

Facial Nerve Palsy Unusual Complication of Percutaneous Angiography and Embolization for Juvenile Angiofibroma

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Mubasher Ikram, Kamaluddin Khan (Departments of ENT and Head and Neck Surgery, Aga Khan University Hospital, Karachi.)

Moazzam Murad, Tanveer UI Haq (Departments of Radiology, Aga Khan University Hospital, Karachi.)

Introduction

Juvenile angiofibroma is a locally invasive, vascular and non-encapsulated neoplasm occurring almost exclusively in adolescent males. Although histologically benign, these tumors are highly aggressive and are associated with significant morbidity and occasional mortality. It has marked tendency to recur if not completely removed¹.

As the tumor is highly vascular, surgery is frequently accompanied by significant intraoperative hemorrhage, which may contribute to incomplete removal and additional morbidity and mortality². Roberson (1972) was first to advocate pre-operative angiography and embolization of major feeding vessels as an adjunct therapeutic method in addition to surgery, to facilitate complete excision of the tumor and to minimize the risk of complications due to profuse haemorrhage during surgery. Since then embolization has been recommended by a number of authors^{3,4}.

Complications of angiography and embolization, such as accidental embolization of the brain and ophthalmic artery, facial nerve palsy and necrosis of the skin and soft tissue may occur³.

We present our experience, of a patient with Juvenile angiofibroma, who had pre-operatively percutaneous angiography and embolization of internal maxillary artery followed by facial nerve palsy of the same side.

Case Report

An eleven-year-old boy was admitted through ER, with epistaxis from left side. After nasal packing, his routine investigations were done. Patient was markedly anaemic so blood transfusions were given. Because of repeated history of profuse nasal bleeding, unilateral nasal obstruction and a mass in the nose on clinical examination together with his age and sex, a tentative diagnosis of angiofibroma was made. After the condition of the patient was stabilized, CT scan was done, which showed a soft tissue mass in nasopharynx and left nasal cavity. Percutaneous angiography was performed which confirmed the diagnosis, followed by embolization of internal maxillary artery on left side with gelfoam pledget. After the embolization, patient developed a left sided facial nerve palsy, which was of lower motor neuron type, confirmed on electromyography and nerve conduction studies.

Comments

Juvenile nasopharyngeal angiofibroma is a benign, highly vascular neoplasm, arising almost exclusively in adolescent males from a broad base on the posterolateral wall of the nasopharynx and posterolateral wall of nose. Surgery is the treatment of choice in these tumors⁵.

The surgery is accompanied by significant intraoperative haemorrhage, which may contribute to morbidity and mortality. To decrease the vascularity, pre-operative percutaneous angiography and embolization of major supply vessels is done routinely. This decreases the tumor bulk and blood supply

to facilitate a less complicated operative procedure.⁶

The angiography and embolization is a fairly safe procedure in experienced hands. But severe complications like cerebrovascular accidents, cranial nerve palsies, ophthalmic artery embolization and necrosis of skin of face have been reported⁷. The complication rate in experienced hands is 1-3%^{7,8}. The complications are caused by over embolization by use of particles that are too small and by reflux into internal carotid artery. The risk of severe effects can be minimized by means of careful angiographic technique, appropriate selection of the embolization agent. The radiologist performing the procedure should be familiar with the anatomy of head and neck. Facial nerve palsy has been reported after angiography and embolization of internal maxillary artery^{9,10}.

We experienced a facial nerve paralysis after embolization of internal maxillary artery with gelfoam. The procedure was done pre-operatively to control the preoperative bleeding during removal of angiofibroma.

In summary, although the pre-operative embolization is useful for reducing preoperative blood loss and the risks of tumor recurrence, but still there is a chance of severe complication even in the hands of experienced radiologist.

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