WARNING SYMPTOMS OF SINISTER HEADACHE

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ABSTRACT

Headache is a common complaint. In most patients, it is usually a problem of migrainous or tension-type headache. It is crucial that a physician is able to differentiate sinister causes of headache from the more benign ones. Six cases are presented to illustrate the fact that there are clues in the history to suggest a sinister cause of headache even though there are minimal or no neurological deficits on physical examination. At some point of time, these cases were examined by a senior physician but they were diagnosed as migrainous or tension-type headaches. The first case is a 41-year-old labourer with cryptococcal meningitis. He presented with severe headaches at a relatively late age. A 20-year-old female complained of the worst headache she ever had and this was due to a subarachnoid haemorrhage. The third case was a young woman with a large parietal meningioma. Her headaches had recently assumed a different character. The fourth case involved an investment manager who developed headaches with transient diplopia and projectile vomiting and investigations revealed an ependymoma. A shipyward worker complained of a constant headache which disturbed his sleep. Two weeks after medical consultation, the character of his headache changed and he developed diplopia in all directions of gaze. He succumbed to pituitary apoplexy. The final case is a 28-year-old woman who had a complicated migraine. CT scan of the brain showed a large arterio-venous malformation.

Keywords: sinister headache, cryptococcal meningitis, subarachnoid haemorrhage, pituitary apoplexy, arterio-venous malformation

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INTRODUCTION

Headache is a symptom experienced by almost everyone at some point or other. It may be of minor significance in most cases but at times it is the first and only symptom of grave disease. Before symptomatic treatment of headache, one must first carefully elucidate its cause through a thorough history and physical examination. Often, the physical examination is unrevealing, but certain features in the history will alert the physician to a more sinister cause of headache. The following are cases to illustrate this important point.

CASE REPORT

Case 1

A 41-year-old labourer presented with an eleven-day history of a throbbing bifrontal headache of recent and gradual onset. The headache was constant in nature and improved in a supine position. There was vomiting on the second day of illness and he was unable to sleep well because of the headache. He did not complain of giddiness, diplopia or transient visual obscuration. Clinical examination did not reveal any significant findings and fundoscopic examination excluded the presence of papilloedema. Fever and nuchal rigidity were absent.

CT scan of the brain was normal. A lumbar puncture was carried out to exclude chronic meningitis despite the absence of fever. It showed the following CSF findings: cell count 70 per high powered field (mainly lymphocytes), protein 20 mg/dl, glucose 56 mg/dl, chloride 655 mg/dl. A smear of the cerebrospinal fluid showed cryptococcal spores. The diagnosis of cryptococcal meningitis was made and he was given a six-week course of intravenous amphotericin B.

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Comments

Although the character of the headache did not appear sinister, the fact that the severe headache experienced was the first ever and at a late age should arouse suspicion of a pathological cause. Chronic meningitis such as that caused by cryptococccus neoformans may present with headache without clinical deficits[1].

Case 2

A 20-year-old clerk was diagnosed to be suffering from systemic lupus erythematosus (SLE) four months earlier. She had awakened with a mild headache which rapidly became worse over two hours and it was the worst headache she had ever experienced. It was located over the vertex and she shortly developed non-vertiginous giddiness and recurrent vomiting. There were no visual symptoms.

On clinical examination, she had low grade fever of 37.8°C. Her blood pressure was elevated at 190/110 and her neck was supple. Fundoscopic examination did not reveal the presence of papilloedema and no significant findings were found on careful neurological testing. Neck rigidity was absent. A CT scan of the brain showed hyperdense streaks in the region of the septum pellucidum and anterior corpus callosum suggesting a rupture of the anterior communicating artery. Four-vessel cerebral angiography demonstrated spasm of the right anterior cerebral artery but no aneurysm was seen. The diagnosis was subarachnoid haemorrhage[2]. She was treated conservatively and the hypertension was brought under control. Her headache improved.

Comments

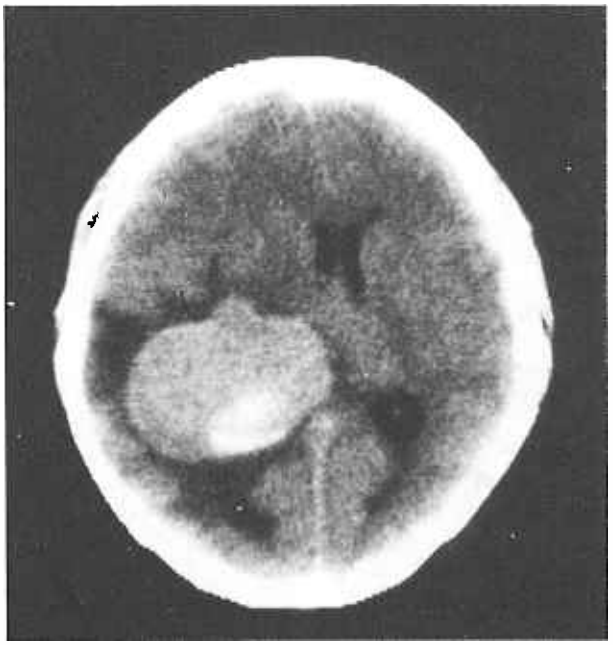
The point of note in this case is that the headache was the worst that the patient had ever experienced. The presence of fever also adds to the suspicion of a more sinister aetiology. Subarachnoid haemorrhages often present in this fashion[3].

Case 3

A 25-year-old woman had been having unilateral headaches for three years. The headaches were located over the right parietal area, occasionally the left. This was associated with nausea. There was no history of visual obscuration, aggravation of the headache by coughing or straining. For three weeks prior to hospitalisation, her headache had changed in character and frequency to become a daily occurrence and bilateral, unrelieved by the usual medication she took.

Physical examination was unremarkable and fundoscopic examination did not reveal any papilloedema. CT scan of the brain (Fig 1) showed a large meningioma at the left parietal area with surrounding cerebral edema. This was subsequently excised.

Fig 1 – Hyperdense well-defined lesion with surrounding cerebral edema and mild midline shift.



Comments

This woman was initially treated for migraine because the early historical aspect of the headache seemed innocuous, but the noteworthy part of the history is the change in character of the headache. A meningioma in an area with room for expansion often presents late[4].

Case 4

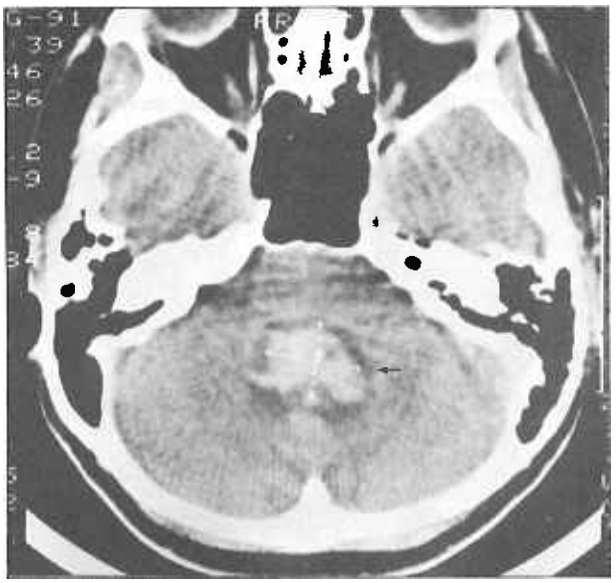
A 27-year-old investment manager presented with a three-month history of daily bitemporal headache with each episode lasting ten minutes and having ten episodes in a day. The headache was associated with transient diplopia and projectile bilious vomiting without the sensation of nausea. She noted mild unsteadiness in her gait over the recent two weeks.

On clinical examinations, she had mild ataxia on tandem walking. There were no cerebellar signs, no papilloedema on fundoscopic examination, extraocular eye movements were complete without diplopa and the rest of the neurological examination did not reveal any abnormalities. CT scan of the brain (Fig 2) showed a posterior fossa fourth ventricle lesion with hydrocephalus. This lesion was removed and histology revealed an ependymoma[5].

Comments

This case illustrates that often in raised intracranial pressure, there is severe intractable vomiting without much nausea. In between attacks of headache, there is usually minimal neurological deficit.

Fig 2 – Hyperdense 4 cm mass in the midline posterior fossa.



Case 5

A 69-year-old shipyard worker complained of a four-month history of a constant daily diffuse headache. It was worse at night, disturbed his sleep and was aggravated by coughing and sneezing. Physical examination at that point in time did not demonstrate any neurological deficit. CT scan of the brain without contrast was reported as normal. A lumbar puncture was carried out to exclude chronic meningitis. It showed an elevated opening pressure of 26.5 cm of water. CSF for microscopical examination, protein and glucose levels, VDRL, mycobacterial smear and culture, cryptococcal antigen and culture were normal. A diagnosis of benign intracranial hypertension was made.

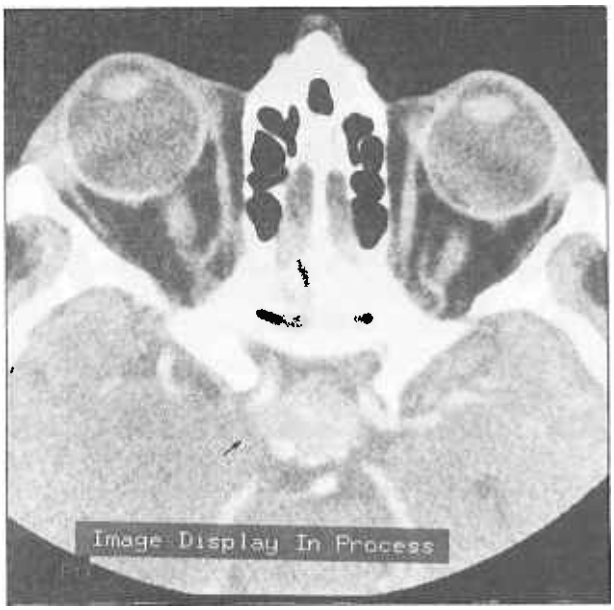
Two weeks later, the character of the headache had changed and it was most severe in the right temporal area and he had a new complaint of diplopia in all directions of gaze. On clinical examination, the significant neurological signs consisted of right third and sixth nerve lesions and a right relative afferent pupil defect with impaired visual acuity of 6/9. There was no evidence of papilloedema on fundoscopic examination. The blood pressure was 160/100. Chest X-ray showed a large left apical opacity and a CT scan of the brain with contrast (Fig 3) this time showed a hyperdense 16 by 14 mm lesion with erosion of the dorsum sellae in the pituitary fossa. His condition deteriorated and he became comatose. When he subsequently improved, he went for surgery and the pituitary lesion was removed and histology revealed a metastatic anaplastic large cell carcinoma probably from the lung[6].

Comments

This case of pituitary apoplexy[7] from metastatic carcinoma demonstrates that the headache from a pituitary deposit can be present for months before the cause is detected. The diagnosis was obvious when he presented with pituitary apoplexy subsequently but before this, the clinical examination was normal and the only clue to a sinister cause was that the headache presented at a late age and that it disturbed the patient's sleep. A

CT scan of the brain without contrast easily misses cavernous sinus and pituitary fossa lesions. Pituitary apoplexy was suspected based on the clinical picture of an acutely deteriorating conscious state and ophthalmoplegia.

Fig 3 – Hyperdense lesion measuring 16 by 14 mm with erosion of the dorsum sellae in the pituitary fossa.



Case 6

A 28-year-old clerical officer complained of monthly frontal and left parietal headaches since young. It was throbbing in nature and usually lasted half a day. She had a complicated aura preceding the headache which consisted of right-sided hemianaesthesia, obscured right field of vision and loss of speech with poor understanding of the spoken word. This would last two hours before being stricken with the headache. Her headache was usually relieved with mefenemic acid.

Clinical examination was unremarkable. Fundoscopic examination was normal and there were no visual field defects. No motor weakness or sensory deficits were detected. CT of the brain showed a large left parieto-occipital arterio-venous malformation (Fig 4). She was referred to the neurosurgeon for an opinion.

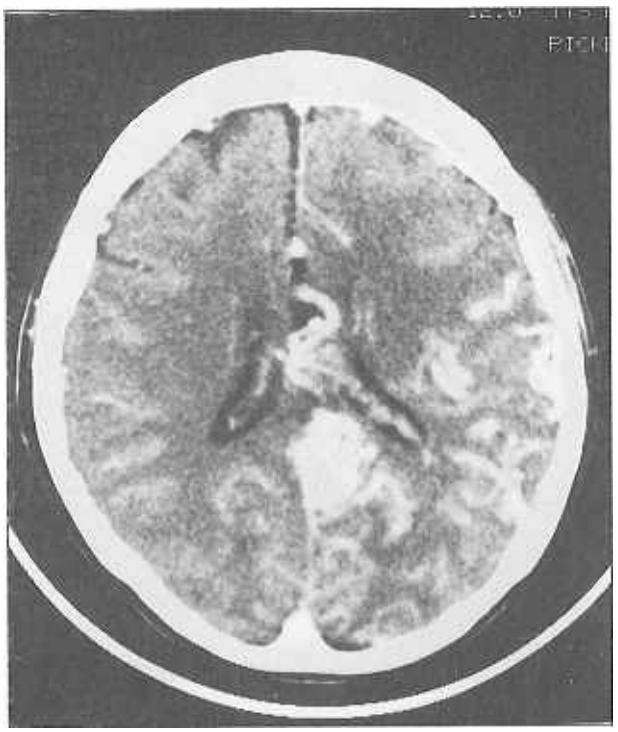
Comments

This is a case of an arterio-venous malformation causing a complicated migraine, with the aura of global aphasia, right homonymous hemianopia[8] and right-sided hemianaesthesia. All complicated migraine headaches must be investigated with neuroimaging. The complicated aura, in contrast to simple visual scotomas, should lead one to suspect a more sinister condition.

DISCUSSION

When dealing with headache, its quality, severity, location, duration and time course must be determined. A quality such as throbbing with each arterial pulse generally indicates a vascular origin. The most intense pain usually accompany subarachnoid haemorrhage and meningitis which are serious conditions or migraine, cluster headache, trigeminal neuralgia which have less severe implications. Headaches which have been present for many years, with the absence of clinical deficit in the sufferer usually are benign. This is in contrast to a severe headache of recent onset. The majority of patients with cerebral tumour have a dull headache. In subarachnoid haemorrhage, the pain expresses itself as sudden, explosive, violent and is most severe at the onset and remits only slowly. It is initially occipital but then becomes generalised and may radiate to the shoulders.

Fig 4 – Large arterio-venous malformation in the left parieto-occipital lobe which enhances with contrast.



The site of the headache may aid in localisation. Inflammation of an extracranial artery causes pain localised to the site of the vessel and in temporal arteritis, the superficial temporal artery may be thickened and tender without pulsation. Intracranial lesions in the posterior fossa cause pain in the occipitonuchal area and supratentorial lesions induce fronto-temporal pain.

Headache associated with organic disease of the brain or its meninges often persist and may wake a patient from his sleep. Grave suspicion should be entertained of a sinister cause of headache if it disturbs the patient's sleep at night. Headaches of cerebral tumour also quite often tend to occur early in the morning. Symptoms and signs of raised intracranial pressure must be sought such as vomiting, giddiness, diplopia or impairment of visual acuity, inequality of pupils, drowsiness and papilloedema.

In the elderly, conditions often overlooked are subdural haematoma, temporal arteritis and Jefferson's fracture. Jefferson's fracture is a blowout fracture of the atlas bone which sometimes follow an accidental knock to the vertex of the skull. This particular fracture is suspected when there is suboccipital pain after a knock on the vertex.

In summary, one has to be wary of a serious condition causing the headache when it is of recent onset especially in a middle-aged person, progressive intensity and frequency, associated with symptoms of raised intracranial pressure, occurring together with weight loss, the presence of fever and impaired consciousness.

CONCLUSION

Patients with headache form a large bulk of a physician's and neurologist's daily practice. The majority suffer from migraine or tension-type headaches and it is not cost-effective to proceed with expensive neuroimaging investigations for all of them. A high index of suspicion must be present when patients complain of the warning symptoms which have been highlighted above

because often, no abnormal physical findings are detected. It is hoped that this short monograph with case reports will serve to increase an awareness of serious conditions that present with headaches simulating the more benign causes of headache.

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