Notes for GP referral for MRI/CT brain

Introduction

Direct GP access aims to improve the timely diagnosis of brain tumour and reduce two week wait referrals. Ask about claustrophobia and implants / devices, e.g., aneurysm clips, pacemakers that may preclude the use of MRI.

There have been no head-to-head studies of CT v MRI and the modality will depend on local policy. CT is probably adequate for headache presentations as it has been argued that a tumour big enough to cause headache will show up on CT.

Incidental abnormalities

Patients will need to be counselled about potential problems of incidental abnormalities, up to 17% in GP referrals. This invariably causes increased patient anxiety and clinical uncertainty with potential for harm. Additional follow up imaging and investigations of incidental findings also carry a financial cost and adversely impact service capacity.

- Silent infarcts and cerebral microbleeds increases with age.
- White matter hyperintensities increase with age and are more common in migraine with aura. Although they are often reported as microvascular change there is a wide differential from demyelination to vasculitis and in most cases the cause remains unclear. A pragmatic approach would be to advice patients that these are “age related changes” and be more aware of managing vascular risk factors.
- Arachnoid cysts are benign and no further clinical input is required unless symptomatic, usually due to pressure effects.
- The vast majority of pineal cysts are small, asymptomatic, and inconsequential. Larger cysts may become symptomatic. Some areas have local policies for follow up.
- Colloid cysts are invariable pathogenic as they can obstruct CSF flow.
- Vascular anomalies, such as aneurysms, can pose a management dilemma.
- Most incidental brain neoplasms are benign or low-grade tumours; meningiomas and pituitary adenomas making up the majority. They may however need MRI characterisation and follow-up.

Urgent imaging

- significant alterations in consciousness, memory, confusion, or coordination
- new epileptic seizure
- progressive neurological deficit
- cranial nerve palsy
- papilloedema (discuss with acute team)
- unilateral sensorineural deafness in whom a brain tumour is suspected
- Headache. This is the most common reason for referral. The chances of tumour in patients presenting with headache is 0.09%. This increases above 50 years. NICE recommends that investigation is not undertaken for reassurance.
  i). *progressive or new* headache with a history of cancer elsewhere
  ii). headache of *recent onset* accompanied by features suggestive of raised intracranial pressure, for example: ▪ vomiting ▪ drowsiness ▪ posture-related headache ▪ pulse-

synchronous tinnitus ▪ other focal or non-focal neurological symptoms, for example blackout, change in personality or memory. (note – both migraine and cluster headache can wake from sleep)
iii). headache with *abnormal findings* on neurological examination or other neurological symptoms
iv). New, qualitatively different, unexplained headache that becomes progressively severe

Keep a close eye on and consider imaging

- sub-acute focal neurological deficit
- unexplained cognitive impairment, behavioural disturbance or slowness, or a combination of these
- personality changes confirmed by a witness and for which there is no reasonable explanation even in the absence of other symptoms and signs of a brain tumour
- Headache
    i) non progressive, new headache where a diagnostic pattern has not emerged after 8 weeks from presentation
    ii) headache that has been present for some time but has changed significantly (note – migraine and cluster can shift their clinical presentation spontaneously)

References

Kernick DP, Ahmed F, Bahra A, Dowson A, Elrington G, Fontebasso M, et al. Imaging patients with suspected brain tumour: guidance for primary care. Br J Gen Pract. 2008

NICE: Referral guidelines for suspected cancer. 2005.