Refractory epistaxis



Diagnosis

It is important to evaluate for intracranial pathological conditions in patients who present with refractory epistaxis ¹⁾.

In patients presenting with a history of craniocerebral trauma, traumatic pseudoaneurysm must be considered as a differential diagnosis $^{2)}$.

When severe delayed epistaxis follows transsphenoidal surgery and damage to the internal carotid artery has been ruled out, endovascular embolisation of the external carotid artery should be considered in patients refractory to conservative treatment ^{3) 4)}.

Treatment

The majority of epistaxis are anterior in nature, resolve with simple first aid measures and require no further follow-up. However, some cases pose more of a diagnostic challenge and prove resistant to standard investigation and treatment.

see Refractory epistaxis treatment.

Case series

Cohen et al., reported the experience with endovascular procedures in 19 patients from 2002 to 2011 for the treatment of refractory idiopatic posterior epistaxis. The sphenopalatine artery and distal internal maxillary artery were embolized in all patients. Unilateral embolization was performed in 12 patients (63%), bilateral embolization in seven (37%). Additional embolization of the descending palatine artery was performed in eight patients (42%) and embolization of the facial artery and palatine arteries in four (21%). In one patient the distal ophthalmic artery was embolized with n-butyl cyanoacrylate. No minor or major complications occurred in relation to the embolization procedures. The average hospital stay was 11.1 ± 8.6 days, including an average 5.2 ± 3.4 days after embolization. Average follow-up after discharge was 21.3 ± 25.7 months. Superselective endovascular embolization proved safe and effective in controlling idiopathic epistaxis, refractory to other maneuvers⁵⁾.

14 consecutive patients with traumatic pseudoaneurysm presenting as refractory epistaxes, 15 endovascular procedures were performed. Digital subtraction angiography revealed that the pseudoaneurysms originated from the internal maxillary artery in eight patients; and all were treated with occlusion of the feeding artery. In six cases, they originated from the internal carotid artery (ICA); out of which, two were managed with detachable balloons, two with covered stents, one by means of cavity embolization, and the remaining one with parent artery occlusion. All of these cases were followed up clinically from six to 18 months, with a mean follow up time of ten months; moreover, three cases were also followed with angiography.

Complete cessation of bleeding was achieved in all the 15 instances (100%) immediately after the endovascular therapies. Of the six patients who suffered from ICA pseudoaneurysms, one presented with a permanent stroke and one had an episode of rebleeding requiring intervention.

In patients presenting with a history of craniocerebral trauma, traumatic pseudoaneurysm must be considered as a differential diagnosis. Individual endovascular treatment is a relatively safe, plausible, and reliable means of managing traumatic pseudoaneurysms ⁶.

Eight patients were treated with bilateral tri-arterial embolization. The median age was 65 years (range, 35-90 years). Risk factors included hypertension (n=4), smoking (n=2), alcohol (n=2), and use of anticoagulation (n=2). All but 2 of the patients were treated under local anesthesia. All patients had complete obliteration of bleeding during the procedure, with no residual vascular blush. No major peri- or post-procedural complications were noted. Patients stayed in the hospital for 2-4 days (average 2.6 days). One patient developed ipsilateral temporofacial pain which resolved during hospitalization. Another patient had minor recurrent epistaxis on post operative day 2 which resolved with temporary repacking and the patient was discharged the next day.

In this experience with 8 cases, bilateral internal maxillary artery and/or ipsilateral facial artery embolization was achieved without complication and was associated with complete obliteration of vascular blush and no significant recurrent epistaxis⁷⁾.

Nine males between the ages of 19 and 62 years who had intractable oronasal bleeding resulting from severe craniofacial injuries received treatments of transarterial embolization using Gelfoam pledgets, polyvinyl alcohol particles, or platinum coils. We then reviewed their clinical and neuroradiologic characteristics retrospectively.

In all but one case, angiography demonstrated bleeding points as extravasation. These bleeding points were multiple in seven cases. Except for bleeding from ethmoidal arteries, selective embolization was successful. In all cases, intractable oronasal bleeding was controlled. Patient survival was not directly related to oronasal bleeding, but rather was strongly correlated with associated brain injuries.

Endovascular treatment is an acceptable treatment for intractable oronasal bleeding associated with severe craniofacial injuries when conventional treatments have failed ⁸⁾.

Case reports

Wright et al., presented a case of recurrent epistaxis, refractory to multiple treatment modalities and with CT imaging suggestive of a vascular aetiology which was ultimately disproved. The case highlights the shortcomings of CT imaging and importance of thorough examination technique. Nasal hemangiomas are a rare but recognised cause of epistaxis and should be considered in refractory cases ⁹⁾.

A unusual case of a patient with no significant risk factors who had recurrent epistaxis due to a ruptured true cavernous ICA aneurysm. The patient was treated initially with coil embolization followed by placement of a Pipeline Embolization Device (PED). The patient had complete resolution of her bleeding events. A follow-up arteriogram performed 14 months later confirmed aneurysm obliteration, with parent artery preservation and no evidence of in-stent stenosis.

The case highlights the importance of evaluating for intracranial pathological conditions in patients who present with refractory epistaxis. In selected patients, the use of flow-diversion technology as an adjunct or alternative to primary coil embolization for treatment should be considered ¹⁰.

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