PERCUTANEOUS ENDOVASCULAR EMBOLIZATION OF A LINGUAL HEMANGIOMA

M.Olcay ÇİZMELİ*, MD., Erhan T. ILGIT*, M.D.,
Turgay SÜZEN, M.D**., Nebil GÖKSU**, M.D.

Gazi University, Faculty of Medicine, Departments of Radiology* and Otorhinolaryngology **
Ankara, Turkey
Gazi Medical Journal 2 : 99 - 101, 1991

***SUMMARY** : Symptomatic lingual hemangiomas are amenable to embolotherapy with various agents. A patient complaining of recurrent bleeding and discomfort in swallowing and speaking was treated by superselective embolization via the left lingual artery with surgical silk knotted gelatine sponge particles.*

***Key Words** : Embolization, Lingual Hemangioma*

Hemangiomas are benign lesions of blood vessels or vascular elements, more than 50 percent occuring in the head and neck region. The oral and oropharyngeal hemangiomas compromise a significant portion of the head and neck angiodysplastic lesions and the majority seem to be of a developmental origin. They have a strong preference for occurence in the tongue which typically present with complaints of recurrent bleeding, difficulty in swallowing, breathing, speaking and chewing. Larger ones are also a source of embarrassment to the patient due to the localization in the dorsum of the tongue with bluish to purple or vivid red color which may present ever without complaint (Dixon et al. 1986; Van Der Waal and Snow, 1986).

Hemangiomas are not true neoplasms, despite their potential to grow, therefore a treatment centered on control of symptoms rather than aggressive excisional procedures seems appropriate.

It is reported herein a study which was designed to evaluate the efficacy of superselective embolization for the sympthomatic treatment of a lingual hemangioma.

CASE REPORT

A 33 year - old man presented with a swelling and bluish discoloration of the posterior half of his tongue which was first noticed at the age of 7 years, complaining of recurrent bleeding and discomfort in swallowing and speaking.

Selective external carotid and superselective facial and lingual arteriographies were performed bilaterally which demonstrated a vascular lesion located at the base of the tongue predominantly supplied by the left lingual artery (Figs. 1,2). After confirming the diagnosis, left lingual artery was selectively embolized using absorbable gelatine sponge (Gelfoam) which was sized into milimeter particles and knotted by surgical silk just before embolization. Initially distal embolization and subsequently proximal occlusion of the left lingual artery was performed under fluoroscopic guidance (Fig. 3).

Especially for the embolization of smaller distal branches and vascular spaces within the tumor itself Gelfoam particles less than 1 mm were used. Left lingual artery was proximally occluded by the

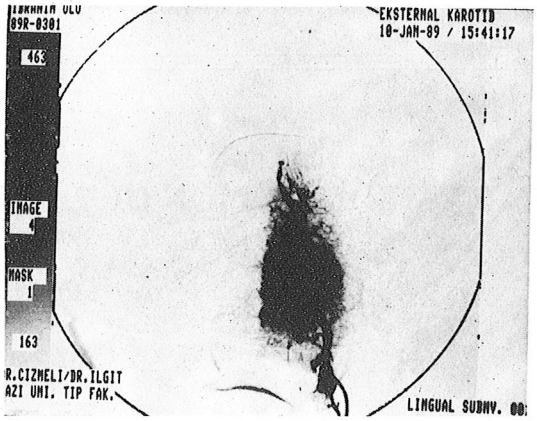

Fig . 1 a

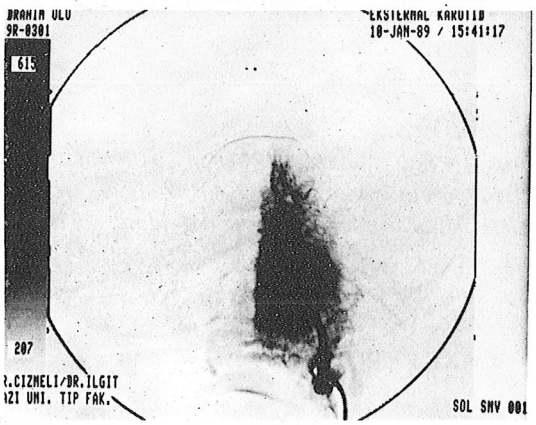

Fig . 1 b

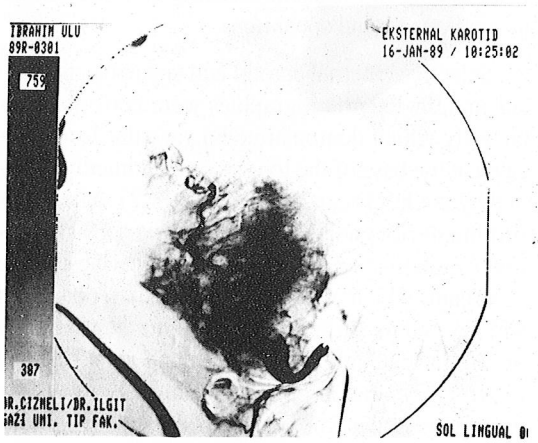

Fig . 1 c

Fig. 1 a, b, c : Pre - embolization angiography of the left lingual artery a and b in submentovertical projection and c in lateral projection shows characteristic hemangiomatous blush located at the base of the tongue.

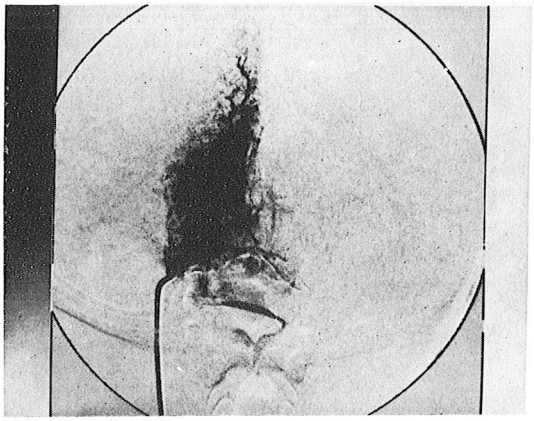

Fig. 2 : Superselective right lingual angiography in submentovertical projection demonstrates no feeding from this artery but the mass effect of the hemangioma.

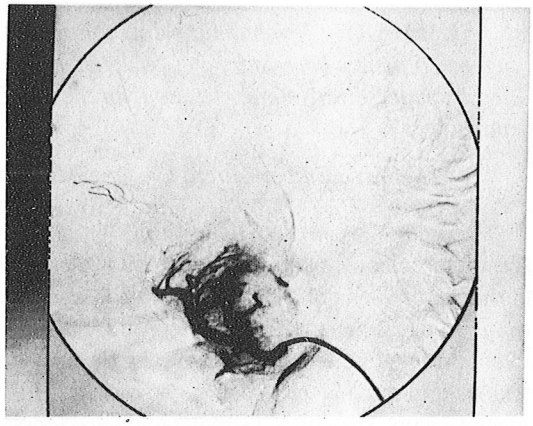

Fig. 3 : Per - embolization angiography of the left lingual artery shows inital distal occlusion of the deep lingual artery.

absorbable gelatine sponge particules of 1x1x2 mm size knotted like a package by 7/0 surgical silk. Eight knotted particules in 1.5 cc saline were delivered for proximal occlusion. Initial angiographic studies demonstrated occlusion of the distal branches, later on proximal occlusion of the main lingual artery was attained.

The hemangioma deflated approximately 80 percent in the following week and discomfort in swallowing dissappeared. Evaluation after six months revealed no re - expansion of lesion and he did not complain of the occasional bleeding or discomfort in swallowing although control right lin-

gual angiography demonstrated newly developed anastomoses from the mucosal and submucosal branches of the contralateral deep and dorsal lingual arteries. Another potential collateralization due to anastomoses from the contralateral mandibuler branch of the sublingual artery via the frenulum of the tongue, also developed. Selective left external carotid angiograms showed that lingual artery was still occluded proximally (Fig. 4,5). Selective bilateral facial angiography showed no difference compared with the prior angiography, indicating that potential collateral supply between the mental branch of the sublingual artery and submental branch of the ipsilateral facial artery (linguofacial pattern) did not develope.

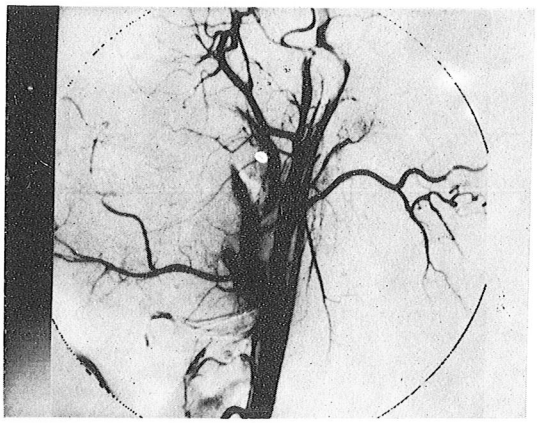

Fig. 4 : Lingual artey is not visible in the left external carotid angiography six months after embolization.

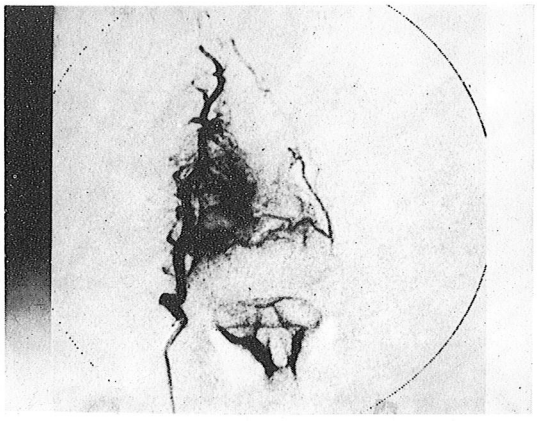

Fig. 5 : Six months after embolization, right lingual angiography shows faint visualisation of the left lingual artery via neo - developed anastomoses from the mucosal and submucosal branches of the deep and dorsal lingual arteries and the mandibular branch of the sublingual artery via the frenulum, however there is no hemangiomatous blush.

DISCUSSION

There are numerous treatment modalities employed for this problem, including irradiation, cryotheraphy, electrocoagulation, intraarterial chemotheraphy, sclerosing agents, corticosteroids, ligation of the lingual artery, surgical excision, embolization and / or combination of these procedures. The more conservative therapies often end with incomplete relief of symptoms and the more aggressive ones result in an unacceptable functional disability. Whichever treatment modality is chosen, angiography (selective external carotid and lingual) is recommended to show the flow dynamics, arterial supplies, drainage veins and the extent of the lesion (Dixon et al. 1986; Gerlock and Mirfakhraee, 1985; Perski et al. 1984; Schwartz et al. 1986).

Since Doppman et al. (1968) successfully pioneered embolization via a percutaneously placed catheter, several selective and superselective approaches using many different embolizing agents allowed the palliative or curative embolization of these vascular lesions with less morbidity and preservation of important structures. Gelatine sponge particules used in this case are one of the commonest embzing materials being inexpensive, easily available and not directly toxic. They produce a mild inflammatory reaction and induce mild - to-moderate tissue reactivity, so act as a matrix for formation of trombus and vessel occlusion. Gelfoam is occlusive in days to weeks and known to be totally absorbed after 3 to 6 months. In order to increase the inflammatory reaction, enhance the thrombotic effect and the longevity; each particule used in proximal occlusion was knotted like a package by 7/0 surgical silk.

As is evidenced by this case, superselective embolization of a lingual hemongioma by surgical silk knotted gelatine sponge particles is satisfactory in symptomatic treatment. This procedure being less expensive and repeatable, can be used alone or in combination with other treatment modalities.

Correspondance to : Dr.M.Olcay ÇİZMELİ
Gazi Üniversitesi Tıp Fakültesi
Radyoloji Anabilim Dalı
Beşevler
06510 ANKARA - TURKEY
Phone : 4 - 212 65 65 / 272

REFERENCES

1. Dixon JA, Davis RK, Gilbertson JJ : Laser photocoagulation of vascular malformations of the tongue. Laryngoscope 96 : 537-541, 1986
2. Doppman JL, Dighird G, Ommaya A : Obliteration of spinal cord arteriovenous malformations by percutaneous embolization. Lancet 1 : 477-479, 1968
3. Gerlock AJ, Mirfakhraee M : Essentials of diagnostic and interventional angiographic techniques. (W.B.Saunders, Philadelphia). 1985, pp. 131-173
4. Persky MS, Berenstein A, Cohen NL : Combined treatment of head and neck vascular masses with preoperative embolization. Laryngoscope 94 : 20-27, 1984
5. Schwartz DN, Kellman RM, Cacayorin ED : Treatment of a lingual hemangioma by superselective embolization. Arch Otolaryngol Head Neck Surg 112 : 96-98, 1986
6. Van Der Wall I, Snow GB : Benign neoplasms of the oral cavity and oropharynx, In : Otolaryngology Head and Neck Surgery, Vol II, Ed. Cummings CW. 1986, pp. 1255-1267