

Case Report

Carotid Cavernous Fistula Subsequent to Nasal Septoplasty; A Case Report

H. Moin MD*, P. Mohagheghzadeh MD**

ABSTRACT

Carotid cavernous fistula (CCF) is a rare and lethal condition; it can be spontaneous, traumatic or iatrogenic. This report presents a case of CCF subsequent to nasal septoplasty who was a 24 years old lady with proptosis and severe decreased visual acuity. After cerebral angiography, trapping and embolization of fistula was performed with good recovery. Like our case, review of articles shows that the patients are signs and symptoms free after embolization

Keywords: carotid cavernous fistula (CCF), iatrogenic CCF, embolization

Carotid cavernous fistula (CCF) can be divided into two groups; direct and indirect forms which are according to the injured artery, i.e. in direct form, the own internal carotid artery is lacerated in cavernous sinus and connects to it, but in indirect form, the cavernous branches of internal carotid artery or minor branches of external carotid artery or both connect with cavernous sinus¹.

The most frequent cause of CCF is traumatic sphenoid bone fracture. Iatrogenic CCF is occurred after sphenoid sinus biopsy, retrogasserian rhizotomy, carotid endarterectomy with Fogarti catheter, and the other processes¹. In rare cases, aneurysmal rupture in the cavernous sinus, can also lead to CCF. Direct CCF is more frequent in males, because of their more susceptibility to trauma¹. This article introduces a case of CCF subsequent to nasal septoplasty, a very rare complication.

Case presentation

This is a 24 years old lady from Chaharmahal province, who had undergone septoplasty, 1 month prior to this admission. She developed proptosis and limitation of eye movement immediately after septoplasty, plus no light perception. After ophthalmologic consultation, she diagnosed as orbital cellulitis, orbital hematoma, and so on and received some medical treatment. In this course, she felt tinnitus in her right ear. Later, neurosurgical

consultation was done. it revealed that the patient had right frozen eye, proptosis, dilated pupil without any response to light, no light perception, and obvious bruit on her right eye auscultation which was decreased significantly with pressure on her right cervical carotid artery. For a while, she had severe epistaxis which was hardly controlled with nasal tampon and caused to blood transfusion.

With impression of CCF, bilateral direct carotid angiography was done which was accompanied with cross compression (Figure 1).

Then she underwent Jagger and Hamby procedure in order to embolize and trap the carotid fistulae. Post operation follow up revealed good recovery for all of her signs and symptoms.

Discussion

CCF is a rare, yet potentially lethal condition¹. It can be traumatic, spontaneous, or iatrogenic according to its cause. It may be considered as one of the contributing factors of blindness. Significant reduction of neurological and ophthalmological symptoms and signs may suggest that arteriovenous shunt is closed².

In our case, nasal septoplasty, as a rare and interesting cause, led to this pathology. Like the other studies, the result of embolization of fistula was significant. Coley S.C and coworkers presented four patients with large high-flow shunts who had been

* Associate Professor, Department of Neurosurgery, Isfahan University of Medical Sciences, Isfahan, Iran.

** Resident, Department of Neurosurgery, Isfahan University of Medical Sciences, Isfahan, Iran.

Correspondence to: Dr. Pouya Mohagheghzadeh, Department of Neurosurgery, Alzahra Hospital, Isfahan University of Medical Sciences, Isfahan, Iran.



Figure 1. Angiography of carotid-cavernous fistula with cross compression.

successfully treated by trapping of the fistulae by using a combination of proximal balloon occlusion and distal coil embolization³. De-Keizer-R reported 101 cases of CCF with 42 cases of direct type. They were divided into two groups that conservative management was performed for 12 cases and embolization was done in 30 cases. Success rate of conservative management was 58%, in comparison with 94.5% in surgically treated group⁴.

Albuquerque F-C and coworkers reported a case

with direct CCF with reversion of blindness after transvenous embolization⁵.

Reversion of signs and symptoms in our case revealed that it is advisable to consider CCF as a diagnosis in all maxillofacial complications which are presented as orbital proptosis and also, surgical management is more advisable than conservative treatment.

References

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