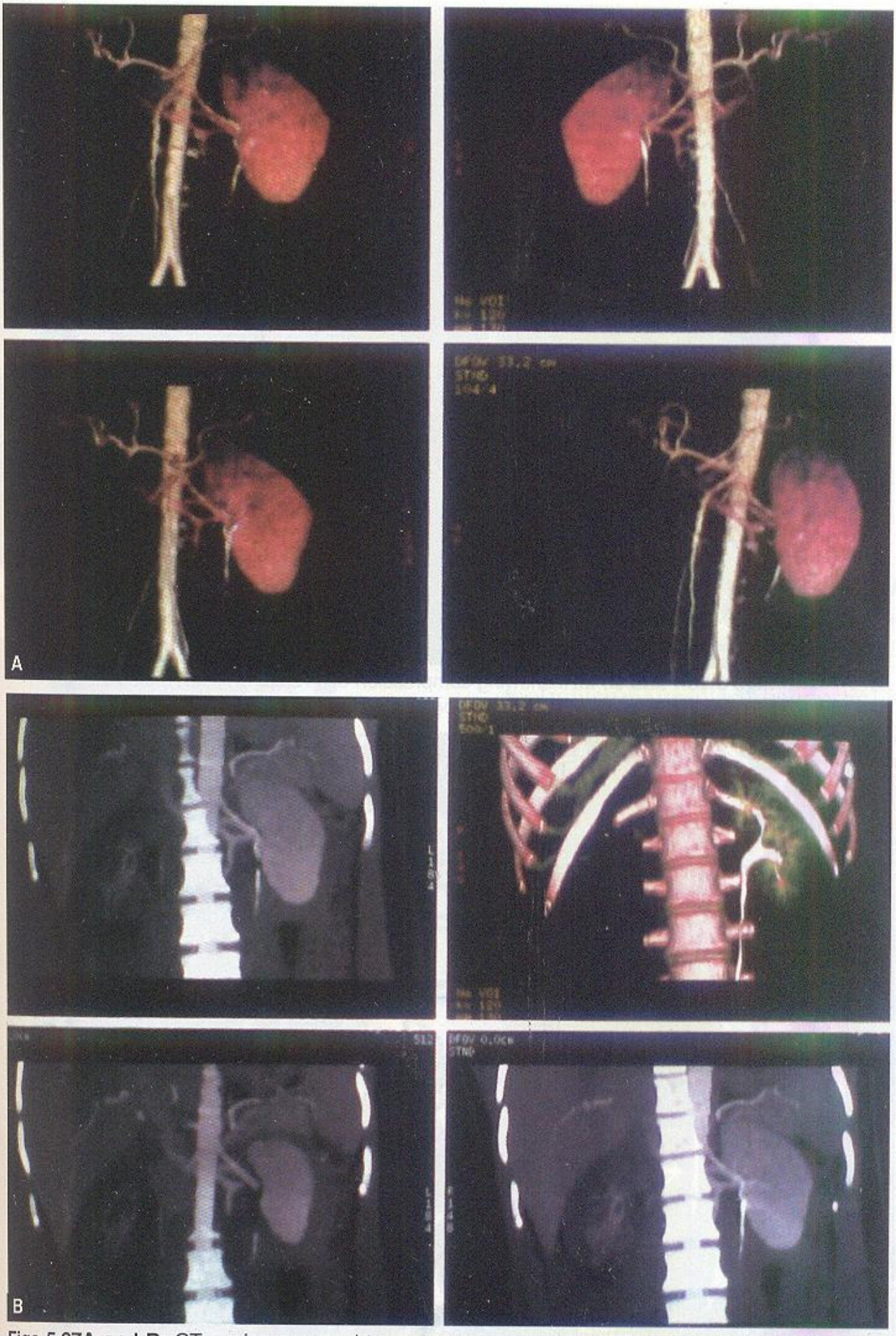
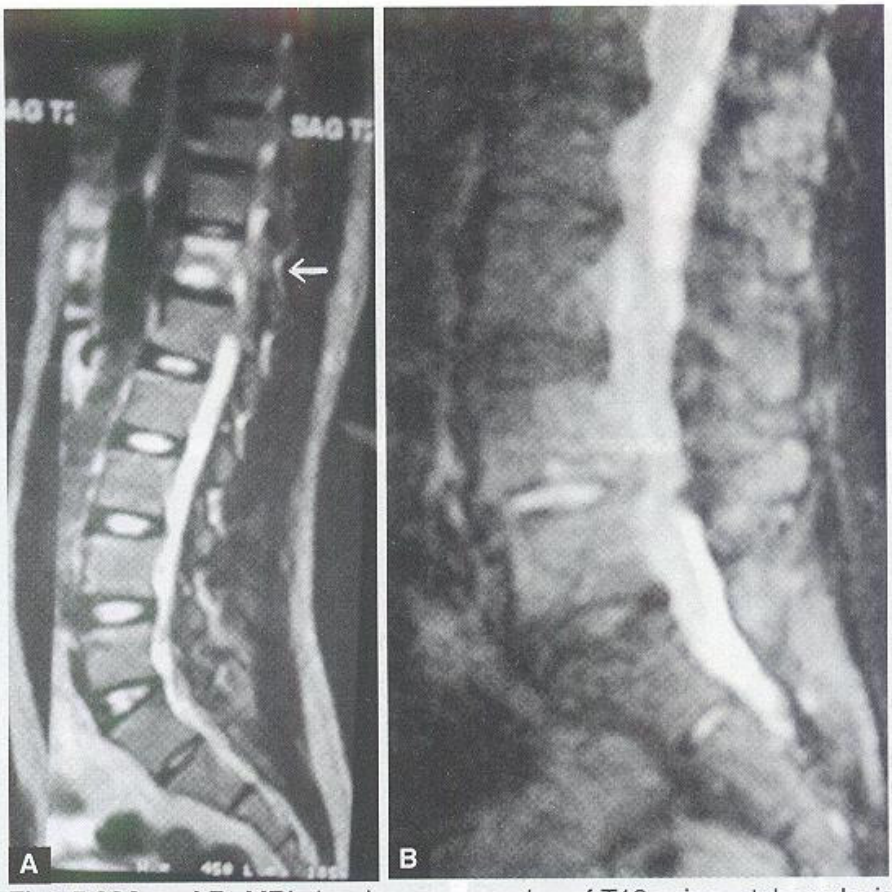
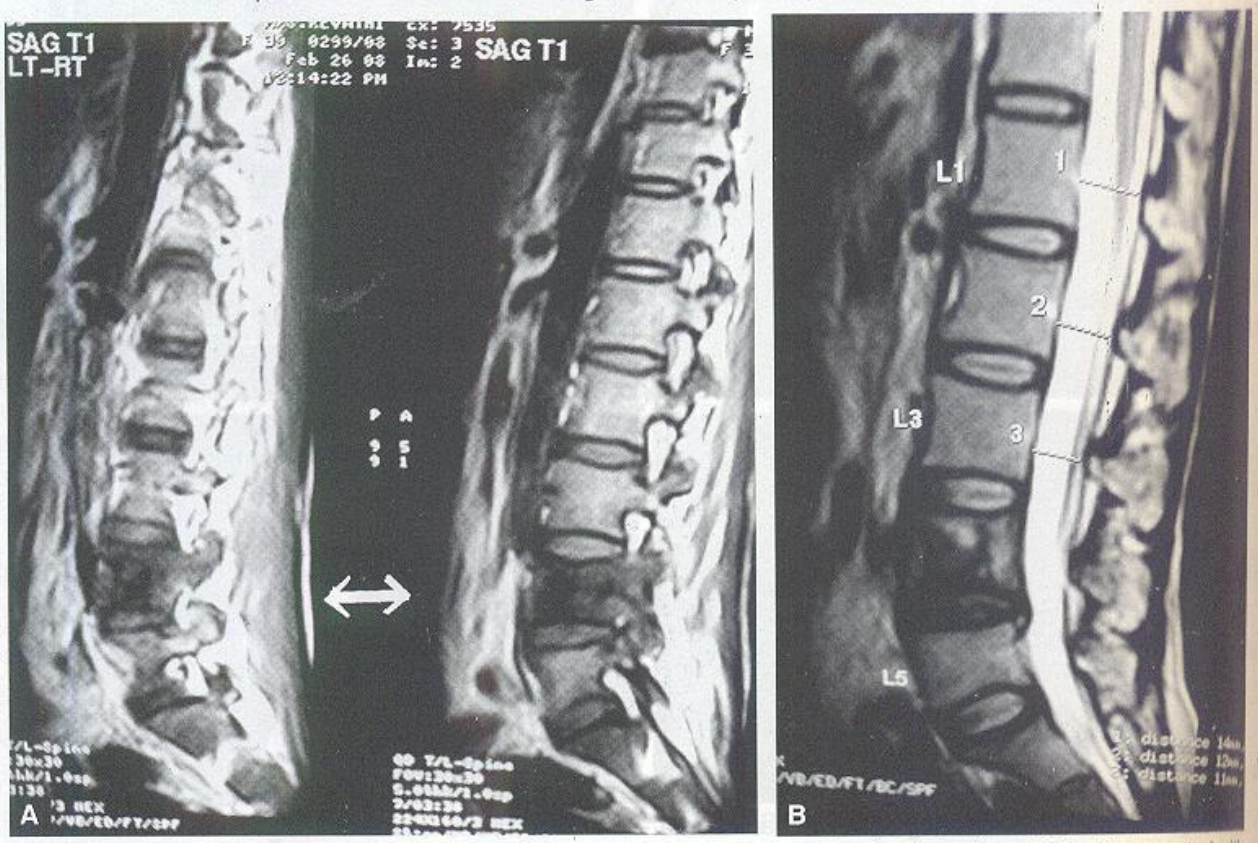


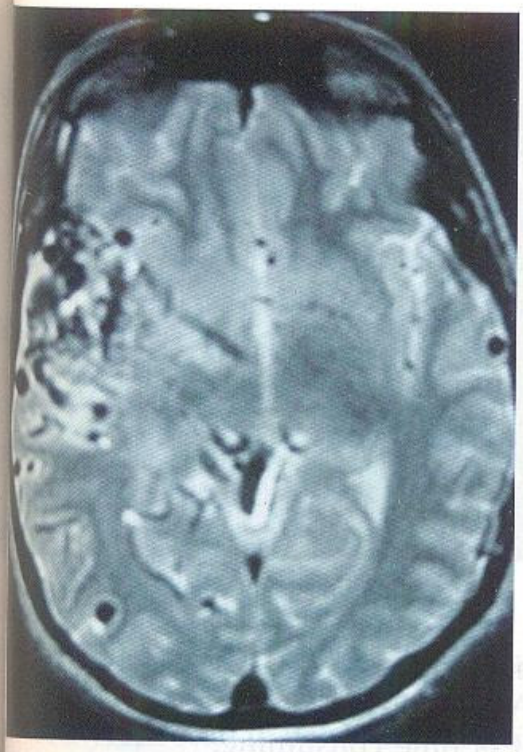
Figs 5.37A and B: CT angiogram renal trauma – some are reconstructed images. Note absence of secretion right side. Probably right renal artery is injured or has undergone for spasm



Figs 5.38A and B: MRI showing compression of T12 spine – tuberculosis of spine. MRI is ideal investigation for spinal pathology.



Figs 5.39A and B: MRI showing destruction of L4, L5 spine secondaries in spine. Patient presented with neurological deficit in lower limbs. Patient needs immediate radiotherapy and surgical decompression of spine.



5.40: MRI showing A–V Malformation right side.

5.41: MRI spine showing extradural schwannoma.

Fig. 5.42: MRI showing features of spinal tumour–ependymoma

tool which may replace diagnostic ERCP. Here heavily T2 weighted images are used.

- *MR Spectroscopy* is chemical analysis of elements in a tissue to differentiate between tumour, inflammation, and degeneration.

Advantages

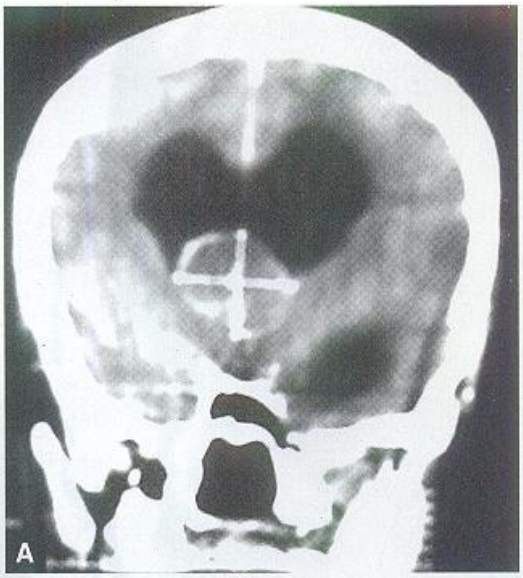
- Artefacts are not common.
- More sensitive and specific than CT scan.
- High soft tissue contrast; multiplanar imaging.
- No ionizing radiation-so safer in pregnancy.
- Better for bone marrow, spinal diseases and posterior fossa lesions.

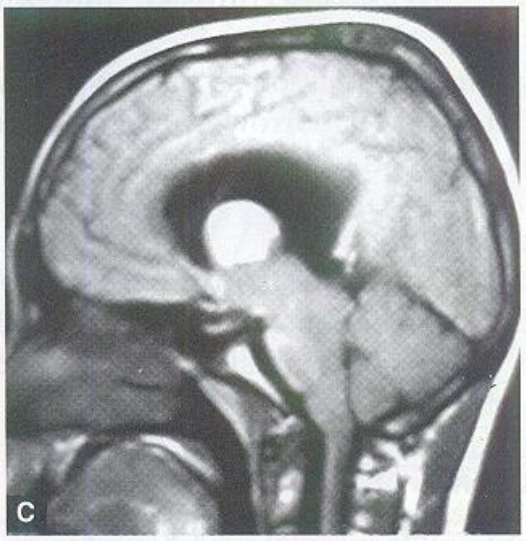
Contraindications

Patients with **Prosthesis in the body, metallic foreign bodies, pacemakers, Cochlear implants, cranial aneurysm clips** ***should never*** undergo MRI.

Precaution

Before entering the MRI room, the patient and other personnel should remove all magnetically attractive materials.





Figs 5.43A to C: CT scan and MRI pictures of craniopharyngioma

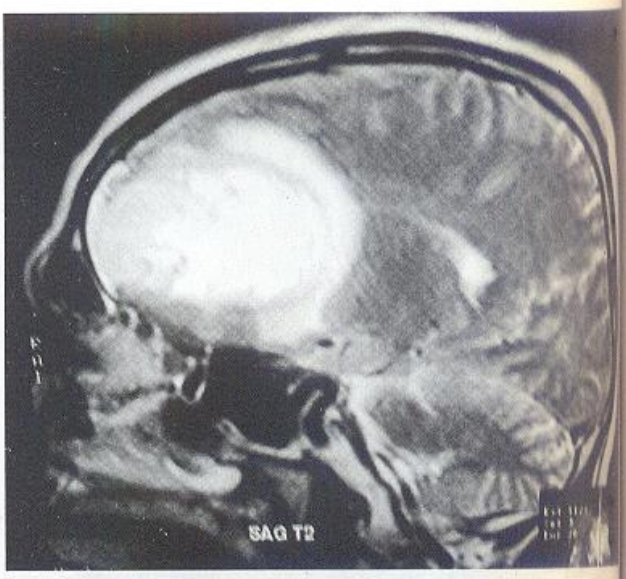


Fig. 5.44: MRI showing glioma brain

Disadvantages

- Availability and cost factor.
- It is time consuming.
- Patient compliance is poor.
- In is not feasible in patients suffering fro *Claustrophobia*.
- It is not ideal in emergencies and critically ill patients.
- It is not useful in lung pathology an subarachnoid haemorrhage.

RADIOISOTOPE IMAGING

- It is discovered *by Henri Becquerel* - 189
- Technetium 99 m is most commonly use radioisotope. It has got half-life of 6 hours It has got less radiation effect to patient bu adequate dose to show metabolic activity. emits mainly gamma rays and low energ electrons with less beta emission (high energy). So there is no high energy radiation to patient. Gamma rays easily get escaped from body to get detected by gamma camera Technetium can form tracers for different tissues or organs to get high level bioactivity Technetium 99 is derived from molybdenum 99 (half-life 66 hours) which decays progressively into technetium 99.
- Radioisotope can be used individually or can be combined with organ specific molecule like DTPA.