

## Migraine and epistaxis: An interesting combination

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### Abstract

This is the report of a 28 year old woman who had a holocranial pulsating headache once a month with nausea, photophobia and phonophobia lasting about 48 hours. There was no preceding aura. The headache used to subside on every occasion with profuse epistaxis from both nostrils. Her neurological and otolaryngological examination was normal. MRI brain showed no abnormality. During one of the examinations at the time of the headache and epistaxis, she was found to have bilateral congestion of nasal mucosa with no obvious identification of bleeding points. This case illustrates that migraine can result in epistaxis in some patients.

### CASE REPORT

We report the case of a 28 year old patient with migraine. She was referred to the neurology service for a holocranial pulsating headache approximately once a month with nausea, photophobia and phonophobia lasting about 48 hours. There was no relation to menstruation. However, the headaches became worse with exertion. There was no preceding aura. The headaches used to subside with an attack of profuse epistaxis from both nostrils on every occasion. The patient did not take any triptans or nonsteroidal antiinflammatory drugs (NSAIDs). The headache subsided with paracetamol and domperidone. Her general examination and neurological examination was normal. The patient underwent a complete otolaryngological examination by an ENT surgeon to rule out an obvious cause of bleeding. During one of the examinations at the time of the headache and epistaxis, she was found to have congested mucosa bilaterally without obvious bleeding points identified. At a repeat examination 12 hours after her headache had subsided, her nasal mucosa looked normal. She underwent tests for coagulation disorders as well as an MRI brain. All investigations were found to be normal. Her grandmother also suffered similar headaches with epistaxis in her youth. However no cause of epistaxis was found in her as well.

### DISCUSSION

Our patient's headaches fulfilled standard diagnostic criteria for migraine without aura

according to the IHS headache classification.<sup>1</sup> Structural causes of epistaxis were ruled out and the possibility of coincidence was also ruled out by repeated instances of epistaxis in association with headache. The patient was not on medications that would have resulted in a bleeding diathesis. It is therefore most likely that migraine is directly responsible for the epistaxis in our patient.

Common causes of epistaxis as identified in the literature comprise raised blood pressure, coagulation abnormalities, local lesions and drug induced bleeding.<sup>2</sup> In 1967 Ikonomoff studied 24 patients of epistaxis and found that more than half of the cases had migraine.<sup>3</sup> Subsequently two studies of pediatric patients concluded that patients with migraine were predisposed to suffer from nose bleeds. Their appearance of nose bleeds in infancy can be a precursor of migraine in future.<sup>4</sup>

One case similar to ours has been described in the literature. The patient had a similar history of profuse epistaxis preceded by a holocranial headache. The authors diagnosed her as epistaxis due to migraine without aura after exhaustive investigations.<sup>5</sup> The pathophysiology of occurrence of epistaxis in migraine can be explained by the common occurrence of trigeminovascular system (TVS) activation. The vascular branches supplying the nostrils are internal maxillary arteries arising from the external carotid artery as well as ethmoidal arteries arising from the internal carotid arteries. TVS activation would provoke vasodilatation and hence predispose to subsequent bleeding from the nasal mucosa.<sup>6</sup> The presence of facial flushing and vasodilatation of the extra

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cranial arteries has been described in migraine and other trigeminal autonomic cephalalgias as well.<sup>7</sup>

When nose bleeds are closely associated with headache one should be aware of the uncommon possibility of migraine-induced epistaxis.

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