

Headache - A Broad Overview

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Abstract

Headache is one of the most common problems to present to the neurologist and accounts for approximately 5% of all general practice (GP) consultations. The approach to headache is similar to all other medicine, namely the need for an accurate history, comprehensive physical examination and investigation, if required. It is imperative to identify the 'red flags', which mandate referral for more in-depth evaluation.

From the GP perspective, it is important to examine lifestyle changes and to address these. One should ensure that the overuse of medications is both anticipated and optimally controlled. Immediate treatment may be as simple as over-the-counter analgesics. If more is required, having addressed lifestyle issues, overuse syndrome and 'red flags', it may be worth considering involving a neurologist.

Prophylactic treatment depends on the headache type, such as tricyclic antidepressants for tension-type headaches, selection of a choice of anti-migrainous agents for unequivocal migraines, and the use of propranolol for those headaches which fall somewhere between tension-type headaches and migraines, always being cognisant of the potential adverse effects that may attach to those medications.

Keywords: Headache; Overuse; Lifestyle; Medications; Prophylaxis

Introduction

Headache is one of the most common problems to present to a neurologist [1] and accounts for approximately 5% of general practice consultations [2]. The basic principles, relevant to the management of headache (namely diagnosis and treatment) are no different to those referable to any other medical condition. By far the most important diagnostic tool, when evaluating a headache, is a comprehensive history together with a focused physical examination, which must include optic fundoscopy. The imperative is to distinguish between recurrent episodic, or even constant daily, headaches from those that herald catastrophic diagnoses, such as a cerebral haemorrhage, dissecting aneurysm or infective meningoencephalitis. The doctor must be aware of red flags, such as thunderclap headaches, headaches exacerbated by coughing or sneezing, headaches evoked by posture, such as stooping or headaches associated with other neurological signs and symptoms and in these circumstances must refer the patient for further evaluation.

The aim of this overview is to equip the general practitioner (GP) to enhance his/her management of headache and to accurately differentiate between those headaches, which represent less worrisome diagnoses from those which present red flags that necessitate urgent intervention.

Diagnosis

As with all neurological presentations, the basis of the diagnosis rests with a thorough history. It must be appreciated that headache is not a diagnosis but represents a presenting symptom. This necessitates clear definition of that symptom, exploring such issues as: when did it start; how did it start (sudden or gradual); where is the pain (localised, unilateral or bilateral); the nature of the pain (be it focal, lancinating stabbing, tight and gripping or pulsating); its frequency (occasional, frequently recurrent, daily, weekly or constant); its duration (seconds, minutes, hours or days); any precipitative factors (physical or emotional trauma, specific activities (such as strenuous exercise or coitus); identifying factors unique to that patients, such as exposure to toxins, sleep deprivation or stimulants be they photic, phonic or osmic; relieving factors, such as simple analgesics, rest or seeking a dark quiet environment; and any associated features, such as photophobia, phonophobia, osmophobia, meningismus, visual field defects or other neurological complaints, such as limb weakness, altered consciousness or sensory symptoms.

Other features, relevant to the patient, including: the patient's more general history, a social history including consumption of alcohol, smoking and medications, family history (especially relating to headaches); other illnesses and/or specific treatments including such factors as acupuncture, chiropractic intervention and neck manipulation. All of these issues are highly relevant to the better understanding of the presenting symptom of that patient's headache.

As with all diagnoses, a comprehensive physical examination is mandatory and must include fundoscopy (to exclude raised intracranial pressure or nystagmus in the primary position).

The neurological examination should be systematic and follow the standardised protocols, which include higher centres, cranial nerves and peripheral neurological evaluation [3]. To these should be added a focused examination referable to the patient with headache, including looking for meningismus, hypertension, signs of trauma or skin lesions, such as café au lait spots or haemangioma.

Such assessment should have produced a provisional diagnosis upon which it is decided what further investigations are required. In the vast majority of cases there is no need to further investigate a patient with headache, unless the treatment being offered has failed to achieve the desired result or there exist red flags necessitating referral. The discussion to follow will not deal with those headaches which require referral to the Accident & Emergency Department as the appropriate management, in these circumstances, following referral, will rest with the hospital.

Treatment

Most treatment will be based on clinical grounds. It is worth remembering that the type and nature of the headache can morph over time and that which started as migrainous headaches, years ago, may now present as tension-type headaches [4]. The headache that is currently the cause of the presentation is the headache that requires current intervention.

Lifestyle changes

Patient often may be able to identify those precipitants that trigger their headaches. These may include various stressors, poor sleep patterns, specific situations, foods or smells. Once identified, if possible, these triggers should be avoided or minimised, although that is not always possible within the current fast pace of living or demands of work. Where it is impossible to avoid the triggers it is helpful to find alternative ways to deal with them.

It should not be ignored that relaxation from stress may itself represent a vulnerable period. The phenomenon of weekend headaches is well known [5]. These occur at a time where expectation for leisure is high but, in reality, may be a source of severe headaches. Once

appreciated and accommodated, without the need for medication, the intrusive headaches may be reduced with consequent diminution of disability.

Sleep deprivation, be it from study, working shifts, excessive overtime or entertainment may also provoke headaches [6]. Sleep-disordered breathing, such as obstructive sleep apnoea, may result in headaches [7]. Polysomnography and appropriate intervention may be required but changes in lifestyle, weight reduction, sensible exercise program and sleep hygiene are all important. Over-sleeping during the day, to compensate for lack of sleep at night, adversely influences sleep hygiene. It is more effective to retire early on the following evening, after a night of sleep deprivation, thereby not interfering with the biological Circadian rhythm.

Dietary consideration may impact headache management. Missing meals, whether for the purposes of dieting, lack of time, convenience or religious fasting, may all evoke headaches. Missing meals in combination with alcohol is a particular risk. Particularly frequently implicated in headaches are the consumption of red wines, cheap wines and fortified alcohol, such as sherry or brandy [8].

Intake of fat may exacerbate a migraine as, during a migraine, blood concentrations of fat tends to rise [9]. Additional fat intake may exacerbate this, resulting in a susceptible person experiencing headaches. Use of full fat milk may be a trigger, including full milk, yoghurt and some cheese [10], such as Danish Blue. Another contentious food may be vegemite, with high tyramine content (as may also exist in some wines) [11]. Other foodstuffs, such as soft drinks and fruit juices, containing preservatives and colouring agents may cause headaches [12]. Chocolates and sweeteners may act as provocateurs [13] as may sodium glutamate [14], often found in Asian cuisine. Other herbs and additives may also evoke headaches in sensitive people.

Hormonal imbalance, as occurs in adolescence, menarche, menopause, pregnancy, use of hormonal contraception or hormonal replacement therapy, may all be additional factors that require consideration [15]. It cannot be ignored that these hormonal changes also occur at life stages that reflect changes in life and lifestyle, with additional stresses and expectations which, of themselves, may contribute to the development of headaches.

In a short treatise, such as this, it is impossible to delve further into this very important aspect of headache treatment but, without considering it, as a major contributor, and addressing it in detail, much of what follows will be ineffective. GPs are often better positioned to handle these aspects of patient care as they are more closely involved in the patient's lifestyle and dynamics than is the case for the consultant.

Acute intervention

Overuse headache

When presenting to the GP, the majority of patients will have already tried over-the-counter (OTC) remedies. In many instances, they may have tried too many of these and in too potent combinations, resulting in chronic over-treatment or over-medication syndrome [16]. This may be the root cause of the headaches, in which case the patient needs to be advised to stop the vicious cycle. In this situation, the patient needs to be warned to expect headache exacerbation, at least in the short-term, and the doctor must keep in close contact with that patient who is about to experience withdrawal from excessive analgesic or non-steroidal anti-inflammatory medication.

Such overuse is often the result of taking an effective medication, producing rapid pain relief, but at the risk of recurrence, after the effects wear off. Further intake of medication causes relief but may shorten the time to recurrence, especially as more and more tablets are ingested. Eventually the patient may never be totally free of symptoms and start to experience adverse effects, consequent to drug accumulation and impact on daily living. These cyclical headaches are not restricted to overuse of OTC remedies and may occur with

prescribed medications, such as triptans, including sumatriptan, especially if taken in combination with simple analgesics or antiemetics, taken several times each day and with increasing frequency.

Immediate intervention

Triptans, once the favoured acute intervention for migraines, are very effective but their safety profile requires consideration. Clinical trials tend to exclude patients with cardiovascular or cerebrovascular risks, despite these patients being freely prescribed these agents once they become easily available. Such consideration, of potential adverse effects, is fundamental when prescribing this class of intervention for acute management. Simple analgesia, such as paracetamol or naproxen, remain the treatment of choice for occasional headaches. Where the headaches are either more intense, more frequent than occasional or more intrusive into quality of life, the person, experiencing those headaches, should seek professional advice from their GP. This must explore all factors already discussed, be they lifestyle changes, overcoming medication overuse or prescribing the right medication in the correct dosage.

Prophylaxis

The use of medication for prophylaxis for headaches is often the realm of the consultant, as the GP has, or should have, already addressed those life-style changing factors designed to manage each individual patient.

Having addressed these factors, prior to referral, the next step is to differentiate the headache type, be it tension-type headache, migraine or something in between, having eliminated those more serious, symptomatic headaches, which require referral and attendance at the local hospital.

No medication is without side effects and the prescribing clinician needs to appreciate these for each remedy being offered. Each clinician will have his/her favoured agent and, for the purposes of this treatise, the latest additions to migraine treatment, namely the Calcitonin Gene Related Peptide (CGRP) antagonists [17] have not been included, as they do not fall within the approach to headache management to be adopted by GPs. Having said that, they do appear as a bright light, which is growing in lustre and may become the future benchmark for headache management. Similarly, discussion of Botulinum Toxin [18], in the management of headache, has deliberately been omitted from this overview.

Tension-type headaches respond well to tricyclic antidepressant prophylaxis (such as amitriptyline or imipramine) [19]. The unwanted effects of these include somnolence, weight gain and the anticholinergic effects of dryness and constipation. Those headaches, somewhere between tension-type headaches and migraines, often respond to non-specific beta-blockers such as propranolol [20]. Care must be exercised if prescribing beta-blockers in patients with cardiac or respiratory problems.

The prophylactic medications used specifically for migraine are numerous. The starting doses and maximal doses of each of these medications has been omitted from this overview on the basis that each patient deserves to be treated as an individual with a focused, idiosyncratic approach, which takes into account the overall impression of that patient. While some patients may be started on as little as 10 mg of either a tricyclic antidepressant or a beta-blocker, other patients will be started on a larger dosage. The often quoted maxim of "start low and go slow" generally applies but how low to start depends on the assessment of each individual patient.

There are many available agents with which to treat migraine. These include: pizotifen [21], a serotonin antagonist which may cause weight gain or drowsiness; pericortin [22], an antihistamine with similar adverse effect; propranolol [20], already discussed with potential cardiac and respiratory problems; diazepam [23], which may evoke tolerance and habituation plus respiratory depression; aspirin [24] at low dosage (considered as effective as triptans) to reduce coagulability and platelet aggregation; methysergide [25] with potentially

very serious adverse effects of uretral, peritoneal or pleural fibrosis and hence rarely used; valproate [26], of questionable benefit and potential teratogenicity; gabapentin [27], an effective pain reliever and proven in chronic daily headache; carbamazepine [28] with proven genotypic risks such as HLA 1503* in Han Chinese evoking potential for significant allergic reaction; topiramate [29], which has negative psychotropic properties and potential teratogenicity similar to valproate but may lead to weight reduction.

It is imperative to select the medication which best suits the individual patient and that relies on the appropriate diagnosis, be it tension-type headache or migraine. Pizotifen, one of the anti-migrainous prophylactic agents, still remains a very effective treatment if its use is limited to migraine rather than other headache types.

The more aggressive intravenous remedies, including dihydroergotamine, metoclopramide, prochlorperazine, chlorpromazine, promethazine or the use of narcotic analgesics have been omitted from this overview. This is because, if the patient requires such aggressive intervention it is advisable to transfer that patient to the local Accident and Emergency Department for more detailed evaluation to ensure that more sinister diagnoses have been adequately excluded.

Conclusion

Headache is a very common presenting symptom that requires careful analysis. Management relies on correct diagnosis, based on detailed history and examination and, if in doubt referral for additional investigation and evaluation. GPs are ideally placed to manage the myriad of lifestyle issues and to treat those with occasional headaches. One should never overlook the potential for underlying medication overuse headaches, which are also best addressed at the GP level. If the headaches are more frequent or more intrusive into quality of life it would behave the GP to also involve the neurologist, who should work, hand in glove, with that GP.

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