

The “Point of Care” section answers everyday clinical questions by providing practical information that aims to be useful at the point of patient care. The responses reflect the opinions of the contributors and do not purport to set forth standards of care or clinical practice guidelines. Readers are encouraged to do more reading on the topics covered. If you would like to contribute to this section, please contact editor-in-chief Dr. John O’Keefe at jokeefe@cda-adc.ca.

QUESTION 1

How do I manage a suspected oral vascular malformation?

Background

Current classifications of vascular abnormalities can help the practitioner to establish the correct diagnosis. Accurate diagnosis is essential because treatments vary according to the nature of the lesion. In 1982, Mulliken and Glowacki¹ introduced the first simple classification scheme. They subdivided vascular abnormalities into hemangiomas and vascular malformations, which are distinguished by clinical, histochemical and cytological findings, as well as the depth of the lesion and the characteristics of flow (Table 1). An understanding of the relevant terminology can help the practitioner to precisely identify the vascular entity and thus to provide appropriate treatment.

Most hemangiomas appear after birth, but 30% are present at birth.^{1,3,4} They grow by rapid proliferation and tend to involute during childhood.^{1,3,4} These malformations are caused by failure of differentiation in the early stages of embryogenesis. Hemangiomas develop by endothelial hyperplasia and enlarge by cellular proliferation.¹ They are categorized as superficial, deep or compound and are usually extrasosseous.⁴⁻⁶ They are 3 to 5 times more common among females than among males.⁶ Hemangiomas are only rarely associated with death, but they can cause psychosocial trauma because of alteration in the patient’s appearance. In this regard, it is noteworthy that 60% of such lesions occur in the head and neck region.

Vascular malformations are less common than hemangiomas. They do not exhibit cellular hyperplasia but develop by progressive ectasia of abnormal vessels lined by flat endothelium on a thin basal lamina.¹ Vascular malformations are classified as either simple or combined. Simple lesions are further classified as low-flow or high-flow. Low-flow lesions are capillary, venous or lymphatic.² High-flow lesions are arterial in nature and may present with a bruit and thrill.

Both simple and combined lesions are present at birth and tend to grow proportionately with

the patient’s growth.^{1,3,4,7} Vascular malformations never proliferate or involute, but growth may be accelerated during trauma, pregnancy and puberty. Their expansion can cause significant physical deformity, and there is a potential for fatal hemorrhage.⁷ This type of lesion may be associated with decreased perfusion because of shunting of blood to the malformation. Some reports show that both sexes are affected equally, while others indicate a

Table 1 Classifications of hemangiomas and vascular malformations^a

Hemangiomas
Classification by depth of lesion
Superficial
Deep
Compound
Classification by stage at presentation
Congenital hemangioma (present at birth)
• Rapidly involuting
• Non-involuting
• Non-progressive
Infantile hemangioma (appearing after birth)
Vascular malformations
Simple lesions
Low-flow
• Capillary (port-wine stain)
• Venous
• Lymphatic (lymphangioma)
High-flow
• Arterial
Combined lesions
Ateriovenous
Lymphovenous
Other combinations

^aAdapted from Ethunandan and Mellor² with permission from Elsevier.



Figure 1: Vascular malformation in the maxillofacial region. In this case, complete removal of this apparently small lesion could result in severe disfigurement due to the underlying extent of the lesion.



Figure 2: Arteriogram of an oral vascular malformation.



Figure 3: Resected mandible with vascular malformation.

Table 2 Simplified diagnostic approach to congenital vascular lesions^a

Was the lesion present at birth?
Yes: vascular malformation No: hemangioma
Has there been rapid proliferation?
Yes: hemangioma No: vascular malformation
Is involution present?
Yes: hemangioma No: vascular malformation
Lesions present in adulthood
Residual hemangioma Vascular malformation

^aAdapted from Ethunandan and Mellor² with permission from Elsevier.

female predominance by a ratio of 2:1.⁶ About 51% of vascular malformations occur in the head and neck region, and they are usually extensive, which makes treatment very difficult.⁸

Clinical Evaluation

An accurate history and a thorough physical examination are key to accurate diagnosis (Table 2). Clinical clues to vascular lesions of bone, which may not be readily apparent on clinical examination, include pericoronary bleeding, mobility of the teeth and occlusal abnormalities.⁹ The typical radiographic appearance of this type of lesion is a poorly defined radiolucent area often described as resembling a honeycomb or soap bubbles.

A radiographic investigation should be undertaken before performing any dental extraction. This is important because although these lesions are rare, a vascular malformation of the maxillofacial region can give rise to a dental emergency, including the possibility of death, if the lesion is inadvertently disturbed. Such emergencies typically occur after a dental extraction in cases when the practitioner was previously unaware of the existence of the malformation.⁷

Diagnostic Investigations and Treatment

The treatment of a vascular malformation depends on the type and extent of the lesion (Fig. 1). When a vascular malformation is suspected, further investigations are needed to facilitate management. Computed tomography and magnetic resonance imaging can help to clarify the extent of the lesion, any bony involvement and the associated major vessels.⁹ Super-selective arteriography (Fig. 2) is essential in identifying contributory vessels and mapping out the lesion.¹⁰

Management strategies for vascular malformations include no treatment, embolization, surgical resection and combined treatment. Embolization consists of occluding the vessels that supply the lesion. Access is usually gained through femoral catheterization. Materials such as ethylene vinyl alcohol copolymer dissolved in a dimethyl sulfoxide liquid embolic agent (Onyx, Micro Therapeutics, Inc., Irvine, CA), muscle, sterile compressed sponge (Gelfoam, Pfizer, New York, NY), cyanoacrylate (Histoacryl, B. Braun, Melsungen, Germany), and polyvinyl alcohol (PVA) particles (Embolus, B. Braun, Melsungen, Germany) are used for embolization.

noacrylate, metal coils and collagen have been used in embolization of such lesions.⁷ Successful treatment usually requires complete removal of the vascular malformation (Fig. 3), to prevent recurrence. Treatment in the maxillofacial region may be complicated, as the benefits of complete removal must be weighed against the resulting severe disfigurement and functional difficulties.⁸ For lesions in the oral and maxillofacial region, treatment may be performed by an oral and maxillofacial surgeon, an otolaryngology specialist or a plastic surgeon with the help of an interventional radiologist. ♦

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QUESTION 2

How do I perform a first dental visit for an infant or toddler?

Background

The increasing prevalence of early childhood caries is a cause for concern. However, the small number of pediatric dental specialists across Canada means that clinicians working in general dental offices are also needed in the fight against this preventable disease. Parents often complain that they are unable to obtain appropriate care when they notice problems with their children's teeth. All too often, dental offices decline to see children under 3 years of age. This message is usually conveyed to parents by the team member who answers the phone, who may be unaware of recent guidelines¹⁻³ highlighting the need to educate the entire office team (not only the dentist) about including infants and toddlers in the population served by general dental offices. This article provides a few guidelines on providing a child's first dental visit as part of everyday practice.

In November 2001 the Board of Governors of the Canadian Dental Association (CDA) adopted the following recommendation: "CDA encourages the assessment of infants, by the dentist, ... within

6 months of the eruption of the first tooth or by one year of age."¹ A survey of general dentists⁴ across western Canada has revealed that although most respondents were aware of the CDA recommendation, a substantial proportion did not see children under the age of 2 years. Among those who did not accept young children into their practices, almost half cited difficulties in managing the patients because of their age and potential behavioural challenges as their main concern. Interestingly, several dentists felt that nurses and physicians should play a role in preventing early childhood caries. However, it may be unrealistic to expect medical colleagues to become involved in managing this problem when many in the dental profession refuse to do so.

Conducting a Child's First Dental Visit

The first dental visit consists of a great deal of "preamble," a very short examination and some follow-up with the parent.⁵ Much of the preamble can be completed by the office staff working at the