CASE REPORT

Surgical Management of a Massive Facial Hemangioma

A Baharudin, MMed*, A R Samsudin, FDS*, A S Halim, FCCP, M A Shafie, MMed*****

*Department of Otorhinolaryngology-Head and Neck Surgery, **Reconstructive Science Unit, ***Department of Radiology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan

SUMMARY

Hemangiomas are the most common congenital lesions in man and occur predominantly in the head and neck region. Massive hemangioma especially near vital organs or structures pose a challenge to surgeons. With the availability of expertise in embolization of feeding vessel of the hemangioma and reconstructive techniques we were able to manage successfully a complicated case of massive facial hemangioma.

KEY WORDS:
Surgery, Facial hemangioma, Massive, Embolization, Reconstruction

INTRODUCTION

Presently, the preferred treatment of small uncomplicated hemangiomas is conservative. The exceptions are those that involve the eye, ear canal, airway or alimentary tract and those associated with coagulopathy, marked osseous deformity, congestive heart failure or hemorrhage due to ulceration [1].

A small number of hemangiomas become life threatening usually due to rapid growth, proximity to vital structures, hemorrhage, congestive heart failure or platelet-trapping characteristics (Kasabach-Merrit syndrome) [2]. Kasabach-Merrit syndrome is bleeding due to platelet deficit when most of the platelets are trapped in the hemangioma. When one or more of these latter complications occur, the untreated mortality rate is unacceptably high and aggressive therapy is warranted [2]. A variety of techniques have been proposed for the management of large hemangiomas and considerable controversy exists regarding the optimal means of treatment of these lesions. With the combined modality of an embolization technique of blood vessel and free flap expertise available in our centre we were able to manage surgically a life threatening massive facial hemangioma.

CASE REPORT

A 15 years Malay boy from Kuala Krai, Kelantan presented with bleeding from a left facial swelling for two years. A dark blue pigmentation on his left forehead and left cheek was noted since birth. At four months, the pigmentation developed into a cherry red lesion over the left forehead and progressively increased in size. He had multiple admissions and blood transfusions for recurrent bleeding from the swelling either due to trauma or spontaneously. He also experienced episodes of syncope in school due to loss of blood. Occasionally, the facial swelling was infected and had to be treated with dressing and oral antibiotics. There was no history of similar problem in other family members.

On examination, there was a huge swelling on the left face from the left frontal to the left maxillary region covering the left eye and measuring eight by ten cm (Figure 1). The swelling was reddish in color, soft and fluctuant. Intraoral examination and bilateral nasal endoscopy looked normal. Examination of the left eye showed no perception to light. There was no evidence of a mass in the neck. No cranial nerves deficit was detected. The systemic examination was unremarkable.

CT Scan of paranasal sinus (PNS) and orbit (Figure 2) demonstrated a large soft tissue mass occupying left mid and upper face, nose, left periorbital and left forehead. There was no extension into the globe or retroorbital regions and no evidence of left maxillary sinus, left temporal fossa or intracranial extension.

Angiography showed that the vascular facial lesion was predominantly supplied by the left ophthalmic artery measuring 3mm and there was an early draining into the left superior ophthalmic vein. The left internal maxillary and the left superficial temporal arteries also gave off branches to supply the lesion. On the right side, the right ophthalmic artery measured 1.6mm while branches from the right internal maxillary and superficial temporal arteries also supplied the lesion. However, there was no draining into the right superior ophthalmic vein.

Due to the complex arterial anatomy, three embolizations were performed. Ninety nine percent polyvinyl alcohol (PVA) size 500-700 micron and cyanoacrylate were used as embolization materials to cut off blood supply from the left internal maxillary, ophthalmic and superficial temporal arteries. Forty eight hours after the third embolization, the whole left facial hemangioma was resected from the underlying structures en-bloc.

The delay of forty eight hours from embolization to resection was deliberate, in order to identify and address any complications arising from the embolization. The estimated bleeding was minimal. A free latissimus dorsi flap was used for the reconstruction of the facial defect. End to end microanastomosis from the subscapular artery to the superior thyroid artery and the thoracodorsal vein to the anterior

This article was accepted: 10 March 2007
Corresponding Author: Baharudin Abdullah, Department of Otorhinolaryngology-Head and Neck Surgery, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan

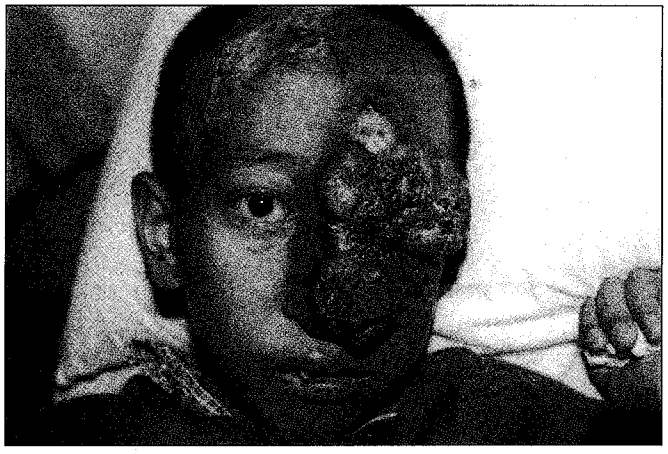

Fig. 1: A massive left facial hemangioma.
(Note: Consent obtained from patient for this publication.)

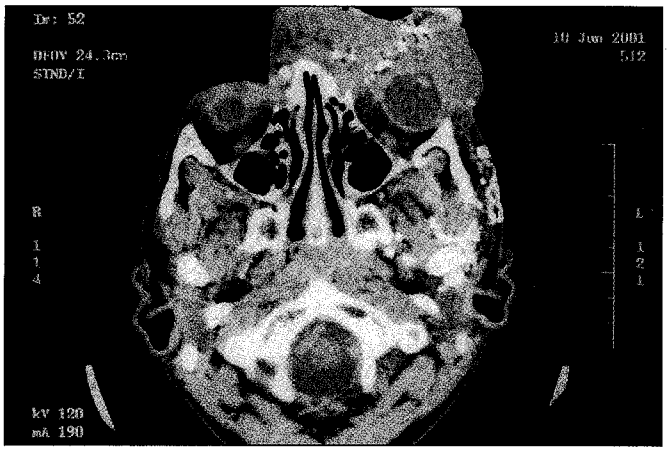

Fig. 2: CT Scan paranasal sinus (PNS) and orbit.

jugular vein was secured with prolene 10/0. The wound was subsequently closed. Postoperatively he was managed in the intensive care unit (ICU) and later transferred to the general ward where he recovered uneventfully. The histopathological examination showed numerous blood vessels involving the whole skin, subcutaneous fat and muscle. The vessels were mainly of moderate size, thin and anastomosing (some of the vessels involving the external orbital muscles and the subconjunctival tissue). A diagnosis of a cavernous hemangioma was confirmed.

DISCUSSION

Historically, medical therapy with prednisolone has been the mainstay of therapy for large hemangiomas[3]. They remain the first choice because other treatments (embolization, operative excision and radiotherapy) give even more uncertain results and may be more perilous. However, up to 70% of the large hemangiomas will not respond to systemic steroids[3].

Radiotherapy should be dismissed unless other forms of treatment are ineffective or contraindicated; irradiated lesions regress but the treatment is not free of long term carcinogenic risk[2]. Others like cryotherapy, radioactive gold implantation and injection of sclerosants have been attempted but not widely performed today[3]. The great variety of procedures indicates that there is no gold standard treatment of choice but that each case has its own merits.

Resection has been advocated both as primary therapy and as salvage treatment after failure of more conservative measures[2]. The indications for resection suggested are obstruction of visual axis, large lesion with thrombocytopenia, obstruction of luminal structures and uncontrollable ulceration, hemorrhage or infection. Other indications include atypical growth suggesting alternative diagnosis, cardiopulmonary decompensation from arteriovenous shunting and small lesions that can be excised without cosmetic or functional risk.

Demiri *et al*[4] reported excellent outcome in 35 cases of facial hemangioma managed by surgical resection. They further concluded that facial haemangiomas causing functional disturbance or serious psychological distress deserve surgical excision before the age of expected spontaneous regression. We concur with this view as surgery can provide active treatment with excellent result and minimal morbidity as in our case.

REFERENCES

1. Burrows PE, Lasjaunias PL, Ter Brugge KG, Flodmark O. Urgent and emergent embolization of lesions of the head and neck in children: indications and results. Pediatrics 1987; 80(3): 386-94.
2. Weber TR, Connors RH, Tracy TF, Bailey PV. Complex hemangiomas of infants and children. Arch Surg 1990; 125: 1017-1021.
3. Stal S, Hamilton S, Spira M. Hemangiomas, lymphangiomas and vascular malformations of the head and neck. Otolaryngologic Clinic of North America 1986; 19(4): 769-96.
4. Demiri EC, Pelissier P, Genin-Etcheberry T, Tsakoniatis N, Martin D, Baudet J. Treatment of facial hemangioma: the present status of surgery. Br J Plast Surg. 2001; 54(8): 665-74.