

Unusual case of postextraction bleeding

Department of Oral and Maxillofacial Surgery, SCB Dental College, Cuttack, Odisha, India

Indu Bhusan Kar, Niranjana Mishra, Alok Kumar Sethi, Bikas Ranjan Mahavoi

ABSTRACT

Vascular anomalies often affect the soft tissues though primary intraosseous lesions are uncommon. A 29-year-old patient reported to the Oral and Maxillofacial Surgery department of SCB Dental College, Cuttack, with the complaint of unusual bleeding from his extracted tooth socket. After undergoing routine hematological and radiological investigations and an angiogram, a diagnosis of arteriovenous malformation of the right posterior maxilla involving the posterior superior alveolar artery was established. Subsequently, the patient was treated by right external carotid artery ligation followed by partial maxillectomy. Follow-up has been satisfactory all through.

Address for correspondence:

Dr. Indu Bhusan Kar,
Department of Oral and Maxillofacial Surgery, SCB Dental College, Cuttack, Odisha, India.

E-mail: indubkar@yahoo.co.in

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INTRODUCTION

Vascular tumors affect the region of the head and neck commonly, particularly the jaw, but arteriovenous malformations (AVMs) are rare.^[1] The earliest description of an AVM was the reporting of snakes covering the head of Greek god Gordon's head.^[2] Though usually benign, sometimes these can prove fatal because of their potential for massive bleeding. AVMs can either be congenital or acquired. Congenital AVMs occur as a result of lack of differentiation of arteries, veins, and the capillaries during vascular development.^[3] There is a persistent communication between them, resulting in short circuiting of blood.^[4] The acquired malformations are usually associated with a previous history of surgery or blunt trauma.^[5] In either case, an alternate pathway bypasses the normal high capillary resistance region and profuses it with an excessive amount of blood; the incidence of hemorrhage is high.^[6,7] The literature does not mention any one particular modality as the treatment of choice.

We report a case who presented to us with a massive AVM of the right maxillary region to emphasize upon the surgical modality of treatment.

CASE REPORT

A 29-year-old male patient had reported to oral and maxillofacial surgery (OMFS) department with the complaint of bleeding from the oral cavity after the extraction of the mobile right maxillary second molar, for last 10 days [Figure 1]. He had extracted his tooth as it was loose and causing difficulty in chewing. Immediately after extraction, a significant amount of bleeding was noticed through the socket which was unusual to a routine extraction. However, it was arrested with pressure pack.

On the fourth day of the extraction, when he was eating he noticed severe bleeding from the socket, and subsequently, he was transferred to a local hospital and was managed conservatively by a pressure pack. After that he was referred to the surgery department of MKCG Medical College, Berhampur. The bleeding was arrested with pressure pack and he was treated with blood transfusions and styptics. All his investigations toward the cause of bleeding were within normal limits. As the bleeding continued, he was transferred to the OMFS department of SCB dental college and hospital.

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Figure 1: Preoperative photograph

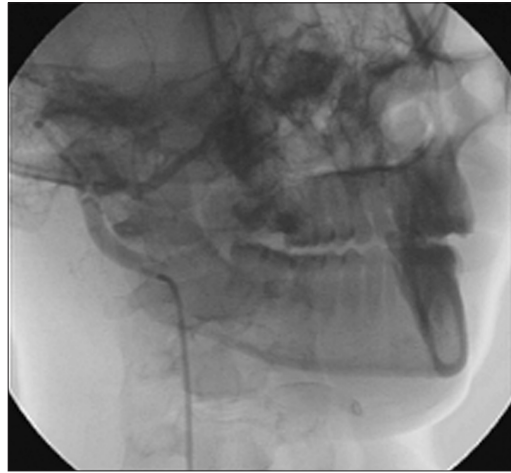


Figure 2: Carotid angiogram



Figure 3: External carotid artery ligation in the carotid triangle of the right-side neck



Figure 4: Partial maxillectomy



Figure 5: Postoperative facial photograph

When he reported to the OMFS department, he was in a low general condition due to prolonged bleeding. On examination of the socket, there was a pulsatile clot present. Even on slight provocation of the socket, bleeding occurred so severely that the entire oral cavity

got filled with blood within few seconds. The bleeding was arrested with a ribbon gauge soaked in Whitehead varnish packed into the socket and biting pressure. The patient was admitted for definitive treatment. Over a period of 2 days he was treated with antibiotics, blood transfusions, and palliative measures while diagnostic investigations were being carried out.

There was no past and family history of bleeding and coagulative disorders except that the patient had epistaxis on many occasions which went unreported. All hematological investigations performed were within normal limits. An orthopantomogram was performed which revealed a faintly and ill-defined radiolucent lesion extending from the right maxillary central incisor to the posterior maxillary region. A computerized tomographic (CT) scan was also performed which showed a multilocular radiolucent lesion involving the right posterior maxillary region. Finally, an angiogram of the right external carotid artery was performed and a diagnosis of an AVM involving the posterior superior alveolar vessels in the

region from the right maxillary canine to the tuberosity area was established [Figure 2].

The patient was planned for external carotid artery ligation with partial maxillectomy under GA. The right-side external carotid artery was explored in the carotid triangle of the neck and was ligated above the level of the superior thyroid artery [Figure 3]. It was followed by partial maxillectomy of the right side through an extraoral approach (by Weber-Ferguson incision). Maxillectomy was carried out with an oscillating saw sparing the zygoma, zygomatic arch, and lateral nasal bone [Figure 4]. On exploration, the anterolateral wall of the maxilla was found to be with small perforations presenting with copious bleeding. Partial maxillectomy was done from canine to the molar region. Subsequently, bleeding was arrested. Intranasal antrostomy was performed and the maxillary antrum was packed with an antibiotic-soaked ribbon gauge. After primary closure, a prefabricated acrylic splint was given and the specimen was sent for a histopathology study. The postoperative recovery was uneventful and the patient was discharged after 7 days of follow-up [Figure 5]. Subsequent follow-up revealed satisfactory wound healing and the histopathology report came as AVM.

Review of the literature

Though an AVM occurs in the orofacial region but this type of malformation involving maxilla is rare and is a challenging entity. Usually the AVM occurs in the soft tissues but intrabony involvement is rare. Four cases of mandibular AVM involving the mental foramen have been reported which were treated by transvenous embolization through the mental foramen with the coils and NBCA (*N*-butyl-2-cyanoacrylate).^[8] Another case of intraosseous venous malformation of zygoma was reported by Srinivasan.^[9]

Vascular malformations are often present at birth (though they may not appear till the later years) and grow insidiously with the patient throughout life and are characterized according to the main vessel type and flow characteristics. In contrast to hemangiomas, they never proliferate or involute, but expand slowly and relentlessly throughout life. Trauma, puberty, and pregnancy can cause periods of accelerated growth.

Venous malformations are characterized by an abnormal collection of veins with no demonstrative mitotic activity in the endothelial cells or pericytes and often lack a uniform muscle layer. The distinction

between a proliferative phase hemangioma and a venous malformation is relatively straightforward, but the distinction between a late stage hemangioma and a venous malformation on the basis of routine histology is difficult. Recent advances in immunohistochemistry, especially the use of GLUT-1, have made the more accurate characterization of these lesions possible. Juvenile hemangiomas consistently express GLUT-1 immunoreactivity whereas vascular malformations consistently fail to express GLUT-1. In the present case, we did not perform GLUT-1 immunoreactivity.

The management of these lesions depends on symptomatic control and for aesthetic concerns. In the present case, a decision was made to remove the lesion as it caused severe bleeding. Though various therapeutic options have been described for soft tissue venous malformations, surgical excision remains the mainstay for purely intrabony lesions. If necessary, it may be augmented with preoperative embolization. There have been no reports of recurrence or increased intraoperative bleeding when these lesions have been removed with a margin of normal tissue.

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