

WHEN TO REFER A HEADACHE PATIENT FOR INVESTIGATION AND SPECIALIST TREATMENT

Headache is a common presentation in general practice. Knowing when to refer is important.



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Vivian Fritz was Professor of Neurology at the University of the Witwatersrand and Chief Neurologist at the Johannesburg and Helen Joseph hospitals from 1986 to 2001. Since then she has been Professor Emeritus of Neurology.

She was the founder and Director of the Stroke Foundation of South Africa and is a Director of the World Stroke Federation. Professor Fritz is currently involved in medico-legal work and in this capacity sees a number of patients with whiplash head injuries. She has always been interested in headaches and has written a short book on the subject. She has lectured widely on the topic to medical students, neurologists, physicians and general practitioners.

Headaches are divided into 2 major categories: primary and secondary headaches.

The 4 categories of primary headache include:

- migraine
- cluster headaches
- tension-type headaches (TTH)
- trigeminal autonomic cephalalgias (TACs).

There are 8 categories of secondary headache:

- headache attributed to head and/or neck trauma
- headache attributed to cranial or cervical vascular disorder
- headache attributed to non-vascular intracranial disorder
- headache attributed to a substance or its withdrawal
- headache attributed to infection
- headache attributed to disorder of homeostasis
- headache or facial pain attributed to disorders of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures
- headache attributed to psychiatric disorders.

There is a third category of headache in which cranial neuralgias and central and primary facial pain are included.

In an algorithm for headache diagnosis¹ the criteria for deciding whether a headache is primary or secondary depend on taking a detailed history and on examination of the patient. If any of the headache 'alarms' or 'red flags' are present, a secondary headache should be considered and the appropriate tests will be necessary. If there are no alarms or red flags, primary headache must be considered. If there are atypical features, there is a possibility that it is a secondary headache, but without atypical features it is probably a primary headache (Fig. 1).

The patient needs to be referred to a specialist if there are any red flags present and if the primary headache is of the migraine or cluster headache type and is not being well controlled on simple therapy.

It is very common for patients with TTH to be referred to a specialist because these headaches are the most difficult to treat. On average a TTH has at least 10 episodes on more than 1 day a month and lasts from 30 minutes to 7 days. It has at least 2 of the following characteristics:

- bilateral location
- pressing/tightening (non-pulsating) quality
- mild or moderate intensity
- not aggravated by routine physical activity such as walking or climbing stairs.

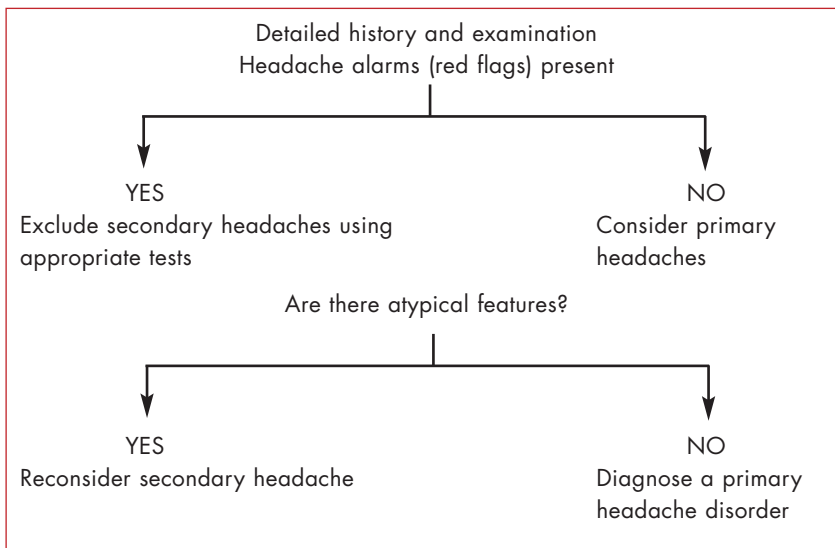


Fig. 1. Algorithm for headache diagnosis.

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An aura at the onset of a migrainous headache is usually followed by a throbbing headache, which is frequently unilateral.

The infrequent type of TTH has about 10 episodes on less than 1 day a month, about 12 days a year. The frequent episodic form of TTH occurs up to 15 days a month for at least 3 months. The chronic form occurs if headaches develop on 15 days a month (on average) and about 180 days a year. This group of patients need referral to a specialist only when too much analgesia is being used, which produces rebound headaches, or when they have been given the wrong type of medication, specifically habit-forming drugs, and have become addicted and need to be weaned off them.

Although patients with TTH have the most alarming and difficult to control symptoms, these are the least serious of all the headache groups.

HEADACHE FEATURES

There are 8 features of headache which need to be recognised as red flags. If any of these are present the patient will require neuro-imaging and/or lumbar puncture.

Sudden-onset headache

The commonest cause of a sudden-onset headache is a subarachnoid haemorrhage, a bleed into a mass or an arteriovenous malformation (AVM), and occasionally acute expansion of a

mass lesion in the posterior fossa. These patients do not have a systemic illness but they may have neck stiffness. The patient will become very distressed very rapidly; neuro-imaging is then indicated. Lumbar puncture is indicated in very few of these patients and should not be done until neuro-imaging and a report have been completed.

Worsening-pattern headache

In this situation the headache starts slowly, but gradually, over a period of a month or two and worsens progressively. There is no phase in which the headache improves. This is the typical headache of a mass lesion but can also occur with a chronic, subdural haematoma and medication overuse or abuse. This type of headache can easily be distinguished from TTH because it becomes progressively worse without headache-free days. There may be accompanying papilloedema, but this does not always occur, and in this situation neuro-imaging is essential. These patients very rarely have other features of migraine.

Headache with systemic illness (fever, neck, stiffness or cutaneous rash)

Persons with meningitis may have sudden-onset headache described with subarachnoid haemorrhage, but they will invariably have some neck stiffness and other systemic symptoms, especially fever and sweating.

Both meningitis and encephalitis fit into this category. Less common causes may be Lyme disease, systemic infection, collagen vascular disease and arteritis. In cities, where neuro-imaging is readily available, it is preferable to do it before doing a lumbar puncture in a patient with suspected meningitis. However, if such a patient is being treated in a rural area where there is no facility for neuro-imaging, then lumbar puncture will have to be carried out without a computed tomography (CT) scan, but careful evaluation of the fundi and evaluation for papilloedema must be carried

out. Tests therefore include neuro-imaging, lumbar puncture, biopsy and blood tests.

Focal neurological signs or symptoms

The symptoms should exclude typical visual or sensory aura as seen in a patient with migraine. An aura at the onset of a migrainous headache is usually followed by a throbbing headache, which is frequently unilateral. If a mass lesion, vascular lesion especially collagen vascular disease or an AVM is present or suspected, this type of presentation of focal neurological signs or symptoms (other than visual or sensory aura) should be taken seriously. This type of patient should have neuro-imaging first and, if the diagnosis is considered to be vascular, a collagen vascular screen should be carried out. Specific tests would be neuro-imaging and collagen vascular evaluation.

Papilloedema

Every patient with a headache should have fundoscopy carried out at every clinical evaluation. If papilloedema is seen then it is likely that the cause of the headache is localised in the brain. A mass lesion, pseudotumour, encephalitis or meningitis may present with papilloedema and a headache. Investigations should include neuro-imaging first, followed by a lumbar puncture and measurements of the cerebrospinal fluid (CSF) pressure by manometry.

Headache triggered by cough, exertion or Valsalva

Cough, exertion and/or the Valsalva manoeuvre raise the intracranial CSF pressure.

The most likely cause of headache triggered by any mechanism that raises the intracranial pressure is a mass lesion or subarachnoid haemorrhage. Neuro-imaging should precede lumbar puncture. Hypertension and a more benign type of headache such as migraine may also be aggravated by

a sudden increase in intracranial pressure. These patients should only be diagnosed as having a benign condition once a secondary form of headache has been excluded.

Headaches during pregnancy or post partum

This category of headache may be very difficult to treat. It is always essential to establish whether the patient is having the same type of headache as that which occurred before the pregnancy. Patients with tension headache may continue to have this type of headache during their pregnancy. Patients with migraine may have typical migrainous symptoms while they are pregnant. Most patients with headaches that occur during pregnancy or post partum should be referred to a specialist.

One of the more difficult to treat and less common symptom groups is the cortical vein or cranial sinus thrombosis. These patients may present with headache only or with features of a stroke. Diagnosis can usually only be made with neuro-imaging. A carotid dissection or pituitary apoplexy are abnormalities also frequently found as a cause of stroke in young women. Carotid dissection can also occur in young men who play rugby.

A strong element of suspicion of dissection should always be present if the headache follows gymnastics or other sport, or if the headache occurs during pregnancy or in the postpartum period. Pregnant patients should refrain from smoking as they are at greater risk than the general population of developing a stroke.

New headache types in cancer, Lyme disease or HIV infection

The commonest reasons for headache in patients with cancer or chronic infection are metastases, meningo-encephalitis and opportunistic infections. Occasionally tumours may also be responsible. Neuro-imaging should precede lumbar puncture. In a patient

with headache the presentation, especially for the first time, of any of these so-called red-flag symptoms should trigger immediate concern. Appropriate investigation should then be carried out and a decision taken as to whether the patient will be better nursed in an intensive care unit.

ROLE OF THE NEUROLOGIST IN HEADACHE THERAPY

The neurologist needs to distinguish primary from secondary headaches and to spot red flags that suggest the possibility of the latter. If a CT scan is indicated by a primary care physician, then a specialist would probably be involved – at least in the early decision making. If there are no features to suggest a secondary headache and the condition is diagnosed as a primary headache, it should immediately be classified as 1 of the 4 categories described above. If the headache is atypical or remains difficult to classify after neuro-imaging and possibly lumbar puncture, the possibility of a secondary headache should be reconsidered although the modifying effect of any treatment being taken should be kept in mind.

CASE REPORT

A doctor who had a typical migraine presentation was admitted to a neurological unit. However, during the ward round with the head of the unit, he got up in the middle of the presentation and said he had to phone someone. He went outside the ward to talk on his cell phone. Fortunately, the head of the unit was alert enough to recognise that his colleague would not normally behave in this fashion – it was abnormal cortical behaviour and therefore constituted a focal sign. On investigation a CT scan was normal; however, angiography revealed an aneurysm of the anterior communicating artery creating pressure onto the frontal lobe. There had been a small haemorrhage which had sealed, the headache had improved and the symptoms had been wrongly diagnosed as migrainous. However, there was some vasospasm of the vasculature of the

frontal lobes and the abnormal behaviour pattern was correctly recognised as being a focal neurological sign. The headache was fully investigated and a cause found.

CONCLUSION

Most patients with headaches visit a primary care physician and cannot all be scanned. It is therefore imperative that a detailed history should be taken of every patient with a headache and a good neurological examination conducted, specifically looking for papilloedema and checking for focal neurological signs.

Every headache patient should be seen at least monthly for the first 3 months and he/she should keep a headache diary. A doctor can often only make the correct diagnosis of a headache once a good history has been taken and a thorough examination has been carried out, by assessing the diary. In this way it is possible to establish whether the headache is paroxysmal, its intensity, the amount of analgesia being used, the trigger factors – making it both better and worse – and the pattern.

When a headache is correctly diagnosed the treatment is frequently successful. Headache therapy often fails if a correct initial diagnosis has not been made.² Most headache clinics

and specialists who deal with headache patients follow the basic rule of taking a good and detailed history and doing a thorough examination and thereafter following the pattern of the headache and its response to therapy. An acute-onset headache in a non-headache sufferer, a person aged over 50 years or one with focal neurological symptoms or signs (including neck stiffness) should be treated as a medical emergency.

The basic ingredient missing in the care of headache patients is time and a good history. The most important recommendation is to spend time with the patient and/or to create a detailed headache questionnaire and diary for patients to complete on their own or in the presence of a trained nurse – before they consult a doctor.

References available on request.

Further reading

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IN A NUTSHELL

The majority of headaches are migraine and tension headaches.

Migraine patients should be referred to a specialist if the features are atypical or if the headache does not respond to simple therapy.

When a patient with intermittent tension-type headache develops chronic daily headaches – refer to a specialist as it is most likely a drug-induced headache.

Secondary headaches may be caused by head and/or neck trauma, cranial or cervical vascular disorders, non-vascular intracranial disorders, a substance or its withdrawal, infection, disorders of homeostasis, psychiatric disorders, abnormalities of the cranium, neck, eyes, ears or sinuses.

The warning features of a headache that requires further investigation are sudden onset, progression with increasing severity, associated systemic illness, focal neurological features, papilloedema, associated pregnancy, cough or exertion, or recent headache onset in a cancer or AIDS patient.


SINGLE SUTURE

LARGE WAIST AND TRIGLYCERIDES

The best indicator of risk of cardiovascular disease in postmenopausal women may be large waist measurements and raised triglycerides. A community-based sample of 557 women was followed for 8 years. After adjustment for age, smoking, diabetes and low density lipoprotein cholesterol, a waist circumference greater than 88 cm and raised triglycerides were associated with a 4.7 times increased risk for fatal cardiovascular events.

Circulation 2005; **111**: 1883-1890.

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