PRACTICE POINTER

Orofacial pain

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0.5 HOURS

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Orofacial pain or facial pain described as an ache in the front part of the head (including the oral cavity) is a common presentation in primary care. Nearly a quarter of patients in a British primary care study (2504 adult patients) reported orofacial pain.[1] The pain may be musculoskeletal, dental, neural, or sinogenic in origin.[2]

In our clinical experience orofacial pain is often incorrectly attributed to rhinosinusitis, commonly referred to as sinusitis. Some patients refer to the pain as a sinus headache. In a case series of 973 patients with presumed rhinosinusitis, only 1 in 10 patients were confirmed to have paranasal sinus disease on endoscopy and computed tomography.[3] As such, the correct diagnosis may be missed or delayed and result in inappropriate treatment and prolonged symptoms.

This article aims to enable readers to achieve a more accurate diagnosis of orofacial pain focusing on the characteristics and associated features of facial pain and presents an initial approach to managing these patients in primary care. We focus on chronic orofacial pain—that is, pain lasting more than 12 weeks—as usually by then a trial of treatment might have been explored in primary care, prompting reconsideration of the diagnosis if the symptoms persist.

What are the common causes of orofacial pain?

While there is no robust evidence on the prevalence of different conditions, migraine and mid-segment facial pain are among the commonest causes of chronic orofacial pain.[4] However, these are often misdiagnosed as rhinosinusitis because of accompanying nasal symptoms. We describe below these conditions and their presenting features.

WHAT YOU NEED TO KNOW

- Orofacial pain is not a hallmark feature of rhinosinusitis and affects only 10% of patients with rhinosinusitis
- Consider alternative diagnoses such as migraine, midfacial segment pain, and cluster headaches, which can present with facial pain and nasal symptoms such as rhinorrhoea and nasal congestion
- Offer a trial of treatment for 4 weeks for the most likely diagnosis and ask the patient to return if symptoms do not improve

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

We discussed the patient journey with several migraine patients in our ENT practice who had been misdiagnosed with chronic rhinosinusitis before attending their appointment. Despite their symptoms failing to improve with medical and surgical therapy, these patients were still convinced of the latter diagnosis. Patients shared the need for detailed communication explaining the diagnosis. We have emphasised this in the section on management.

Rhinosinusitis

Rhinosinusitis is inflammation of the lining of the nasal cavity and the sinuses, with or without the formation of nasal polyps. Symptoms can be acute (<12 weeks) or chronic (>12 weeks). It is estimated to affect 2-10% of the population.[4] A population based study from Canada (73 000 participants) reported a prevalence of 3.4% in men and 5.7% in women.[5]

Orofacial pain is not a hallmark feature of rhinosinusitis. The European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS)[4] defines four symptoms of rhinosinusitis, of which the first two must be present to support a diagnosis (box). As such, patients who have orofacial pain but do not have nasal congestion, nasal blockage, or anterior or posterior nasal discharge are unlikely to have rhinosinusitis.

Data from cohort studies show that orofacial pain is a poor predictor of chronic rhinosinusitis, and patients are more likely to be misdiagnosed if pain is used as a criterion to screen patients for rhinosinusitis.[6-9] A prospective observational study involving 108 patients with confirmed chronic rhinosinusitis found that less than a third of patients had orofacial pain.[7] This figure drops to 1 in 10 patients when nasal polyps are present,[8] which suggests that orofacial pain is even more uncommon in patients with chronic rhinosinusitis with nasal polyps.

The International Headache Society states: "chronic rhinosinusitis is not validated as a cause of headache or facial pain unless relapsing into an acute stage."[10] Patients with acute rhinosinusitis are more likely to present with orofacial pain caused by the irritation of sensory nerves by inflammatory mediators, pressure

Symptoms of rhinosinusitis

1 Nasal blockage, congestion, obstruction—Essential for diagnosis
2 Nasal discharge (anterior rhinorrhoea or post-nasal drip)—Essential for diagnosis
3 Facial pain
4 Reduced sense of smell

the bmj Visual summary

Orofacial pain

Identification and initial management

Chronic orofacial pain (lasting more than 12 weeks) can be debilitating for patients. After this time, primary care treatments have often been exhausted, and referral is an obvious next step. However, many cases are incorrectly attributed to rhinosinusitis, which can lead to inappropriate referrals and delay for patients. A more accurate diagnosis may be performed by focusing on the characteristics and associated features of facial pain, as described below.

Do they have nasal blockage or congestion, with or without nasal discharge?

Yes

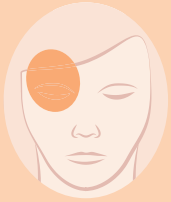
No

Do they have symptoms of skin or soft tissue tenderness or swelling?

Yes

No

Cluster headache



- Unilateral pain
- Severe
- Lacrimation
- Conjunctival injection

Pain is short lived, lasting about 1 hour and can occur in "clusters" of up to 8 times a day for weeks

Refer immediately to neurology

Acute therapy
- High flow oxygen
- Subcutaneous triptan

May also require
- Neuroimaging

✗ Simple analgesics

Acute management with paracetamol, aspirin and NSAIDs are not recommended

Midfacial segment pain

- Bilateral pain
- Constant

Has similar characteristics to tension-type headache. The aetiology is unknown and it is often considered as a diagnosis of exclusion

Low dose amitriptyline

Can be initiated in primary care if confident with diagnosis

Minimum treatment duration 6 months. Wean off if no longer required

Rhinosinusitis

- Purulent nasal discharge

Inflammation of the lining of the nasal cavity and the sinuses. Can be acute or chronic, although chronic is more commonly seen in clinical practice

- Nasal steroids
- Nasal douching

Patients should be re-evaluated after 4 weeks, if their symptoms have improved then treatment can be continued long term

Oral steroids

A 10-day course can be initiated if nasal polyps are clearly seen

Migraines

- Nausea
- Photophobia
- Phonophobia
- Improves with rest

Patients with migraine commonly report pain in one half of the head, but may also report a facial location of pain

Address triggers by managing:
Sleep · Exercise · Diet · Caffeine · Stress

Acute therapy
- Aspirin · Ibuprofen
- A triptan · +/- NSAID
- +/- paracetamol

Preventive therapy
- Propranolol
- Topiramate
- Candesartan
- Tricyclic antidepressant
- Flunarizine*

Tension-type headache

- Non pulsatile pain
- No nausea
- No vomiting

A diffuse headache described as a band around the head. Usually a featureless headache

Acute therapy
- Paracetamol
- Ibuprofen

Preventive therapy
- Acupuncture
- Tricyclic antidepressant
- Amitriptyline

Temporomandibular disorder

- Clicky jaws
- Bruxism
- Jaw locking
- Temporomandibular joint laxity

Affects the temporomandibular joint and the masticatory muscles

Management is multifaceted including
- Lifestyle changes
- Relaxation techniques
- Simple analgesia
- Low dose benzodiazepines
- Neuropathic agents
- Specialist management, such as joint injections, arthroscopies, arthroplasties, and joint replacement

Consider referral if symptoms are refractory to community management

Neurology; Ear nose and throat	Ear nose and throat	Neurology	Primary care	Oral and maxillofacial

* Flunarizine is not licensed in the UK

Good and poor predictors of sinogenic facial pain	
Good predictive value	**Poor predictive value**
Increase in severity from sitting to lying supine, or on flying or skiing	Increase in severity on bending forward
Reduced sense of smell	Normal sense of smell
Improvement with antibiotic or corticosteroid treatment	No improvement with antibiotic or steroid treatment
Purulent, offensive nasal discharge	Severe facial pain affecting activities of daily living
Worse with upper respiratory tract infection	Tenderness or swelling in facial skin

changes, and a blocked non-draining sinus.[11] The pain is severe and usually unilateral. It is associated with fever and nasal obstruction, and in the case of acute maxillary rhinosinusitis, can present with dental pain.[12] True recurrent acute rhinosinusitis is rare, and patients will usually have a vascular aetiology for their pain such as migraines or cluster headaches.[4]

As some patients with chronic orofacial pain may report associated nasal symptoms, it can be difficult to assess if the pain is related to sinusitis, especially if the patient clearly points to the anatomical sites of the sinuses like their cheeks or forehead as the site of their pain (see infographic).[13] The table lists certain predictors that support or diminish the diagnosis of rhinosinusitis.[4 9 11]

Migraine

Chronic disabling headaches are more likely to be related to migraines than rhinosinusitis.[14] EPOS states: "the majority of sinus headaches can actually be classified as migraines."[4] For this reason, patients who present in the community with "sinus headaches" should have a migraine diagnosis explored before considering rhinosinusitis.

A recent systematic review of community-based studies (over 6 million participants) reported a prevalence of 1 in 10.[15] While patients with migraine commonly report pain in one half of the head, a subset of patients can have a facial location of pain,[10 16] with otherwise characteristic symptoms of migraine such as nausea, vomiting, sensitivity to light and sound.

In a study of 517 patients with migraine, nearly 9% of patients had pain involving their head and lower half of the face,[17] and these patients were also more likely to have associated trigemino-autonomic symptoms like rhinorrhoea and nasal blockage. Migraine is often misdiagnosed as sinus headache or rhinosinusitis due to associated symptoms such as nasal congestion, rhinorrhoea, inflamed eyes or cheek with the migraine attacks.[14 18 19] In a prospective cohort study of 2991 patients with a history of self described or physician diagnosed sinus headache, 88% of patients (2396) were diagnosed with migraines using the International Headache Society diagnostic criteria. Of these, over 80% of patients reported sinus pain or pressure, 63% reported nasal congestion, and 40% reported rhinorrhoea.[19]

Tension-type headache

Patients commonly report symmetrical frontal or temporal headache[4] described as a band around the head (see infographic). It has a lifetime prevalence of up to 78%, which suggests that most people would have experienced it at some point in their life.[10] Like migraine, if it occurs more than 15 days in a month it is considered chronic. Unlike migraine, tension-type headache is usually a featureless headache. Some patients have pericranial tenderness in the frontal or temporal region, and in the masseter, pterygoid, sternocleidomastoid, splenius, and/or trapezius muscles.

Midfacial segment pain

This condition is not well known in clinical practice despite affecting a third of patients presenting with facial pain to the ENT clinic.[4] Midfacial segment pain has similar characteristics to tension-type headache and can be seen as a category of tension-type headache. The main distinguishing feature is the midface location of the pain in the forehead, peri-orbital region, retro-orbital region, cheeks, or nose (see infographic).[20] The aetiology is unknown, and it is often a diagnosis of exclusion. Nasal blockage can be present, which may be associated with the condition or an incidental coexisting rhinitis.[4] Symptoms are episodic and gradually become persistent. Tenderness and swelling over the cheeks and/or forehead and hyperaesthesia are common findings.

Cluster headache

Cluster headache is characterised by attacks of severe unilateral pain in the orbital, supraorbital, and/or temporal region (see infographic). The hallmark feature is the severity of the pain. Patients are usually restless or agitated and unable to lie still. Pain is short lived, lasting about an hour (range 15-180 minutes) and can occur in "clusters" of up to eight times a day for weeks. It is accompanied by prominent cranial autonomic symptoms such as nasal congestion, eye watering, ptosis, and sweating.

National Institute for Health and Care Excellence (NICE) guidelines reiterate that these patients should not be given simple analgesics such as paracetamol, aspirin, or non-steroidal anti-inflammatory drugs (NSAIDs) during an acute attack.[21] The International Headache Society recommends that patients should be managed by a neurologist who can prescribe high flow oxygen and subcutaneous triptan for acute therapy and request neuroimaging if required.[10]

Temporomandibular disorders

Temporomandibular disorders are a group of musculoskeletal conditions affecting the temporomandibular joint and the masticatory muscles and are a common cause of chronic orofacial pain.[21] Pain typically affects the pre-auricular region and can radiate around the ear to the cheek, temple, teeth, or jaw angle. An American study of 196 patients showed that referred pain in the cheek, forehead, and ear on palpating specific trigger points in the head and neck region is a common sign.[22]

SOURCES AND SELECTION CRITERIA

We searched PubMed using the keywords "facial pain," "atypical facial pain," "facial neuralgia." All articles published in English that discussed the differential diagnoses and management of facial pain were reviewed. Articles on specialist treatment of one type of facial pain were excluded as we agreed to present an approach to orofacial pain for non-specialists and primary care doctors.

ADDITIONAL EDUCATIONAL RESOURCES

- Fokkens WJ, Lund VJ, Mullol J, et al. *European Position Paper on Rhinosinusitis and Nasal Polyps 2012*. www.ep3os.org/EPOS2012.pdf.
- Pocket Guide. European Position Paper on Rhinosinusitis and Nasal Polyps. 2012. www.southernstatesrhinology.org/files/2013_SpeakerTalks/EPOSpocketguide2012.pdf.
- National Institute for Health and Care Excellence. Headaches in over 12s: diagnosis and management (clinical guideline CG150). 2015. www.nice.org.uk/guidance/cg150.
- National Institute for Health and Care Excellence. Temporomandibular disorders (TMDS). 2016. https://cks.nice.org.uk/temporomandibular-disorders-tmds.

Dental pain

Dental pathology is an important cause of orofacial pain. In our experience, odontogenic pain usually does not cause diagnostic uncertainty as the patient accurately reports dental pain, has a history of poor dentition or previous dental work, and any current dental disease is evident on examination.

How to make a diagnosis?

The characteristic features and site of pain can help distinguish these conditions on history and examination (see infographic).

Severe pain that interferes with a patient's activities of daily living is more likely to be migraine or cluster headaches, unlike pain from temporomandibular disorder, midfacial segment pain, and tension-type headache. Associated nasal symptoms generally support rhinosinusitis but be aware of trigemino-autonomic symptoms in migraines and the possibility of a coincidental rhinitis given its high prevalence in the adult population. Ask for a family history or previous history of migraine.

In examination, palpate the skin overlying the sinuses. Tenderness over the sinuses should raise suspicion of midfacial segment pain. Palpate over and around the temporomandibular joint for tenderness going as far superiorly as the temple, inferiorly at the jaw line, posteriorly over the mastoid, and anteriorly over the cheek, as trigger points for temporomandibular disorders lie within this area. While palpating the temporomandibular joint, ask the patient the open and close their mouth and feel for jaw clicking and laxity. Laxity refers to increased joint mobility and protrusion of the joint laterally on mouth opening. Laxity and jaw clicking are signs of abnormal temporomandibular joint. Anterior rhinoscopy can be performed with an otoscope to look for mucopus in the nasal cavities

EDUCATION INTO PRACTICE

- How often do I diagnose a patient with rhinosinusitis based on orofacial pain alone?
- Think of a patient with orofacial pain or sinus headache whom you have seen recently in your practice. Based on reading this article, are there additional features you will look for on history and examination to consider alternative diagnoses?
- How will you explain to your patient about the possible causes of their pain and the need for a trial of treatment?

(which supports a diagnosis of rhinosinusitis) or enlarged inferior turbinates (which suggests rhinitis). We recommend a full cranial nerve examination in all patients with chronic orofacial pain to exclude rare intracranial tumours that can present with orofacial pain.

Investigations are not usually required to confirm the diagnosis.

How is it managed?

Because of the overlapping symptoms, often two or more diagnoses are possible. Offer the patient a trial of treatment for the most likely diagnosis for four weeks. If there is no improvement, discontinue it and consider an alternative diagnosis and treatment. It is important that patients are not dismissed when they express doubts in the diagnosis. Explain to your patient the complex nature of orofacial pain that can cause diagnostic difficulties. Patients may find it reassuring to know that this is not uncommon. Emphasise the need to follow up if symptoms do not improve.

The symptoms mentioned in the box are sufficient to support a diagnosis of rhinosinusitis and to start treatment in primary care. The management for chronic rhinosinusitis depends on the severity of symptoms and the presence of polyps. The EPOS guidelines recommend offering a nasal steroid spray and nasal douching.[23] Re-evaluate the patient at four weeks for relief of symptoms. If symptoms have improved then treatment can be continued long term.

We recommend following relevant guidelines for the management of migraine and tension-type headache. Advise patients to follow a daily routine with regular sleep, exercise, diet, and periods of relaxation and to reduce caffeine intake. Patients with tension-type headache can be offered paracetamol 1 g or ibuprofen 400 mg for an acute episode.

If mid-facial segment pain is the likely diagnosis, low dose amitriptyline (10 mg at night for at least six weeks) is recommended.[20] This should be continued for a minimum of six months, and the patient then weaned off if it is no longer required.[20]

The management of temporomandibular disorder is multifaceted, including lifestyle changes, relaxation techniques, simple analgesia such as paracetamol or NSAID, low dose benzodiazepines, and neuropathic agents.[24] Specialist management involves injections into the temporomandibular joint, arthroscopies, arthroplasties, and joint replacement surgery.

When to refer?

In most cases a referral is only required when the patient's symptoms are refractory to medical therapy started in the community or there are associated red flag symptoms. Cluster headache is the only condition that warrants immediate referral to neurology because of the potential need for neuroimaging and specialist treatment.

If the diagnosis is in doubt, or in the presence of red flag signs—such as cranial neuropathies, dysphagia, dysphonia, or neck lump—arrange an urgent review with an ear, nose, and throat (ENT) specialist in secondary care. The diagnosis of rhinosinusitis is confirmed with the evidence of polyps, discharge, or oedema on anterior rhinoscopy or endoscopy, or sinus features of mucosal changes on computed tomography. Sinus computed tomograms (CTs) are usually performed in patients where sinus surgery is being considered when medical therapy has been unsuccessful.

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