Point of Care

The Point of Care section of JCDA *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. This month's responses were provided by Dr. George Sándor from the University of Toronto and Drs. Pia López-Jornet and Ambrosio Bermejo-Fenoll from the University of Murcia. If you would like to submit or answer a question, contact editor-in-chief Dr. John O'Keefe at jokeefe@cda-adc.ca.*

Question 1

Should routine dental care for patients with asthma be any different than that for healthy patients?

Asthma is a serious global health problem, and its prevalence, particularly among children, has increased steadily over the past 2 decades[1] because of continuing pollution of the atmosphere. Therefore, dental practitioners are likely to encounter patients with asthma in routine ambulatory dental practice.

Patient History

Asthma is a disease of the small airways that is caused by constriction of the bronchioles, which results in expiratory wheezing. In a severe asthmatic attack, this wheezing can worsen over a short period of time, causing trapping of air and eventual respiratory failure. Most patients with asthma are treated or managed over the long term with a sympathomimetic agent such as salbutamol. The key in the management of asthmatic patients in the dental setting is to take a proper history, which should help the dental practitioner to identify high-risk asthma patients.[2]

For a patient with known asthma, a history of recently worsening asthmatic symptoms — especially shortness of breath — must be taken seriously. If the clinical condition has a "crescendo" type pattern or seems to be getting less stable, then the dental practitioner must consult the patient's physician before embarking upon any elective dental treatment.

Another worrisome sign of asthma is an increase in the frequency of the patient's visits to the emergency department for stabilization. Any such patient should be regarded as having unstable asthma and should not undergo dental treatment unless medical assessment has been arranged beforehand. Some patients with asthma have a strong history of seasonality. Such patients may be reactive to a particular allergen, and hence their asthma may be worse in the spring, summer or fall. Other patients have much more severe exacerbations of their asthmatic symptoms in the winter months because of sensitivity to cold. Elective dental treatments for these patients should not be scheduled during high-risk months.

Patients who require the use of systemic steroids (e.g., prednisone tablets or parenteral corticosteroids) should be regarded as higher-risk patients. In contrast, patients who are treated with inhaled aerosolized corticosteroids are at lower risk. In this respect, the inhaled steroid is like lower-risk topical therapy (similar to a steroid-containing ointment or cream), whereas oral therapy is higher-risk systemic therapy. If a patient is taking systemically administered corticosteroids, his or her physician should be consulted before treatment.

Patients who use inhaled corticosteroids may experience oral and pharyngeal candidiasis or thrush. Dentists can help in the management of these conditions by counselling the patient to either rinse with or drink some water after inhaler therapy. If the candidiasis becomes symptomatic or clinically apparent, treatment with a nystatin-containing mouth rinse is helpful.

Management of Asthmatic Patients

Patients with asthma should always be treated when their condition is clinically the most stable. Patients should be asked to bring their inhalers to the dental office[3] so that their own device is available if there is the need for inhaler therapy during dental treatment.

Patients with severe asthma who routinely use long-term systemic corticosteroids may be immunocompromised and may benefit from antibiotic prophylaxis for dental surgical treatment. ◆

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Question 2

Do patients taking oral anticoagulants need to discontinue their medication before surgical procedures?

This is probably the question that dentists most commonly ask physicians today. In providing a response, the physician must analyze the individual patient's situation carefully.

Indication for Anticoagulation

The first consideration is the reason for anticoagulation in the particular patient. The many indications for anticoagulation include prevention and treatment of deep vein thrombosis and pulmonary emboli. Patients with arrhythmias such as arterial fibrillation and those with mechanical heart valves may take anticoagulants to prevent emboli to the circulation of the central nervous system. Patients with hypercoagulable states, such as those with malignant tumours, may receive anticoagulants to prevent the complications of widespread clotting and consequent ischemia distal to the clots.

Anticoagulant

The next factor to consider is the agent being used as the anticoagulant.

Warfarin

The most common agent used for anticoagulation is warfarin sodium (Coumadin). This medication affects the extrinsic pathway of coagulation by inhibiting the synthesis of the vitamin-K-dependent clotting factors II, VII, IX and X. In doing so, warfarin increases the prothrombin time, expressed as the international normalized ratio (INR). An INR value of 1.0 is normal, but the therapeutic range or goal for anticoagulation is between 2.0 and 3.5.

Antiplatelet Medications

Antiplatelet medications, including acetylsalicylic acid and nonsteroidal anti-inflammatory drugs, inhibit platelet function, thereby increasing bleeding time. Although these are important therapeutic agents for other purposes, they are not typically used as anticoagulants. Their use was discussed in a previous article in this journal.[1]

Heparins

Heparin and heparin-like medications decrease blood clotting through their effect on the intrinsic pathway of coagulation. This effect is demonstrated by laboratory tests such as partial thromboplastin time. These medications are most often given parenterally, and ambulatory patients in a dental office setting are therefore unlikely to be receiving them. The exception is patients undergoing long-term hemodialysis, in whom heparin is used to prevent clotting within the dialysis equipment. If such a patient goes to the dental office immediately after a dialysis treatment, he or she may have some residual heparin circulating in the blood, which could lead to prolongation of bleeding after surgery. Therefore, surgical treatment for these patients should be scheduled on the day after dialysis, to give time for circulating heparin levels to fall. For any patient who is receiving heparin anticoagulation, consultation with the physician is recommended before any surgical treatment.

Risk of Clotting if Anticoagulants Are Discontinued

The next consideration is the risk of clotting that may arise if the anticoagulant is discontinued. This risk may be difficult to determine. If a patient has had recurrent thromboembolic events, then the risk of a subsequent clot is thought to be high. However, it is safest to assume that the risk of clotting is elevated whenever anticoagulants are discontinued, regardless of the patient's history.

Risk of Hemorrhage if Anticoagulants Are Not Discontinued

The final consideration is the risk of bleeding after surgery if the anticoagulants are not discontinued. Many specialists in internal medicine and hematology view postoperative intraoral bleeding as so-called visible bleeding. They typically regard this form of bleeding as less dangerous than "silent" bleeding, such as intra-abdominal, intrathoracic or intracranial bleeding. The latter can have disastrous consequences, even though it may go unnoticed. However, postoperative bleeding from intraoral sources can also be significant and life threatening, and these episodes should not be taken lightly.

The decision whether to continue or discontinue anticoagulants is always made by delicately balancing all the foregoing factors.

Evidence-Based Literature

There is some evidenced-based literature to help guide the dental practitioner in treating patients who are taking anticoagulants. In one randomized controlled trial,[2] the 109 study patients were taking warfarin and had an INR within the normal therapeutic range. Of these patients, 52 were assigned to the control group (warfarin stopped 2 days before extraction) and 57 patients were assigned to the intervention group (warfarin continued). The incidence of bleeding complications in the intervention group was higher (15/57, 26%) than in the control group (7/52, 13%) but this difference was not statistically significant. The authors concluded that because of the risks

associated with stopping warfarin, the practice of routinely discontinuing this drug before dental extractions should be reconsidered.

In a more elaborate trial,[3] 249 patients who underwent a total of 543 dental extractions were divided into 5 groups on the basis of INR value on the day of the procedure: group 1, INR of 1.50–1.99; group 2, INR of 2.00–2.49; group 3, INR of 2.50–2.99; group 4, INR of 3.00–3.49; and group 5, INR greater than 3.49. Local hemostasis was accomplished with a gelatin sponge and multiple silk sutures. Of the 249 patients, 30 (12%) presented with postoperative bleeding: 3 (5.0%) of the patients in group 1, 10 (12.8%) of those in group 2, 9 (15.2%) of those in group 3, 5 (16.6%) of those in group 4 and 3 (13.0%) of those in group 5. The incidence of postoperative bleeding was not significantly different among the 5 groups, and the value of the INR within the therapeutic range did not appear to significantly influence the incidence of postoperative bleeding. The authors concluded that dental extractions could be performed without modification of oral anticoagulant treatment. Local hemostasis with gelatin sponge and sutures appeared to be sufficient to prevent postoperative bleeding in this study.

Management

Evidence-based clinical practice requires that individual clinicians develop and refine their literature searching and appraisal skills and document their clinical experience.[4] They must balance the evidence reported in the literature with what they know from experience to be clinically safe. Recommendations have been made with respect to dental patients taking warfarin according to their INR values.[5] For patients whose INRs are within the therapeutic range (that is, less than 3.5), the anticoagulants are not routinely stopped and reliance is placed on local measures such as removal of all granulation tissue and use of gelatin foam sponge, oxycellulose packing of the extraction socket and suturing. These measures are typically used for routine extractions, but practitioners must be careful in adapting them to other, more invasive surgical situations, such as removal of impacted teeth or use of periodontal flaps, where postoperative bleeding can be more problematic. ◆

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Question 3 Should patients with seizure disorders continue to take their medications during routine dental treatment?

Epilepsy is a seizure disorder that is a common symptom of underlying neurologic disorders. A seizure disorder can take a variety of forms,[1] which are generally categorized as focal or generalized. The seizures may be idiopathic or may be due to central nervous system scarring after trauma, for example. Seizures can also occur secondary to a brain tumour or metabolic disturbance such as hypoglycemia.

Antiseizure Medications

Chronic seizures are managed by antiseizure medications. These drugs typically increase the seizure threshold. Antiseizure medications include the following drugs: benzodiazepines, barbiturates, valproic acid, phenytoin and carbamazepine. All of these drugs require the maintenance of a minimum therapeutic drug level to ensure efficacy, which in turn requires patient compliance and adherence to the prescribed dosing regimen.

Dental practitioners should not ask patients to withhold seizure medications before dental treatment. On the contrary, patients should be encouraged to take any antiseizure medication with a sip of water on the day of the dental appointment, as usual. An interruption in the stream of antiseizure medication can lead to falling drug levels and an increase in the frequency of seizure activity either during or following dental treatment.

Management of Seizures

If a seizure should occur during dental treatment, then the protocols for neurologic emergencies demand that the dentist stop all major procedures, remove all foreign objects from the patient's mouth, maintain the airway, and monitor breathing and circulation. If there is no prior history of seizures, a quick secondary survey should be done to identify possible causes of the seizure.[2] If the

seizures become continuous then it is imperative that someone in the dental office notify emergency medical services.[2]

Both the underlying neurologic condition and its medical management can affect oral health. Patients with neurologic conditions may find it more physically difficult to perform oral hygiene tasks. Some medications such as phenytoin may induce gingival hyperplasia, which can be worse if the patient has poor oral hygiene. Prevention of oral disease and carefully planned dental treatment are essential to the well-being of patients with seizure disorders.[1]

The answers to questions 1 to 3 were provided by ***Dr. George Sándor****. Dr. Sándor is coordinator of oral and maxillofacial surgery, The Hospital for Sick Children and The Bloorview MacMillan Children's Centre, Toronto, Ontario, director of the graduate program in oral and maxillofacial surgery, and associate professor, University of Toronto. E-mail: george.sandor@utoronto.ca.*

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Question 4

What is the most appropriate treatment for salivary mucoceles? Which is the best technique for this treatment?

Mucocele is the most common disorder of the minor salivary glands (2.5 per 1,000 population). These lesions occur more frequently among children, adolescents and young adults than among adults,[1] and males and females are affected equally.

Salivary mucoceles are variably sized mucosal swellings with mucoid content. They are benign lesions, typically induced by trauma, which contain saliva extravasated from or retained within a duct. Extravasation is much more common in mucoceles of the lower lip and often occurs between the midline and the angle of the mouth, although this process can also occur elsewhere.[2,3] Clinically, the mucocele appears as a translucent, circumscribed, painless, soft, recurrent swelling of the mucosal lining. The lesions usually occur singly; bilateral presentations are very rare. After the initial trauma, the lesion decreases in size because of saliva resorption; however, because mucus production often continues, the lesion is characteristically dynamic, with fluctuations in size. In most cases the diagnosis is established on the basis of clinical findings, although histological confirmation is required to confirm the diagnosis and ensure proper identification of the implicated salivary gland to allow its removal and thus to prevent recurrence.

The best treatment results are afforded by complete surgical resection.[4] Needle aspiration always results in short-term recurrence or relapse. Cryosurgery and carbon dioxide laser surgery have both been used to eliminate these lesions, with good results.

A simple and fast technique for removing minor salivary gland mucoceles is proposed. This method involves use of the B forceps (a modification of the Chalazion forceps),[4,5] which simplifies elimination of lower lip mucoceles.

The tips of the forceps are fenestrated to facilitate access to the grasped tissue. The lesion to be removed appears exposed in the window. Forceps compression induces a fluid depletion effect, which allows surgical removal of the lesion under local ischemic conditions. Furthermore, the compression causes the sectioned portion (detached from its peripheral connective attachments) to be propelled like a plug of tissue, which thereby facilitates depth appraisal and

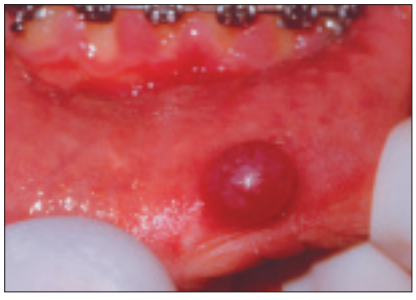

Figure 1: *Labial mucocele in a 12-year-old girl. Note the well-delimited swelling with an overlying mucosal layer of normal appearance.*

Figure 2: *Positioning of the B forceps and initiation of surgical removal.*

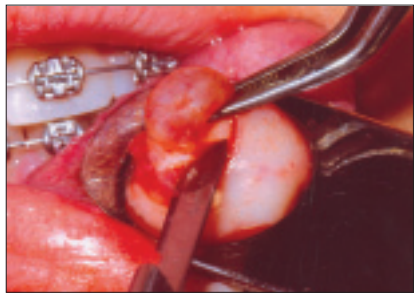

Figure 3: *Surgical removal of the mucocele.*

access to the base for adequate sectioning. The time required for removal of the lesion is shortened by 50%. The forceps guarantee visibility, hemostasis and access, since the surgical field is free of blood and saliva (**Figs. 1** to **3**).

After resection, the margins are sutured with silk or resorbable material; 3 or 4 stitches are sufficient. Careful manipulation is required to avoid damaging the sample, which is then immersed in fixative for later histologic study. This approach offers several advantages. such as induction of ischemia (which improves visibility and thus further facilitates resection) and rapid removal, and the help of an assistant is not required. ◆

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