

## Middle Turbinate Headache Syndrome

Patient presenting with a chronic headache unresponsive to over-the-counter medications to be a challenging problem in a daily clinical practice. Usually, the physician will carefully examine the patient for signs of dangerous conditions such as brain tumor or aneurysm and obtain a CT-scan or MRI of head. If these are inconclusive or without any significant abnormality the diagnosis of "Migraine" is made and the patient is referred to a neurologist specializing in the management of this fairly common condition. Throughout the entire history of medicine "Migraine" headaches have been a mystery for medical researchers and a true misery for suffering individuals. Many different hypothesis have been offered but one withstood the test of time. Indeed, the name "Migraine" comes from a Latin term: "Hemicrania" which simply translated means - pain in the one side of the head. In the recent years a new and very attractive theory has been developed explaining the cause and development of Migraine headaches.

Inflammatory process in the paranasal sinuses with blockage of channels connecting the sinuses with the nasal cavities has been very well established as the cause of disabling headaches and facial pains. However, it was generally accepted that in the absence of sinus infections, the nose and surrounding structures could not be the origin of headaches. German physician H. G. Wolff was the first to recognize the importance of strategic "trigger points" inside the nose that could produce severe pain despite any presence of the inflammatory process. His writings, unfortunately, did not attract very much attention until recently when other physicians reported more and more evidences about the specific places inside the nose that could, under certain circumstance, become the source of pain.

One of these structures is a middle turbinate. There are three nasal turbinates inside each of the nasal cavity: Inferior, middle and superior. The function of nasal turbinates is to regulate the flow of the air through the nose and to trap inhaled particles that may be harmful to the lower respiratory mucosa. Additionally, they humidify and warm the air so that when it reaches the lungs it would be saturated with moisture and equal to the body temperature. Normal anatomy of the nasal turbinates may be altered due to trauma causing deviation of the nasal septum to one side compressing predominantly the middle turbinate and thus creating the contact point. Also, during the facial growth the middle turbinate may become pneumatized and is then called - "Concha bullosa".

Turbinates are composed of bony skeleton, vascular tissue and enveloped by a nasal mucosa. Centrally located vascular tissue has the capacity to swell and shrink due to external and endogenous stimuli. Swelling of the turbinate tissue causes blockage of the nasal airway and is mainly caused by inflammation,

allergy or nonspecific reaction to the environmental pollution. Also, some hormonal changes such as pregnancy or premenstrual stage and ingestion of certain medication can produce prolonged or temporary congestion of turbinate tissue. Sudden weather changes particularly low barometric pressure and high air humidity are also known to influence the reactivity of the vascular apparatus of the nasal turbinates.

Regardless of the cause, swelling of the nasal turbinates particularly in the middle part of the nasal cavity may result in contact with the nasal septum in especially sensitive area creating a "trigger" for development of headache. This type of headache is called: Middle turbinate headache syndrome and is characterized by intermittent pain located in the periorbital area, in between the eyes, or in the cheeks and frontal bone. The occurrence of such pain is accompanied with the congestion and feeling of the pressure deep inside the nasal cavity. Mostly the pain is unilateral lasting in between few hours up to several days. The intensity of pain varies from an individual to the other but it is more of dull, boring character and typically unresponsive to common pain relieving medications.

The diagnosis of "Middle turbinate headache syndrome is very simple and if the diagnosis is correct the treatment is invariably successful and permanent. Physical examination by an otolaryngologist of the inside of the nose will show a contact point in the area of middle turbinate. The testing is performed next by placing a topical anesthetic solution on the contact point and if this is the trigger point producing pain, the patient should experience immediate relief of headache. Obviously, the test has to be performed when the patient actually has significant pain. Simultaneously, the entire nasal cavity is thoroughly decongested and carefully examined using an endoscope to detect other abnormalities inside the nose.

CT-scan of the nose and paranasal cavities is also performed to evaluate for chronic sinus inflammation but in the cases of isolated Middle turbinate headache syndrome, x-rays will be usually normal except for demonstration of a contact point in between the nasal septum, and middle turbinate. In cases with pneumatized middle turbinate and with significant septal deviations with or without presence of the spur the CT-scan films will be positive, but the diagnosis is still dependent on the clinical test with topical anesthesia.

When the diagnosis of middle turbinate headache syndrome is made with certainty, the treatment is fairly simple with high rate of successful outcomes. Surgical elimination of trigger point by resection of involved area is usually a very short operative procedure that can be done under local or general anesthesia. Post-operative recovery is relatively quick and the complications are extremely rare.

The results of treatment of middle turbinate headache syndrome has been outstanding as long as diagnostic evaluation has been performed. It has to be emphasized, however, that the mere presence of the contact points inside the nose at the area of the middle turbinate should not be considered as an indication for surgery as they may be asymptomatic. The diagnosis should not be made by looking at the x-ray films, but by carefully listening to the patients complaints and by achieving a full relief of the pain using topical application of anesthetic solution. Only when properly diagnosed will the treatment of middle turbinate headache syndrome be successful, resulting in long-lasting elimination of recurring pain.

Also, there are many other causes of the headache and pain in the periorbital area and therefore each patient with such complaints has to be comprehensively evaluated primarily ruling out life-threatening conditions such as brain tumors or aneurysms. Close cooperation in between the primary care physician, neurologist and an ear, nose, throat specialist is mandatory to help the majority of the headache sufferers.

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