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MANAGEMENT OF HEMANGIOMA OF BUCCAL MUCOSA USING SCLEROSING AGENT: A CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Hemangiomas are benign soft tissue tumors the etiology of which is still unknown. The various treatment options are surgical excision, sclerosing agents, propranolol, laser therapy, cryosurgery and corticosteroids. In the present case, hemangiomas of buccal mucosa was treated using sclerosing agent. The lesion was superficial and small. Since surgical excision is an invasive procedure leading to more complications, sclerosing agent is used in the present case for its management. Patient was followed up for 6 months. No recurrences were observed. The present case report highlights the importance of using sclerosing agent for management of hemangioma. It is a non - invasive procedure and chances of recurrences are low.

KEYWORDS: hemangioma, sclerosing agent, vascular malformations.

INTRODUCTION

Hemangiomas are termed strawberry marks.[1] They are the most common benign tumors of infancy. Congenital hemangiomas are present at birth. Infantile hemangiomas are characterized by appearances during later stages of infancy at around 8 weeks.[2] Hemangiomas comprise 7% of all the benign soft tissue tumors. More than 50% of these lesions are found in the head and neck region. These soft tissue tumors show higher prevalence in females compared to males (3:1).[3,4]

The exact etiology of hemangioma is not understood. According to the most accepted hypothesis, hypoxic stress upregulates GLUT1 and VEGF, which mobilize endothelial progenitor cells (EPCs). These progenitor cells play an

important role in hemangiogenesis.[5] The natural course of hemangioma shows a triphasic pattern- early proliferation, plateau phase, and involution phase. The prognosis of hemangiomas is good with minimal complications. They do not metastasize. According to studies, fifty percent of hemangiomas involute by 5 years, seventy percent by 7 years, and ninety percent by 9 years of age.[6] The complications associated with it might include pain, ulceration, scarring, and facial disfigurement in cases of large hemangiomas, such as zygomatic hemangiomas. Oral hemangiomas are mostly asymptomatic. They are reddish blue or deep blue in hue and soft on touching. They are well circumscribed, sessile, or pedunculated masses.[7] The size of the hemangiomas is variable, ranging from a few millimeters to a few centimeters. They might contribute to facial asymmetries, as in case of intraosseous zygomatic hemangiomas.[8]

Various treatment options include cryosurgery, beta blocker (oral propranolol, which is shown the first line therapy), sclerosing agents, surgical excision, intralesional and topical corticosteroids, and pulsed dye lasers.[6,9]

Histopathology, doppler, magnetic resonance imaging, and ultrasoography are used for the diagnosis of hemangioma.[6,7,10] A palpation or diascopy test leads to disappearances of the blood, which is used to make differential diagnosis from other benign tumors of the oral cavity.[11]

Surgical excision, though considered the gold standard is not always considered the treatment option. Factors deciding the treatment plan are size, location, and depth of the lesion, involvement of vital structures, and prognosis.[2]

The major objective of this study is to evaluate the effectiveness of the sclerosing agent in the treatment of superficial hemangiomas.

CASE PRESENTATION

Patient information

A 45-year old male reported with a chief complaint of discolouration and mild swelling in cheeks on the right back tooth region since two year. The lesion was initially small in size, and it gradually increased in size (Figure1a&b). There was no burning sensation or ulceration associated with the lesion.

Clinical Findings

On examination, a reddish-purple papule was observed on the right buccal mucosa. The size was approximately 1x1cm^2 and it was mildly raised from the surrounding mucosa. The margins were well circumscribed. No active bleeding was present. On palpation, the texture was soft and rubbery, and blanching was present on application of pressure. Since the lesion was very small doppler ultrasound was not done. Biopsy was not done to avoid any risk of haemorrhage. The borders of the lesion were non indurated. The surrounding mucosa was normal. The lesion was not fixed to the underlying tissue. Provisional diagnosis was made as hemangioma. A differential diagnosis of traumatic ulcer was made.

Ethical considerations

The treatment plan was explained to the patient. Medical history of the patient and allergy to any drug were recorded. Written consent was taken from the patient.

Clinical procedure

Since the lesion was superficial and small in size, the use of sclerosing agent was considered as the treatment option. 2% setrol was injected in the centre of the hemangioma (Figure 2). The quantity was approximately 0.5-1 ml. The patient experienced mild discomfort, irritation, and pain at the site of injection (Figure 3). Mild bleeding was also noticed. The patient was prescribed analgesics for managing post operative pain. Spitting and consumption of hot food and beverages were prohibited for first 24 hours. After 24 hours, the patient was recalled. No adverse reactions were noticed. Sloughing of the superficial mucosa was observed. Topical application of chlorhexidine and lidocaine was advised for 5 days. The patient was advised warm saline rinses after 24 hours of procedure.

Follow up and assessment

After 2 week, the lesion had completely disappeared. Six-months follow up was done, and no signs of recurrences were observed (Figure 4 a&b).

Figure 1: a) Lesion on right buccal mucosa, b) Lesion in relation to posterior teeth.

Figure 2: Injecting Setrol at the site of lesion.

Figure 3: Immediately after injecting Setrol.

Figure 4: a) One week follow up, b) Six months follow up.

DISCUSSION

Hemangiomas are disorganized endothelial-lined blood vessels filled with blood. They are connected to the main blood vascular system. They can occur anywhere in the body and are either congenital or traumatic. The terms hemangiomas and vascular malformations are confusing and have remained in debate for a long time.[12] In 1982, Mulikan and Glowaki established criteria for differentiating the two vascular anomalies on the basis of histochemical, cellular, and clinical distinction as infantile hemangioma and vascular malformations. The variants of hemangiomas are capillary, cavernous, or mixed types.[13] Capillary hemangiomas can have varying physical appearances from sessile to pedunculated, smooth or irregular margins, and painless in nature. The color is usually deep red to purple and blanches on application of pressure. When there is abnormal morphogenesis in blood or lymphatic vessels, it is termed vascular malformations.[12]

According to the International Society for Study of Vascular Anomalies (ISSVA), the vascular lesions are divided into two variants: tumor lesions and vascular malformations. Tumor lesions comprise hemangioma (infantile, congenital, tufted, epitheloid, or spindle cell) and vascular malformations are of various types- capillary, cavernous, lymphatic, venous, arterio-venous, or combined.[14] Hemangiomas progress in three phases: a) growth phase, b) plateau phase, and c) spontaneous regression (involution phase).[3]

Oral hemangiomas occur on the lips, tongue and buccal mucosa. They mainly appear as macules or nodules and are of variable sizes. The margins are properly delineated, and they are relatively depressable.[1] The differential diagnosis of hemangioma in the oral cavity include pyogenic granuloma (most common), telangiectasias, epulis granulomatosa, traumatic bite, etc.

CT, MRI, doppler imaging, angiographic study, and histopathological diagnosis are used to diagnose hemangiomas. Doppler imaging aids in finding out arterial or venous malformations. MRI angiography or CT angiography are used to find feeding arteries, draining veins, and involved osseous structures.

The various treatment options for hemangiomas are surgical excision, laser therapy, cryotherapy, sclerosing agents, thermocauterization, laser photocoagulation, intralesional and systemic corticosteroids, etc.[10,18] Management of hemangioma can be done by various methods depending on the age of the patient, size and extent of the lesion, characteristics that the lesion presents, and involvement of vital structures. The main aim should be minimal functional and esthetic impairment and better patient compliance. However, there is no fixed criteria for management of hemangiomas.

Surgical management of hemangiomas has both advantages and disadvantages and depends on the surgeon's expertise and experience to go for it. The advantages are microscopic diagnosis and fewer chances of recurrences. The disadvantages include uncontrolled bleeding with impairment of vital functions, difficulty in swallowing, airway obstructions, and surgical morbidity. In recent times staged surgeries are done to avoid excessive bleeding and recurrences of the lesion.

Amongst the most recent advances, propranolol is the first drug of choice in the treatment of patients with large or asymptomatic hemangiomas. The dose given to the patient is 1-3 mg/kg/day. Side effects of propranolol are diarrhea, sleep disturbance, bronchial hyperreactivity and hypoglycemia.[15] In cases of smaller lesions, topical timolol is a better treatment option. It shows halting at the proliferative stage.[16] In the present case propranolol has not been used considering the size and location of the lesion. The lesion was small, and was not associated with any comorbidity like disfigurement, esthetic zone involvement, ulcerations and airway obstructions.

In the present study, Sodium Tetradecyl Sulfate (Setrol), which is a sclerosing agent, has been used for the treatment of hemangioma. The advantages of sclerotherapy are less damage to surrounding tissue, no requirement of any special equipment, no need for hospitalization, and cost effectiveness.[10,19] In high-esthetic zone where esthetics might get compromised and surgery can lead to scar formation, sclerotherapy is the treatment of choice. Various sclerosing agents used are 3% sodium tetradecyl sulfate, percutaneous injection of pingyangmycin, ethanolamine oleate, sodium morrhuate, sodium psyllate, EO, intralesional Bleomycin A5 HCl, propranolol and polidicanol.[20] In the present case sodium tetradecyl sulfate has been used as compared to others as it is an approved drug by Food and Drug association. It is simple to use, readily available and associated with minimal allergic reactions and no incidences of hemolysis. However, it is contraindicated in patients with uncontrolled diabetes or any super-imposed local infection. Sclerosing agents act by causing localized inflammatory reactions followed by obliterative thrombosis, leading to fibrosis of the endothelial space and finally leading to regression of the lesion. Sclerosing agent not more than 2ml in the centre of the lesion should be used. Tissue reactions observed during injecting sclerosing agents are pain, irritation, sloughing, local inflammatory reactions, palatal perforations, etc.[21,22] Laser therapy is one of the treatment alternatives for hemangioma. Laser therapy is used in cases of telangiectasis or reduced lesion present after involution of hemanagioma.

Corticosteroids can be given in patients in whom propranolol is contraindicated. Side effects include adrenal axis suppression, cushing facies, irritability, and stomach irritation.[22]

The super pulsed laser beam leads to a coagulative effect leading to painless vapourization of the tissue. Pulsed dye laser (PDL), Nd:YAG, and CO2 are the various lasers that have been used.[23,24] However, it cannot be said which laser system provides optimal treatment for hemangioma. Side effects include blistering, ulceration, and long term pigmentation changes.[23]

The treatment of hemangiomas depends on various factors like size, location, number, duration for which it is present, and hemodynamics of the lesion. Hence, no method of treatment should be considered superior to the other.

CONCLUSION

2% sodium tetradecyl sulfate is a sclerosing agent used for superficial hemangioma. The major advantages are patient comfort, cost effectiveness, no hospitalization, and fewer chances for bleeding and ulcerations. The frequency of complications and recurrences is very low.

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