

The Otolaryngologist's Function in Diagnosing and Treating "Sinus Headache"

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Abstract

To assess how different nasal and sinus-related clinical disorders relate to the type, location, severity, and occurrence of headaches. The study included all patients who had sinus and nasal infections, both acute and chronic, as well as headaches. Along with clinical, radiographic, and endoscopic assessment, the diagnosis was confirmed. Different parameters are grouped appropriately. The most frequent nasal condition observed in otolaryngology OPD is chronic rhinosinusitis/chronic recurrent rhino sinusitis, which has a major morbidity on the general population as well as a significant economic burden. The headache is the most typical related symptom that requires attention. The type, intensity, and pattern of the headache can help us make the right diagnosis.

A rare and unpleasant primary condition called a cluster headache can manifest itself in episodic or persistent patterns. According to several researchers, the brain area of the hypothalamus, which controls the autonomic nervous system and endocrine function, is involved in the pathophysiology of cluster headaches. According to some writers, people with this condition have impaired glucose metabolism. We administered oral high-dose thiamine to a patient with cluster headaches in light of the function that thiamine plays in the brain, in energy metabolism, and in the regulation of pain. We present a case of a 41-year-old guy who has had main persistent cluster headaches since he was 15 years old. In December 2016, the patient started receiving high-dose thiamine orally. A significant improvement in the symptoms was seen after taking oral thiamine supplements. All of the disease's symptoms were successfully reversed by the treatment. Our research reveals that a thiamine deficit caused by enzymatic abnormalities or by dysfunctional thiamine circulation in the intracellular space may contribute significantly to the aetiology of cluster headache symptoms by impairing neuronal selectivity in the disease-related areas.

Keywords: Headache; Sinusitis; Sinugenic; Non-Sinugenic; Migraine

Introduction

In daily clinical practise, sinus headaches are a relatively prevalent illness that are frequently misdiagnosed and poorly managed in conjunction with a variety of sinogenic and nonsinogenic conditions. Patients around the world experience different types, patterns, and intensities. The phrase "sinus headache" is frequently used to describe people who have facial pain. An incorrect diagnosis of sinus headache may result in pointless diagnostic procedures, operations, and medical care. Depending on the patient's appearance, diagnosing a sinus headache caused by persistent rhinitis may be significantly more challenging [1]. It is crucial to rule out any connection between chronic rhinosinusitis and allergic rhinitis because both illnesses are fairly common in everyday ENT practise. Other significant features that may contribute to or cause headaches include mucosal contact points, agar nesi, hellar cells, concha bullosa, enlarged bulla ethmoidalis, aplastic frontal sinuses, and a narrow fronto-ethmoidal recess [2].

The gold standard of care for treating medically refractory inflammatory sinusitis and other pathologies of, or anatomical conditions involving, the Para nasal sinuses is endoscopic sinus surgery (ESS). Injury to the delicate bones of the medial orbital wall is a risk of ESS and per orbital violation can seriously endanger the extra ocular muscle, fat, nerves, and globe. Despite the fact that the US performs over 19,000 ESS treatments each year, ocular problems are thankfully very uncommon, occurring in about 0.3 to 3 percent of all surgeries. Sino nasal disease severity, surgeon experience, revision surgery, patient age, and anatomical variations are risk factors for ophthalmic injury. While the orbital floor and nearby inferior rectus muscle are typically not regarded as a high-risk area, the majority involve injury to the medial rectus muscle through violation of the lamina papyracea. Although there have been reports of injuries to the inferior rectus

muscle, they have nearly always been coupled with injuries to other orbital structures, most frequently the medial rectus. Only one solitary instance has been documented in the literature. There aren't many standards on what to do if orbital floor damage is discovered during ESS, and how it's handled after that could have an impact on long-term results like persistent diplopia [3].

A primary headache condition known as cluster headache (CH) is characterised by recurrent, brief (15–180 minutes) attacks of extremely severe unilateral per orbital pain accompanied by ipsilateral autonomic symptoms like lacrimation, nasal congestion, ptosis, meiosis, lid edoema, and eye redness. The hypothalamus, a tissue that controls endocrine function and the autonomic system, has been linked to the pathophysiology of CH, according to a number of writers. For CH, there is no treatment. However, both the preventative medicines and the acute painful assaults have some successful treatments. The disease's progression is unpredictable. Cluster headaches (CH) can be categorised as chronic if there are no regressive phases [4].

Sinugenic headache and face pain are real and frequently observed

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in clinical practise. When chronic sinusitis is the underlying cause of a problem, the maxillary sinus may be where the headache originates. In these circumstances, surgery is necessary to address the issue. Patients with anatomical variations, blocked osteomeatal complex, one or more contact points, sphenoid-ethmoid complex diseases, nasal polyps, and blocked osteomeatal complex can also experience headaches and require surgical interventions in addition to medical care [5].

Materials and Methods

The current study, "sinus headache" diagnosis and conundrum, was carried out in a medical college facility with tertiary care in central India. The study's 128 participants were all regular visitors to the ENT OPD. Patients with allergic rhinitis, acute and chronic rhinosinusitis, and other sinus nasal disorders linked to headaches were included. A thorough history and examination were performed. The specifics of each patient's headache, including its onset, location, duration, type, frequency, progression, aggravating and relieving variables, and nocturnal fluctuations, were specifically questioned. Then a thorough anterior rhinoscopy and endoscopic inspection of the nasal cavity is performed to identify any nasal anatomical variation, deformity, or mucosal contact points. Standard blood workups, PNS X-rays, and PNS coronal/axial CT scans were performed as needed. Patients who had obstructive chronic rhinosinusitis, contact sites, and anatomical changes had surgery [6].

Discussion

The most dreaded complication of the uncommon heart defect known as a sinus of Valsalva aneurysm is rupture with aortic cardiac or aortopericardial shunt and severe hemodynamic instability. According to a large autopsy series involving more than 8,000 people, 0.09 percent of people in the general population have SVAs. The incidence of open-heart surgery is 0.14-0.96 percent. Up to 0.1 percent of all congenital cardiac abnormalities are congenital SVAs. In some Asian groups, incidence has been estimated to be as high as 3-4.5 percent. With a male to female ratio of 4:1, it is overwhelmingly masculine [7].

SVAs can be hereditary, acquired, or congenital. Congenital SVAs originate from the inadequate union of the aortopulmonary septum and the distal bulbar septum, which leaves the junction of the aortic annulus, right aortic sinus media, and right section of the no coronary sinus vulnerable. They are most frequently associated with ventricular septal defects (30-50%), aortic regurgitation (20-30%), bicuspid aortic stenosis (10%), and aortic regurgitation Atherosclerosis, infectious endocarditis, TB, syphilis, dissecting aortic aneurysms, cystic medial necrosis, Behcet's disease, and mechanical injury to the aortic root can all cause acquired aneurysms. A risk factor for our patient was atherosclerosis [8].

The area of the aorta and left ventricular outflow tract that is divided by the Sino tubular junction superiorly and the basal portions of the aortic valve leaflets inferiorly is known as the aortic root. The aortic valve leaflets, commissures, interleaflet triangles, SVs, Sino tubular junction, and annulus make up the aortic root as a result. The function of the aortic valve depends heavily on the Sinuses of Valsalva. They offer a gap to stop the open aortic leaflets from obstructing the coronary artery orifices. Second, they encourage the growth of eddy currents behind the open leaflets, which in turn speeds up the aortic valve leaflets' fast closing at the end of systole [9].

The majority of unruptured SVAs are asymptomatic and found by accident during imaging examinations. In the fourth and fifth decades, the majority of patients start to exhibit symptoms. Aortic insufficiency,

tricuspid stenosis, tricuspid insufficiency, mitral insufficiency, ischemia/infarction, infective endocarditis, thromboembolism, mass effect, and conduction disturbance can all occur from large, unruptured SVAs compressing the surrounding cardiac structures. Our patient arrived with a mediastinal tumour that had displaced the pulmonary artery in addition to a chronic cough. The third or fourth decade of life is typically when congenital and hereditary types first show symptoms with a rupture. Continuous systolic murmurs and symptoms of acute decompensated heart failure are common in patients with ruptured SVA. Aneurysms in multiples are extremely rare, and multiple unruptured aneurysms, like the ones in our case, are even more unusual. In our example, a generally asymptomatic patient had an unusual combination of SVAs in all three sinuses and a 6.3 cm left aneurysm that caused the pulmonary artery to be displaced. Despite having a large aortic annulus and a left main coronary stem aneurysm, our patient was effectively handled surgically since the aneurysm was recognised and identified before it ruptured [10].

Conclusion

Although they are frequently misdiagnosed and misunderstood, headaches caused by sinusitis must be treated effectively while they are still in the early stages. Finding the precise pattern and type of headache can aid in making the right diagnosis and starting treatment. In order to make diagnosis easier, we tried to identify different types, patterns, headache sites, and frequently misdiagnosed headaches of Sinogenic and nonsinogenic origin in our study. In order to effectively manage sinus headache, we strongly advise a thorough ENT evaluation (physical and radiological) to rule out migraine and identify sinus headache as soon as possible.

Acknowledgement

None

Conflicts of Interest

None

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