Chapter 14

Frontal Headache

14

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Core Messages

- Frontal headache frequently accompanies obstruction and inflammation of the frontal sinuses, but may also reflect other sources of head pain not related to sinus pathology
- Focal areas of impaction and inflammation in the ostiomeatal complex may cause pain referred to the dermatomes of the first and second divisions of the trigeminal nerve
- A thorough history that defines the pattern of headache is essential to help diagnose its cause
- A diagnosis of sinus-related headache needs to be confirmed by a thorough nasal examination that should include nasal endoscopy and appropriate radiographs
- Many of the primary and secondary headache disorders may cause headache in the frontal region, and therefore need to be considered in the differential diagnosis

Contents

Introduction

Headache is a remarkably common complaint. According to the American Council for Headache Education (ACHE), 90% of men and 95% of women have had at least one headache during this past year [10]. Also, according to the ACHE, 90% of these are so-called primary headaches, i.e. migraine, tension-type, or cluster headaches, whereas 10% are secondary headaches resulting from other medical conditions, including infection.

Frontal headache is the most prevalent symptom of frontal sinus disease [13]. In the presence of other nasal symptoms, such as congestion or purulent discharge, the diagnosis is relatively straightforward. Interestingly, when patients present with frontal sinus opacification in the presence of chronic pansinusitis, they often do not complain of headache. However, disease limited to the frontal sinus typically causes severe frontal headache as the only symptom. If the frontal sinus is completely obstructed, there may be little drainage into the nose, and patients in fact may be unaware that their pain is sinus-related.

Patients with chronic headache pain will often present to a variety of specialists, looking to relieve their discomfort. Evaluation by their primary care physician or neurologist may result in a diagnosis of one of the primary headache syndromes, and an underlying sinus problem may be missed. Figure 14.1 shows the CT scan of a 16-year old girl who complained of headaches for over one year, without associated nasal obstruction or nasal discharge. She was diagnosed with migraines, but had not responded to traditional therapy. The scan demonstrates complete opacification of both frontal sinuses, and endoscopic frontal sinusotomy drained inspissated mucus that relieved her headache pain.

Likewise, patients will present to the otolaryngologist because they or their referring physician believe the headache to be related to underlying sinus pathology. The primary focus of the otolaryngologic evaluation is to exclude this possibility, but to do so requires not only an understanding of what can cause sinus-related pain, but also an ability to recognize other, more common headache syndromes. To evaluate a complaint of headache fully, the otolaryngologist must have an understanding of the common causes of headache with a working differential diagnosis that must include the primary headache syndromes.

Pathophysiology

Clinicians and patients alike recognize a relationship between nasal/sinus pathology and head pain, but this relationship is highly variable and therefore controversial. There has been little data to document irrefutably when and why it exists. In the case of acute frontal sinusitis, pressure changes occur that seem to make pain a constant symptom. However, in the setting of chronic sinusitis, pain may or may not be present, the reasons for which are difficult to discern.

Sluder was one of the first to describe frontal headache resulting from closure of the infundibulum and frontonasal opening leading to a vacuum or negative pressure, similar to that which occurs in the ear secondary to a blocked eustachian tube [29]. He observed that this phenomenon most often occurred in the frontal sinus rather than the other paranasal sinuses. Although confirmatory data is scant, several studies as cited by Stammberger and Wolf have demonstrated that hypoxia in the sinuses can give a sensation of pain [32].

Sluder was also one of the first to recognize that sinus inflammation can present with referred pain [29]. This concept was supported by a series of ex-

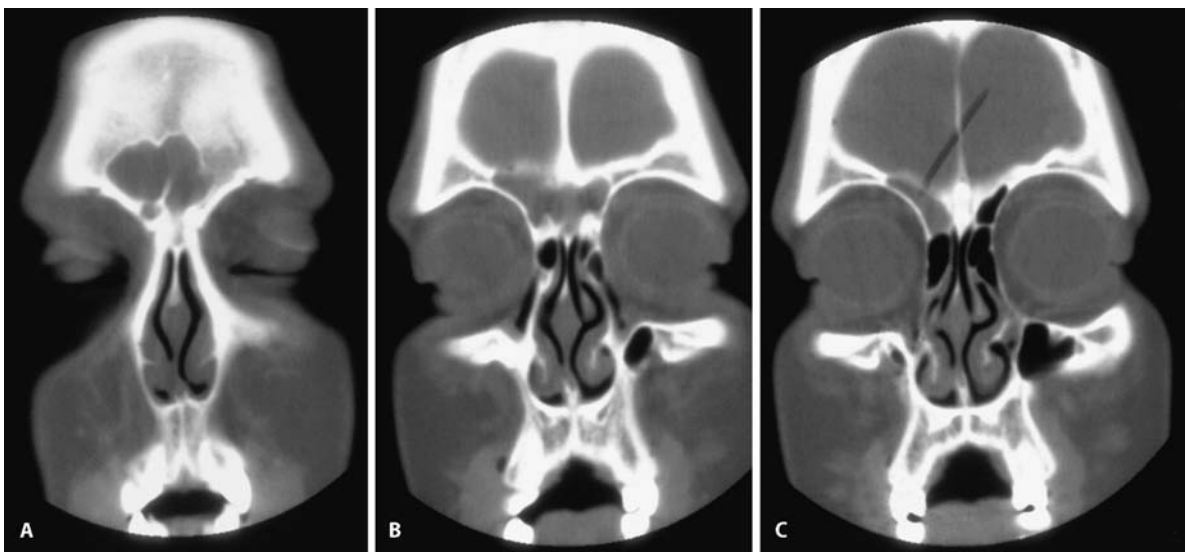

Fig. 14.1A–C. A 16-year-old girl complaining of frontal headaches for over one year was diagnosed with migraine headaches. **A,B** On CT scan, the frontal sinuses are completely opacified. **C** Prominent agger nasi cells with obstruction of the right frontal recess

periments performed by Wolff in the 1940's [39]. In a small series of human volunteers, noxious electrical stimuli were placed at various sites within the paranasal sinuses, at the sinus ostia, and within the nasal cavity. Surprisingly, the sinus mucosa was not very sensitive. Rather, the mucosa surrounding the ostia and nasal turbinates was much more pain-sensitive. In addition, the pain was often not felt locally, but was referred to dermatomes of the first and second divisions of the trigeminal nerve. Thus, whereas stimulation applied to the walls of the frontal sinus led to a mild localized pain at that site, stimulation of the frontal recess and frontonasal area produced an intense local pain and pain over the medial canthus, zygoma, and upper molars.

Wolff's experiments are considered classic and are frequently quoted [39]. However, in a recent review Blumenthal points out that these results were based on a very small sample of normal subjects, and some difficulty was encountered in actually accessing the sinus cavities [3]. Tarabichi reviewed a series of 82 patients with chronic sinusitis and headache undergoing endoscopic sinus surgery, and found no correlation between the severity and site of pain with the extent or location of mucosal disease [35]. This suggests the need for caution when trying to diagnose the etiology of headache based upon pain localization.

The ophthalmic and maxillary divisions of the trigeminal nerve innervate the nose and paranasal sinuses. Free nerve endings respond to chemical, mechanical, and caloric stimuli to prompt the release of substance P [32]. This produces an orthodromic impulse traveling along nociceptive C fibers that is interpreted centrally as pain, but may not be well localized by higher cortical centers. At the same time, Stammberger and Wolf have postulated that an antidromic impulse results in the peripheral release of substance P, causing localized neurogenic edema and hypersecretion [32]. This produces additional mucosal swelling and impaction, furthering the sensation of pain.

Based on this concept, areas of narrowing in the nose or ostiomeatal complex might be prone to impaction causing mechanical stimulation of the trigeminal nerve and thereby be associated with headache pain. It has long been recognized that a septal spur impacting the lateral nasal wall may sometimes cause atypical facial pain [5]. In addition, a number of recent studies have demonstrated a relationship between nasal contact points and headache pain [22, 36, 38]. Not uncommonly this pain may be frontal or periorbital in location. For example, the patient whose radiograph is pictured in Figure 14.2 presented with a 10-month history of persistent right frontal headaches. The CT scan demonstrates a large, obstructing agger nasi cell and secondary mucosal thickening within the frontal recess, although the frontal sinus seems to be well aerated. His headache was relieved by surgically opening the frontal recess.

Patients with persistent frontal headache are often referred to the otolaryngologist to rule out underlying nasal or sinus pathology. Considering the foregoing discussion, there are a number of situations that need to be considered. An acute frontal sinusitis almost always presents with severe frontal headache of relatively short duration, generally with associated nasal symptoms. Most patients with isolated chronic frontal sinusitis also typically present with headache, described as a dull, constant pressure, but often in the absence of nasal symptoms. Intranasal examination, including nasal endoscopy, may well be normal, making it difficult to distinguish these headaches from the more common headache syndromes.

The intracranial complications of frontal sinus infections include:

- Meningitis
- Epidural abscess
- Brain abscess
- Venous sinus thrombosis
- Subdural empyema
- Osteomyelitis of the frontal bone

The mechanisms of intracranial spread of frontal sinus infections include [4]:

- Perineural invasion
- Retrograde thrombophlebitis
- Direct extension through defects in the sinus bony walls

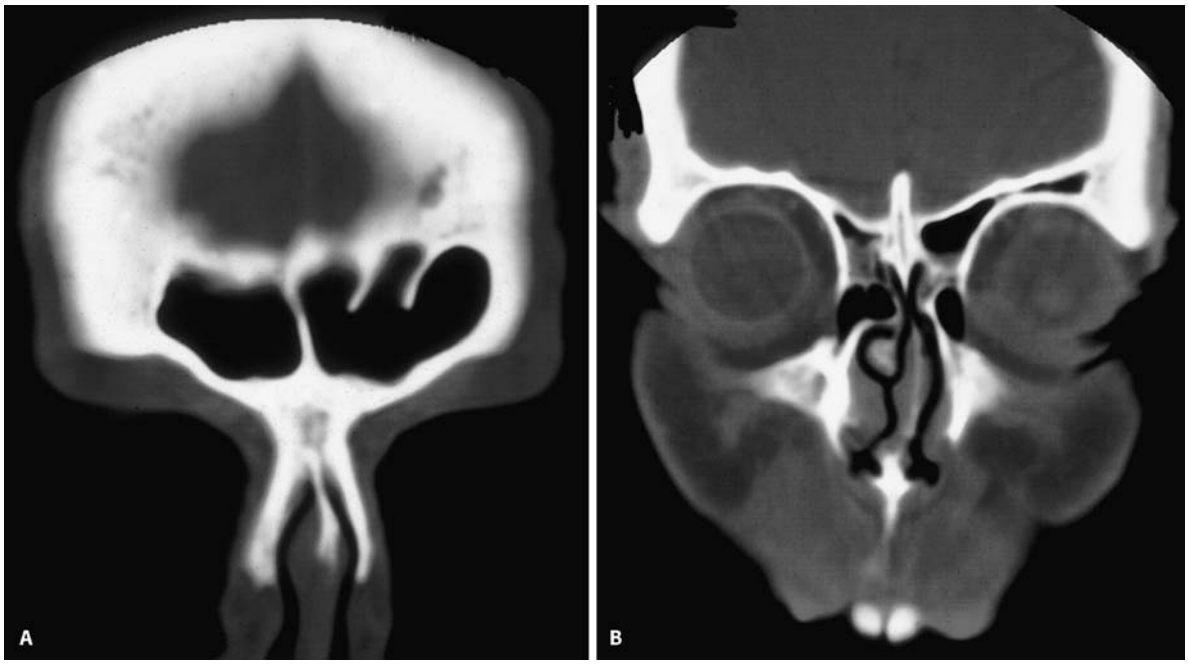

Fig. 14.2A,B. CT scan of a patient presenting with a 10-month history of right frontal headaches. **A** The frontal sinus appears aerated without disease. **B** A large, right agger nasi cell with secondary mucosal thickening within the frontal recess

Headache is the most prominent symptom should such complications develop, perhaps with focal neurologic signs.

In the absence of frontal sinus opacification, disease in the frontal recess can produce chronic frontal headache (Fig. 14.2). Similarly, abnormalities of the ostiomeatal complex and middle turbinate may cause periorbital and retro-orbital pain [14, 32]. On the other hand, it is important to remember the relatively high incidence of asymptomatic anatomic abnormalities within the ostiomeatal complex [4, 11]. Therefore, it is essential to try to verify that such findings are indeed related to the patient's symptoms [25].

Finally, osteomas of the frontal sinus may cause chronic headaches (Fig. 14.3). Although osteomas of the paranasal sinuses are not particularly common, the frontal sinus is the most frequent site of involvement [26]. Most often they are asymptomatic and are picked up incidentally on x-ray; however, continued growth may cause pressure against the anterior or posterior table, resulting in headache [26]. In addi-

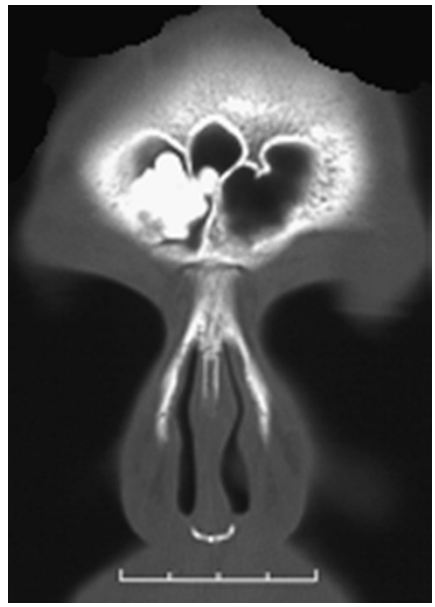

Fig. 14.3. A large osteoma within the frontal sinus in a patient presenting with frontal headaches

tion, formation at the frontonasal opening may impair ventilation of the sinus and result in pain [18].

Patient Evaluation

In order to determine the etiology for a patient's headache, much reliance is placed upon the history. It is a complicated problem because all aspects of the pain, including its onset, duration, location, and severity may be quite variable, no matter the cause. Nevertheless, appropriate questioning can usually delineate a pattern that is very suggestive for certain pathology. In this regard, asking the patient to keep a headache diary can be very helpful. As discussed below, the International Headache Society's (IHS) diagnostic criteria for the primary headache disorders are based exclusively on historical factors, so that proper questioning can help to rule out these types of headache [30].

The characteristics of headache associated with anterior ethmoid and frontal sinus disease are:

- The pain is localized around the [32]:
- Glabella
- Inner canthus
- Between the eyes
- Above the eyebrow
- The pain is generally described as dull, along with a sensation of pressure or fullness

In contrast, a migraine headache typically is characterized as throbbing or pulsating, although an acute frontal sinusitis may produce pain of a similar description. A tension-type headache is often described as a tight, drawing pain, whereas a sharp, lancinating pain is generally indicative of neuralgia.

The IHS criteria only recognize acute sinus headache, stating that chronic sinusitis is not validated as a cause of headache or facial pain unless associated with an acute exacerbation [3, 30]. As pointed out by Blumenthal [3], however, the IHS criteria derive from a consensus of expert opinion by a group of headache specialists, mostly neurologists. It is not validated by evidence-based studies [2]. These experts attribute the pattern of headache pain to the specific sinus involved by infection, as per Wolff's experiments from the 1940's [39] (Table 14.1).

More recently the American Academy of Otolaryngology/ Head and Neck Surgery Task Force on Rhinosinusitis defined major and minor symptoms of adult rhinosinusitis, listing facial pain as a major symptom and headache as a minor symptom [17]. These criteria, also, were based upon expert opinion, but acknowledged the frequency with which clinicians treating sinus disease have noted associated headache pain. A subsequent study has demonstrated the inconsistency of diagnosing sinusitis based upon symptoms alone [33], and a more recent modification of the task force criteria recommends the need for specific physical or radiographic findings to corroborate a diagnosis of sinus pathology [21]. Nevertheless, a number of studies have supported the relationship of head pain to chronic sinus disease [32, 35].

Table 14.1. International Headache Society criteria for acute sinus headache

Acute sinus headache

A. Purulent discharge in the nasal passage either spontaneous or by suction

B. Pathological findings in one or more of the following tests:
   a. X-ray examination
   b. Computerized tomography or magnetic resonance imaging
   c. Transillumination

C. Simultaneous onset of headache and sinusitis

D. Headache location
   a. In acute frontal sinusitis, headache is located directly over the sinus and may radiate to the vertex or behind the eyes
   b. In acute maxillary sinusitis, headache is located over the antral area and may radiate to the upper teeth or to the forehead
   c. In acute ethmoiditis headache, located between and behind the eyes and may radiate to the temporal area
   d. In acute sphenoiditis headache, located in the occipital area, the vertex, the frontal region, or behind the eyes

E. Headache disappears after treatment of acute sinusitis

Adapted from [18]

Head pain related to frontal sinus disease may be constant or intermittent. It is typically worse in the morning upon awakening, and is frequently exacerbated by bending over or the Valsalva maneuver. It may be affected by weather changes, and may be associated with complaints of dizziness, nausea, and photophobia, symptoms also suggestive for migraine headache [6].

If along with frontal headache patients present with active nasal symptoms such as congestion and drainage, this will usually alert the clinician to the possibility of an underlying sinus problem. Having said that, a prevalence of nasal symptoms has been reported in patients with migraine headaches [7], and patients may also have associated rhinitis that is unrelated to their head pain. Therefore, further workup is required to confirm the headache is indeed sinus-related. Similarly, patients may have no nasal complaints despite the presence of extensive inflammatory changes within the paranasal sinuses. Ultimately, a thorough nasal examination and appropriate radiographs best confirm the diagnosis.

To detect evidence of occult inflammatory sinus disease or sites of mucosal contact, anterior rhinoscopy alone is generally not adequate. To visualize the middle meatus, superior meatus, and sphenoethmoidal recess properly, nasal endoscopy is indispensable. Even posterior septal spurs may be missed when using just a nasal speculum. A variety of anatomic variations involving the nasal septum and ostiomeatal complex that predispose to both headache and recurrent sinusitis are now well described, and can usually be recognized during a routine endoscopic examination [32].

It is very important to correlate endoscopic findings with symptoms.

In patients presenting with frontal headache, findings suggestive of frontal recess/frontal sinus disease include:

- Purulent discharge from the frontal recess (Fig. 14.4)
- Polypoid change in the upper middle meatus under the attachment of the middle turbinate
- Enlarged and edematous agger nasi cell (Fig. 14.5)

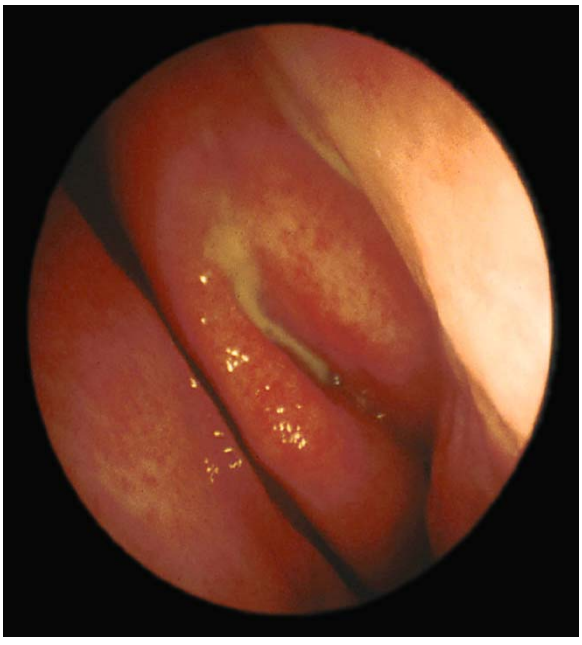

Fig. 14.4. Endoscopic view of a left middle meatus, with a purulent discharge from the upper middle meatus and frontal recess suggesting frontal sinus infection

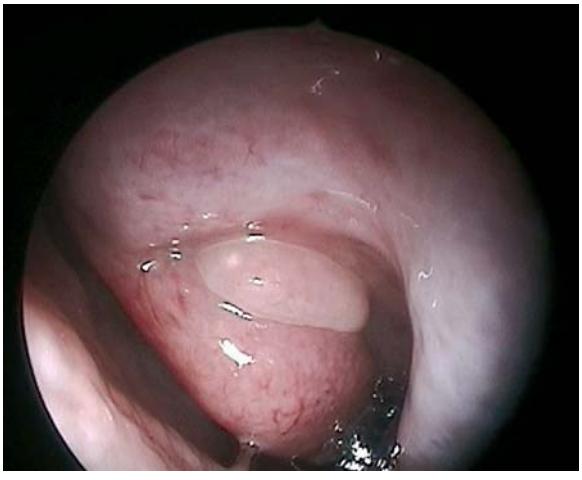

Fig. 14.5. Endoscopic view of a left middle meatus with mucosal edema over the agger nasi region and a polyp protruding from the upper middle meatus, suggesting frontal recess and frontal sinus disease

These findings would certainly warrant further investigation.

If a nasal endoscopic examination is unremarkable, but the history strongly suggests nasal- or sinus-related pain, radiologic study is still indicated. Plain sinus radiographs do not demonstrate the frontal recess and ethmoid sinus adequately, and as such are rarely helpful. Computed axial tomography (CT) in the coronal plane remains the procedure of choice, with appropriate bone windows [40]. In addition to frank opacification, it is important to look for areas of mucosal contact and secondary mucosal thickening, particularly in association with anatomic variations. When no mucosal inflammation at all is present but anatomic variations can be seen, the relationship of such findings to chronic headache becomes much more tenuous and controversial [8]. In these situations it is best to try to confirm this relationship by administering local anesthesia to these areas during an active headache, after which the patient should experience some relief [5, 24].

Alternatively, reducing nasal and sinus inflammation and observing a change in the patient's headache pattern may achieve some confirmation, although there is little data in this regard. Such therapy might include topical and systemic decongestants, topical and systemic steroids, antibiotics, or allergy medications as appropriate.

Differential Diagnosis

Patients with anterior facial headache pain will often assume their pain to be sinus-related, and thereby will frequently present to an otolaryngologist. Even if active sinus pathology is found, the patient's headache complaint may be unrelated. It is therefore important for the clinician to be able to consider a differential diagnosis, even though the patient may ultimately be referred elsewhere for management of these headache disorders. Many of the primary and secondary headache disorders may cause headache in the frontal region, and therefore need to be considered [25]. These headaches generally have associated symptoms that distinguish them from nasal- and sinus-related headache, and so the distinction is made largely based upon the history and ruling out any underlying nasal or sinus pathology.

Primary Headache Disorders

Migraine Headaches

Published in 1992, the American Migraine Study found that 17% of women and 6% of men had experienced a migraine headache in the previous year [34]. Since it is one of the most prevalent headache disorders, migraine headache must be considered in anyone presenting with chronic head pain.

Migraine headache is classified as occurring either with aura, formerly known as classic migraine, or without aura, formerly known as common migraine. In migraine with aura, the headache phase is preceded by symptoms likely consistent with transient cerebral ischemia, such as visual changes, hemiparesis, sensory loss, or aphasia. These symptoms can last for as long as one hour, and can also occur at

Table 14.2. International Headache Society diagnostic criteria for migraine headache [25]

With aura:
Two attacks or more fulfilling below criteria
At least three of the following:
One or more fully reversible aura symptoms
Aura symptoms gradually develop
Aura lasts less than one hour
Headache phase beginning within 60 minutes after the aura phase or simultaneously
History and physical do not suggest another disease to explain the headache disorder
Without aura:
Five or more attacks fulfilling the below criteria
Headache lasting 4–72 hours
Headache has at least two of the following
Unilateral location
Pulsating quality
Moderate to severe intensity
Aggravation with physical activity
During the headache, has one of the following:
Nausea or vomiting
Photophobia and phonophobia
History and physical do not demonstrate another disease to explain the headache disorder

the onset of headache. Migraine without aura, which accounts for 80% to 85% of migraine headaches, is not preceded with an aura, and therefore can be somewhat more difficult to diagnose [28]. However, the headache phase and its associated symptoms, such as nausea and vomiting, are identical between migraine with and without aura. The International Headache Society diagnostic criteria for migraine headache are listed in Table 14.2 [30].

A number of environmental and dietary factors can precipitate a migraine attack and thereby aid in the diagnosis.

Common migraine triggers include [20]:

- Menstruation
- Stress
- Fatigue
- Altered sleep
- Weather changes
- Exposure to bright lights
- Exposure to loud noises
- Perfume or other strong odors

Common dietary migraine triggers include:

- Red wine
- Chocolate
- Cheeses
- Aspartame
- Caffeine

Characteristics of migraine pain are:

- The pain tends to build over hours and lasts for hours to days
- The headache tends to be episodic
- Characterized by intense and throbbing pain
- Commonly unilateral in location although it may alternate sides

Frequenty migraine-associated systemic symptoms include:

- Nausea
- Vomiting
- Diarrhea
- Photophobia
- Phonophobia
- These symptoms are unusual in sinus-related headache.

It is not uncommon for patients with migraine headache to experience pain in the frontal region. In a study of patients with migraine without aura, the initial headache was localized solely to the frontal region in 31% and to the frontal region along with another region in an additional 25% of patients [27]. In a study of patients suffering migraine with aura, the initial headache involved the frontal region in 59% of patients [28].

In an attempt to ease the diagnosis of migraine headache, a number of investigators have explored the possibility of using screening tools generally consisting of shortened questionnaires that still maintain reasonable reliability. Lipton et al. [19] evaluated a total of 563 patients presenting with headache in a primary care setting. All patients completed a self-administered migraine screener and were then evaluated by a headache expert, the diagnosis of migraine being assigned based upon IHS criteria. They found that three variables had the strongest and most significant association with the diagnosis of migraine: nausea, photophobia, and headache-related

Table 14.3. Three-question migraine screening tool [19]

(Positive response to two out of three):

1. You feel nauseated or sick to your stomach
2. Light bothers you (a lot more than when you don't have headaches)
3. Functional impairment due to headache in last 3 months

disability, with a predictive value of 93.3%. The authors do provide the caveat that this is a screening tool and not a diagnostic instrument. Patients reporting positively to two of the three screening items should then be evaluated more thoroughly to establish a diagnosis of migraine headache (Table 14.3).

Tension-Type Headache

Tension-type headache is the most common headache disorder, with a reported lifetime prevalence of 69% in men and 88% in women [15]. In contrast to migraine headache, tension-type headache is characterized by a dull aching pain of mild to moderate severity typically in a hatband distribution. Some describe the pain as a pressure-like sensation or tightness, most commonly located in the frontal and temporal regions and less commonly in the parietal and occipital regions [25]. One review found the frontal region to be the predominant region of pain in 40% of patients [16]. Although the pain is usually bilateral, it may be unilateral in 10% to 20% of patients.

Tension-type headache is classified as either episodic, occurring less than 15 times per month, or chronic, occurring more than 15 times per month. The IHS diagnostic criteria for tension-type headache are listed in Table 14.4 [30].

Table 14.4. International Headache Society diagnostic criteria for tension-type headache [25]

Ten or more headaches fulfilling the below criteria
Less than 15 headaches per month (episodic) or greater than 15 headaches per month (chronic)
Lasting from 30 minutes to 7 days
At least two of the following:
Pressing or tightening quality
Mild to moderate intensity
Bilateral location
No aggravation with physical activity
Both of the following:
No nausea or vomiting
Photophobia and phonophobia are absent (one may be present)

Cluster Headache

Cluster headaches are not very common, but may easily be confused with sinus headaches. The pain is unilateral, localized to the periorbital, frontal, and temporal regions, and is perhaps the most extreme headache experienced by patients (hence the term *suicide headaches*). The frontal region in fact is a common site for localization of cluster headache pain, involved in as many as 77% of cluster attacks [21]. They tend to be shorter in duration than migraines, lasting 15 to 180 minutes without treatment, but may occur up to 8 times per day. A typical pattern is 1 to 3 episodes per day over a period of 6 to 8 weeks followed by a symptom-free interval of 9 to 12 months. The headaches are generally accompanied by autonomic symptoms on the same side, including lacrimation, rhinorrhea, ptosis, and miosis.

In contrast to migraine, which is three times more common in women, cluster is five times more common in men. These men often display certain physical characteristics, such as a ruddy complexion, deep furrows of the forehead, and deep folds of the glabellar and nasolabial areas. They tend to be tall and trim, usually smoke, and are more likely to consume alcohol.

A 35-year-old white male was referred because of a severe intermittent right frontal headache for one month. He described this as following an upper respiratory infection, but had no residual congestion or drainage. However, he did describe intermittent tearing of the right eye. The headache was described as throbbing retro-orbital and frontal pain. This patient had a similar headache three years previously, and at that time endoscopic sinus surgery was performed and the headache resolved. Therefore, when this current episode began, he was placed on antibiotics and steroids, but did not respond.

Figure 14.6 is an endoscopic view of the right ethmoid cavity in this patient, demonstrating postsurgical changes with an open frontal recess. His sinus scan is shown in Figure 14.7, and is clear of disease. This patient's headache was not related to sinus pathology, but rather was a cluster headache and did respond to appropriate medication. One might speculate that the headache he experienced 3 years previously also was cluster, but this demonstrates the con-

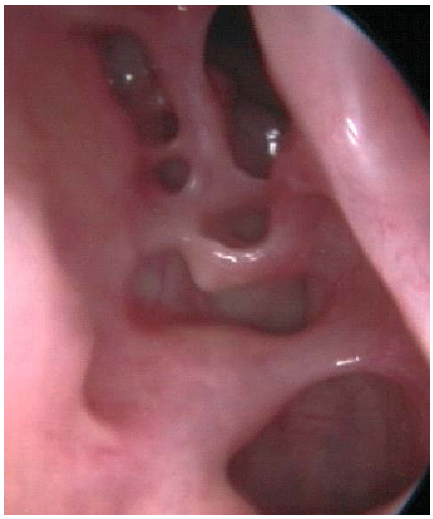

Fig. 14.6. Endoscopic view of the right ethmoid cavity in a patient who had surgery several years previously, now presenting with severe right frontal headache

fusion that might arise when evaluating these patients.

Cluster headache is classified as episodic, persisting from 7 days to 1 year, or chronic, lasting greater than 1 year. The IHS criteria for diagnosing cluster headache are listed in Table 14.5.

Table 14.5. International Headache Society diagnostic criteria for cluster headache [25]

Five attacks fulfilling below criteria
Severe unilateral orbital, supraorbital, or temporal pain lasting 15 to 180 minutes untreated
Headache associated with one of the following:
Conjunctival injection
Lacrimation
Nasal congestion
Rhinorrhea
Facial sweating
Miosis
Ptosis
Periorbital edema
Frequency: one every other day to eight per day
Examination does not suggest another neurologic disease

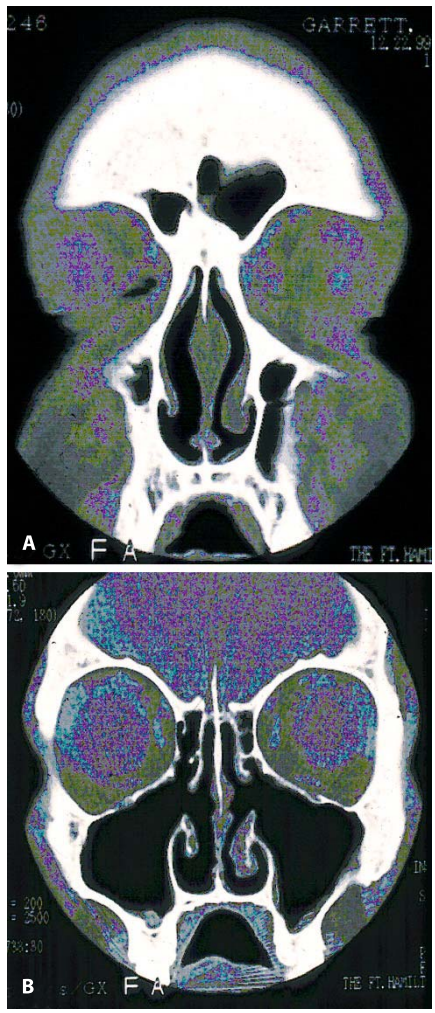

Fig. 14.7A, B. The CT scan of the patient in Fig. 14.6, demonstrating postsurgical changes but no evidence of active sinus disease

Secondary Headache Disorders

Intracranial Neoplasm

Intracranial neoplasm is the most feared cause of headache, but is not common. However, in the absence of focal neurological signs, presenting headache symptoms are usually nonspecific. Forsyth and Posner reviewed the pattern of headache in a series

of 111 patients with primary (34%) and metastatic (66%) brain tumors [12]. Headache was present in 48% of these patients, with 77% resembling tension-type, 9% resembling migraine, and the remaining 14% resembling other types of headache. The pain was intermittent in 62% and constant in 36%, and generally of moderate to severe intensity. The frontal region was the most common site of headache, occurring in 68%, and was usually bifrontal although worse ipsilateral to the tumor. Only 25% of patients had unilateral headaches, always ipsilateral to the tumor. In contrast to true tension-type headache, pain was exacerbated by bending over in 32% and by a Valsalva maneuver in 23%. The headaches were worst in the morning in 36% and interfered with sleep in 32%. Nausea and vomiting were seen in 48% of patients.

Headache as the only presenting symptom in association with intracranial neoplasm is unusual, reported by one study in only 8% of patients [37]. Focal neurological symptoms were present in 57% of patients, while seizures occurred in 9%.

Patients with pre-existing headache disorders that develop headache secondary to an intracranial neoplasm can be very difficult to diagnose, as very often the headache pattern may be similar [12]. Any significant change in the quality, severity, or frequency of the patient's underlying headache should arouse suspicion, and warrants further radiological evaluation.

Temporal Arteritis

A diagnosis of temporal arteritis should be considered in any patient greater than 50 years of age with a new-onset headache, regardless of the location of that headache. Temporal arteritis is a vasculitis involving small and medium-sized vessels, and typically produces headache as its presenting symptom. The temporal location is the most common site of pain, but the frontal region has been reported as the primary site in 33% of patients [31]. Other sites include the occipital and vertex areas.

Other symptoms may include jaw claudication, fever, and visual loss. The erythrocyte sedimentation rate (ESR) is a good screening test, having been found to be greater than 50 in 89% of patients and greater than 100 in 41% [1].

Referred Headaches

Pain may occasionally be referred to the frontal region in patients with cervicogenic headaches. These are headache syndromes that arise from pathology in the cervical region, such as entrapment of the C2 nerve root or greater occipital nerve, or from a cervical facet arthropathy [23]. The headaches typically begin in the cervical region and may radiate to the frontal, temporal, or orbital regions. The pain is often precipitated or aggravated by movement of the neck or by sustained positions. Patients will often report a history of head trauma or whiplash.

Myofascial pain syndromes may also sometimes refer pain to the frontal region. These are generally associated with trigger points that refer pain to distant locations. Trigger points of the sternocleidomastoid and cervico-occipital muscles may refer pain to the frontal region [9].

Conclusion

Otolaryngologists often see patients with frontal headache for evaluation of underlying sinonasal pathology. For successful diagnosis and appropriate management, the otolaryngologist must understand the presentation and differential diagnosis of primary and secondary headache disorders that may cause headache in the frontal region.

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