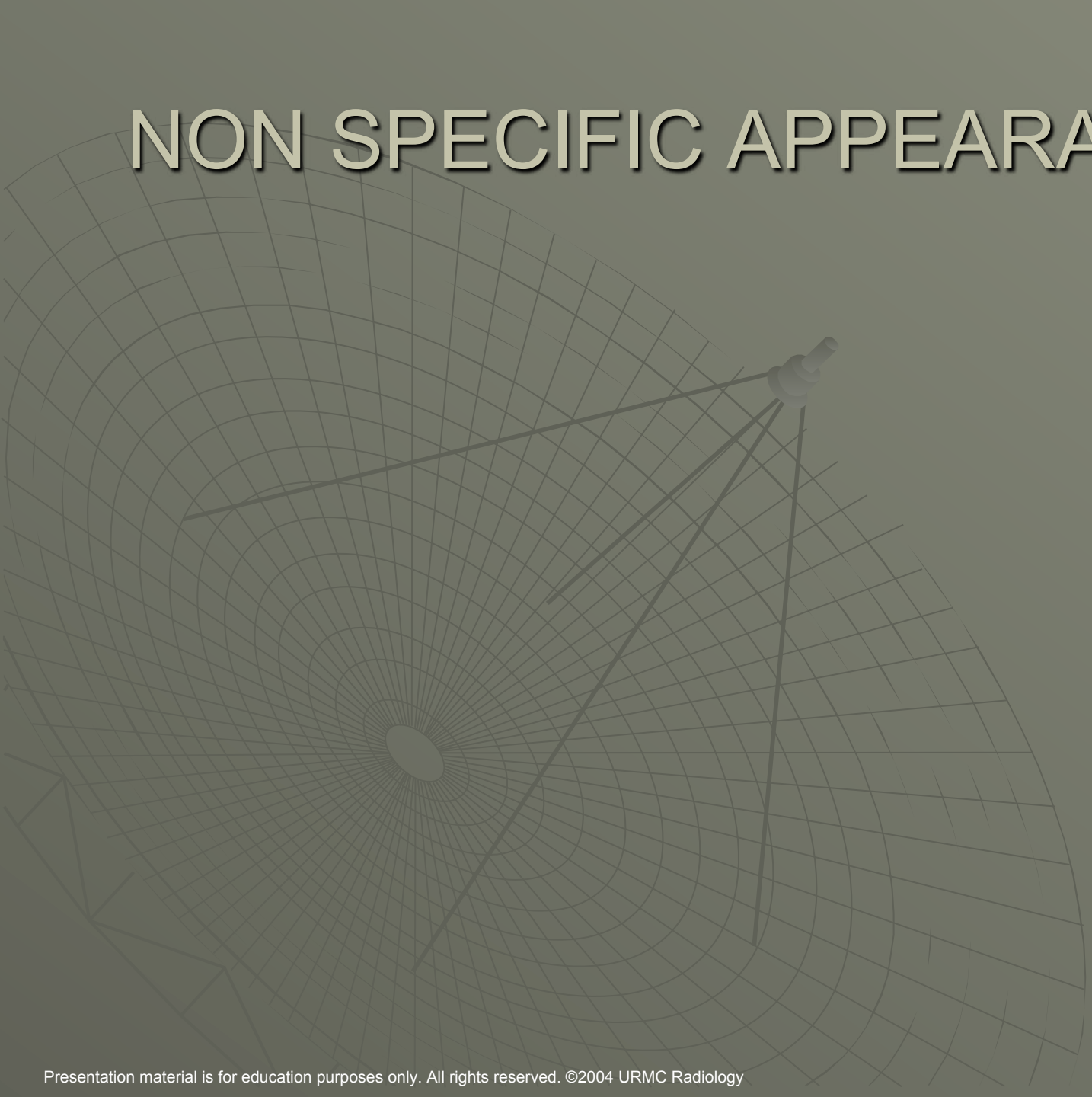




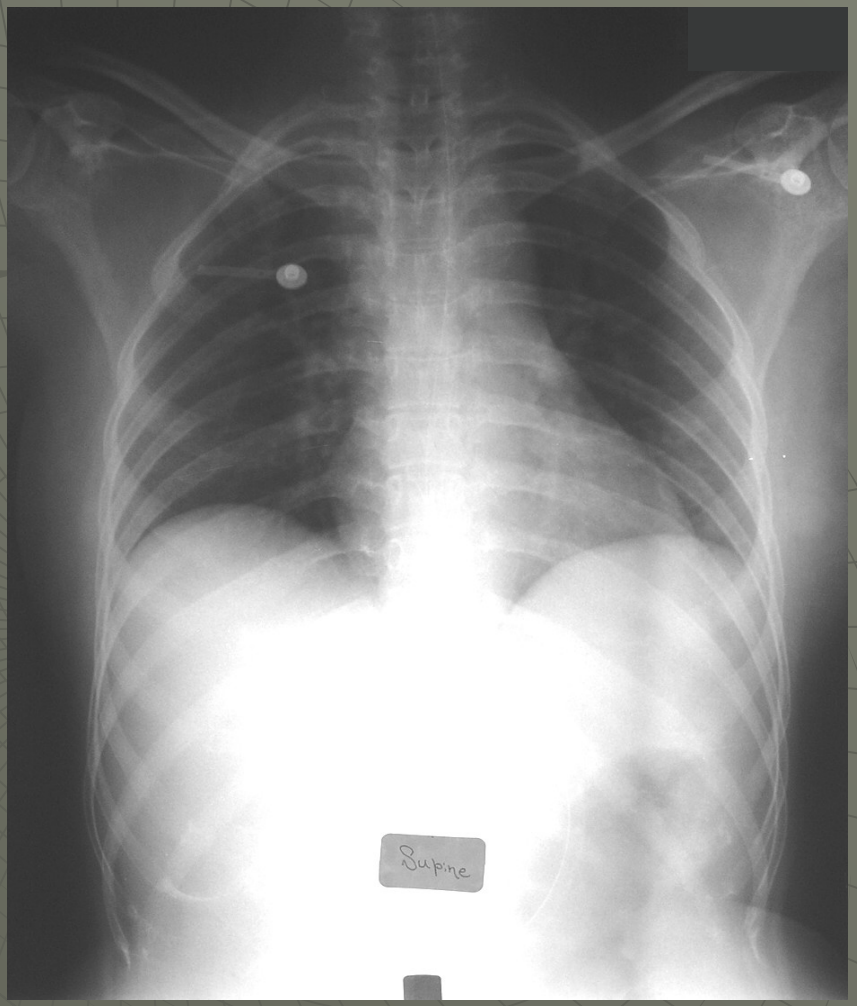


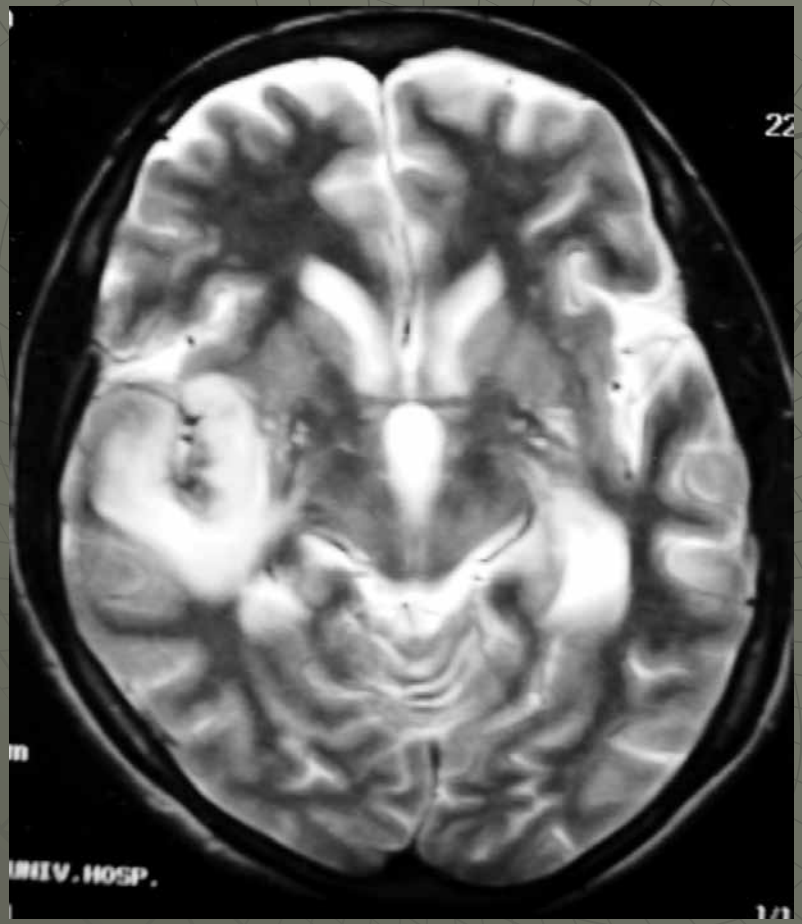


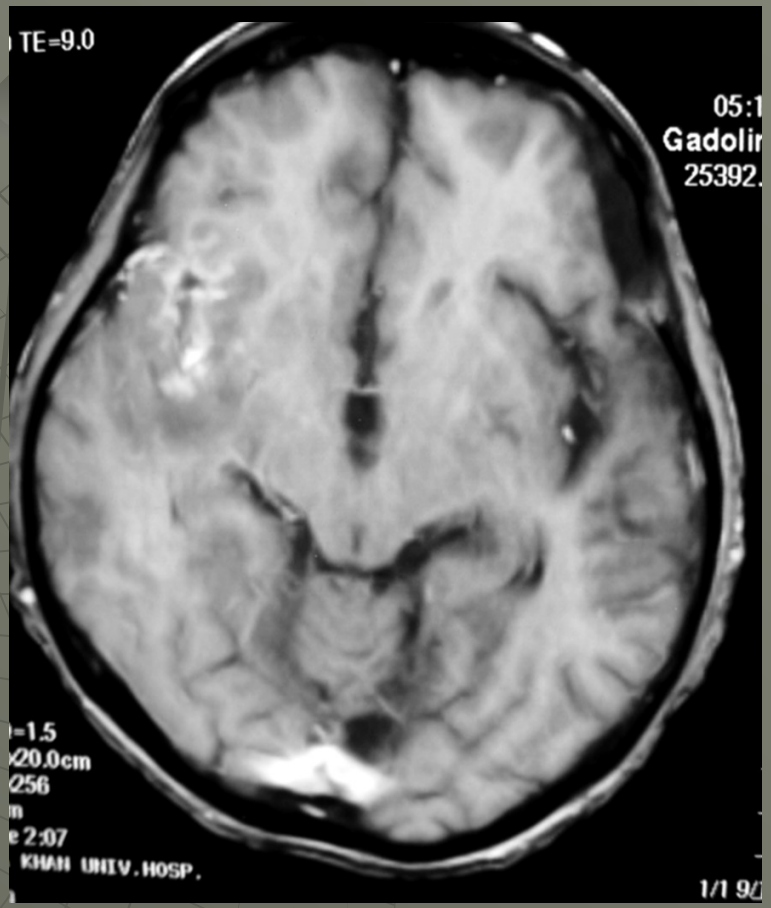
NON SPECIFIC APPEARANCES

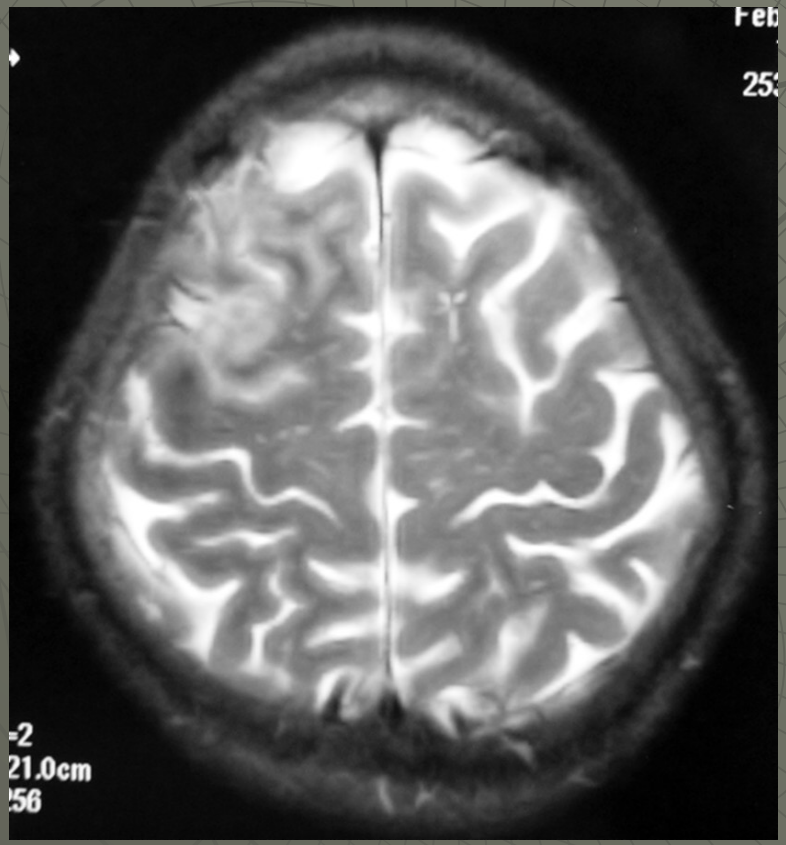


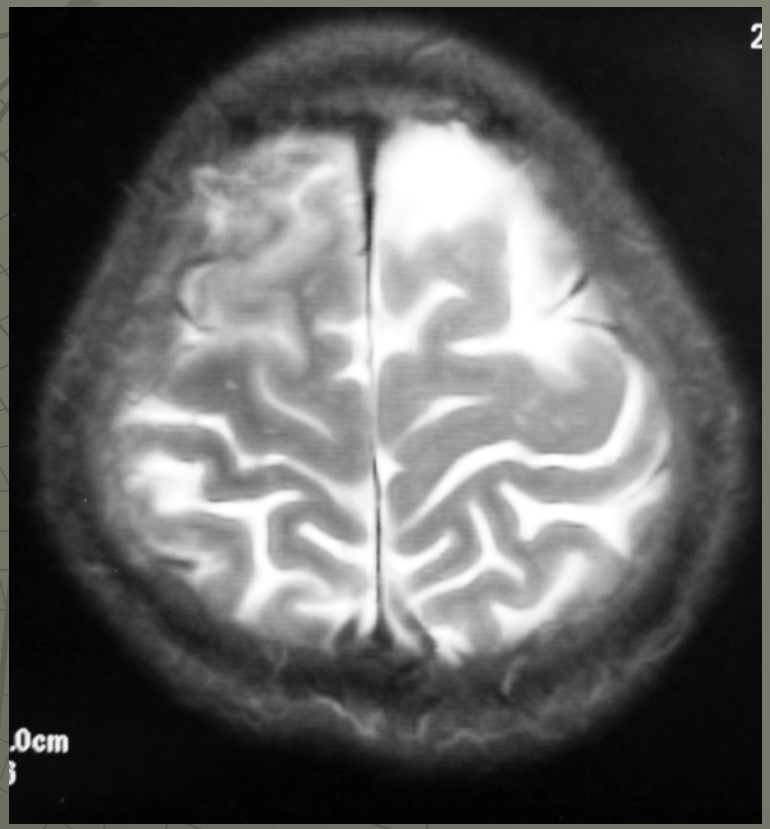
CT

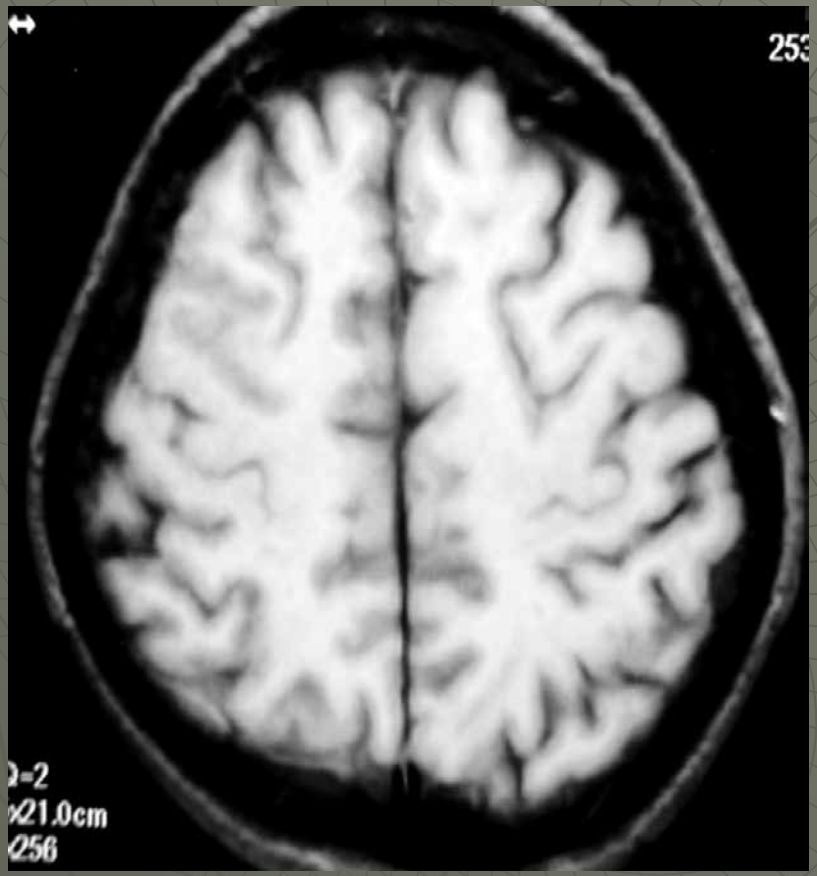


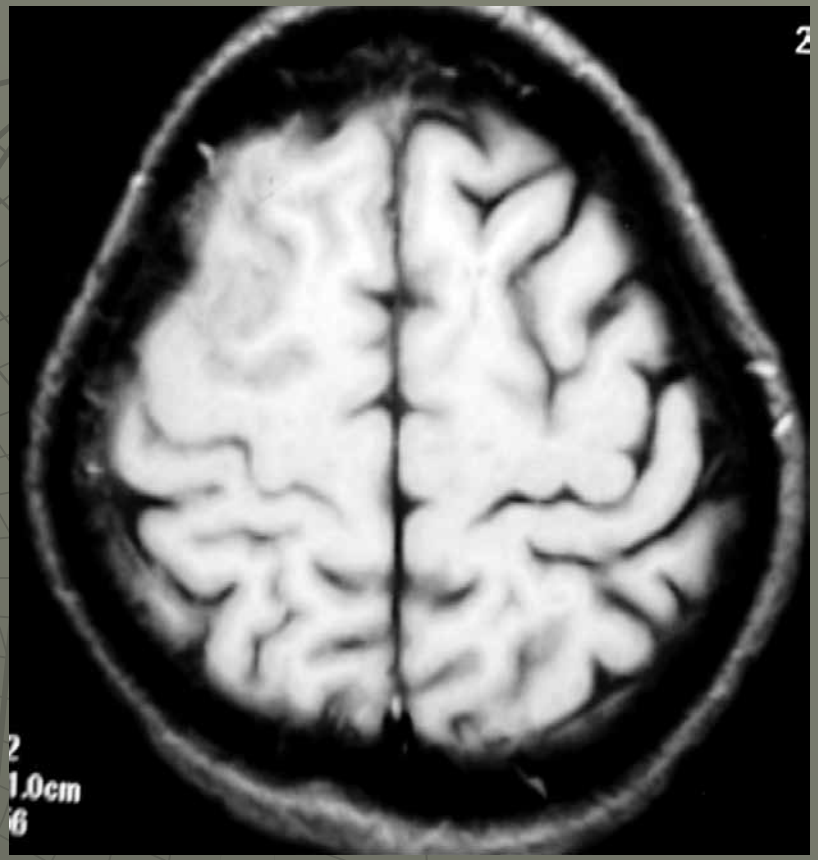


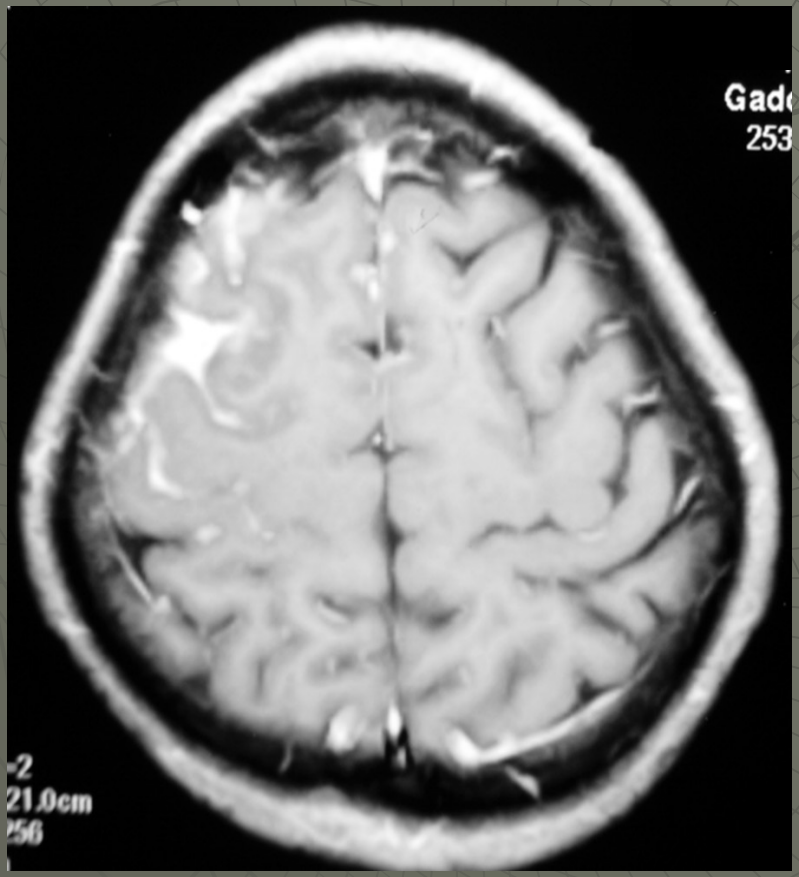


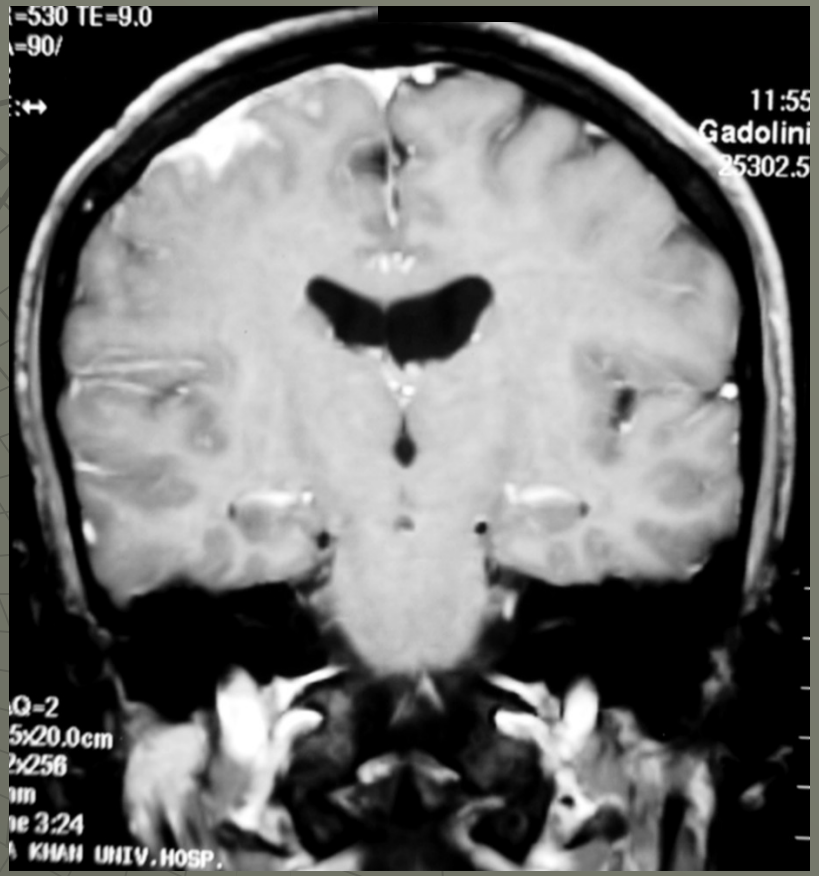


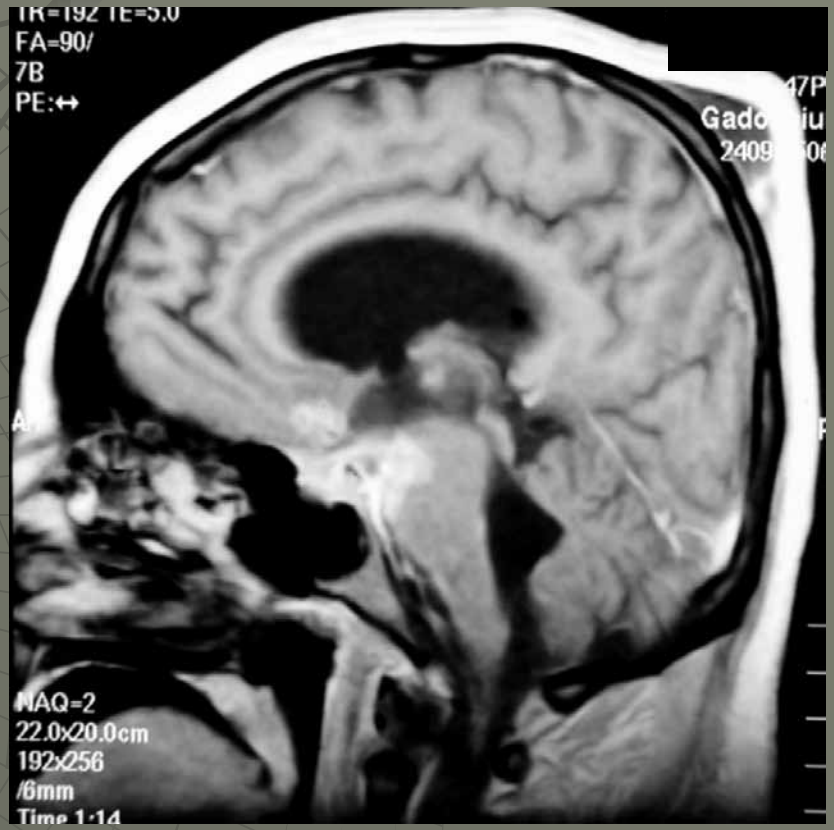


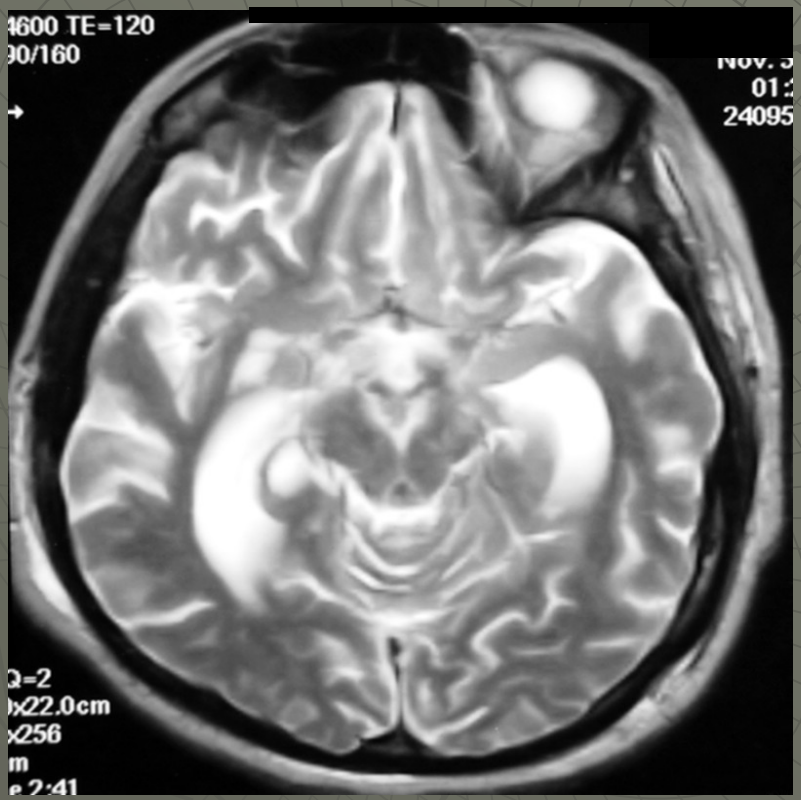


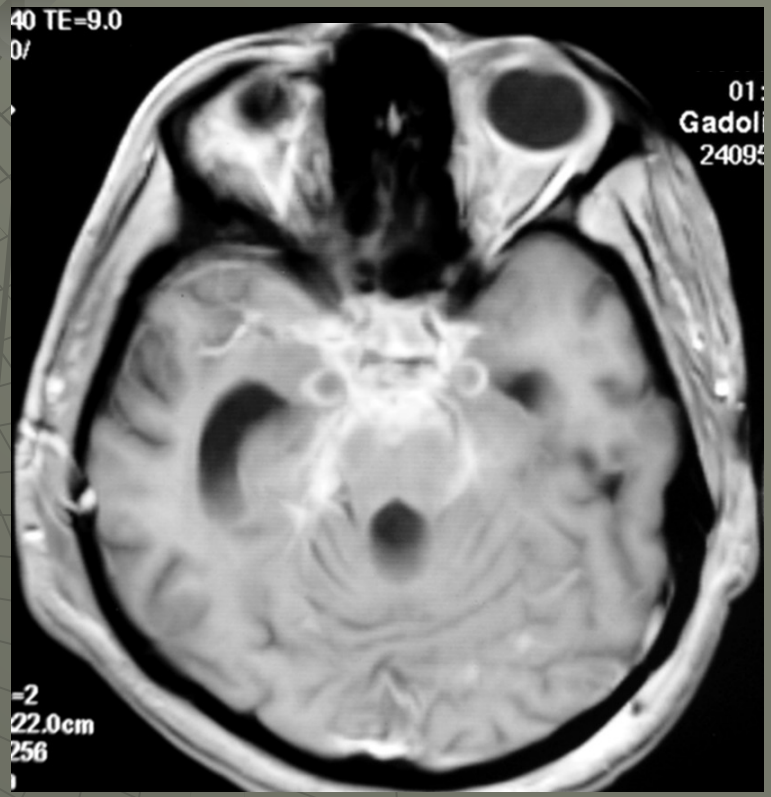












Differential diagnosis of CNS TB includes multiple brain metastases (which associated with more edema); sarcoidosis (which are associated with parenchymal nodules and have multiple dural and/or leptomeningeal nodules, multifocal or multicentric primary tumour,and fungal infections.

CONCLUSION

- Diagnosis is Tuberculosis based on imaging pattern, CSF examination and other supporting evidence of Tuberculosis.