Risk management in clinical practice. Part 11. Oral surgery

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IN BRIEF

- Patients expectations of pain, complications and after care can be managed by careful discussion.
- This article notes complications that require the patient's recognition before commencement of the procedure.
- Medical histories may have a significant impact on the delivery of oral surgery.
- Patients of all ages presenting to primary care with trauma and avulsed teeth need specific management.

PRACTICE

Oral surgery is often an unpleasant experience for a patient and if managed inadequately can be a cause for complaint or a claim in negligence. A practitioner can reduce their risk of complaints, claims or even regulatory body investigations by following some straightforward risk management strategies. Effective communication skills deployed throughout the interaction with the patient, especially during the consent process, are a pre-requisite, as is a proper understanding of the law on consent. An honest reflection by the practitioner on their competence to carry out a procedure, considering their skills, the equipment and support available will result in fewer medico-legal cases. In this article, each stage of the patient's journey is discussed and risk management advice offered for a range of procedures that are regularly encountered in general dental practice.

Oral surgery under local anaesthetic is at best uncomfortable for the patient and at its worst an extraordinary and traumatic business. The heart of the conscientious practitioner will sink when the patient's friend or relative helpfully suggests that the proposed procedure will 'be

RISK MANAGEMENT IN CLINICAL PRACTICE

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Refereed Paper Accepted 20 October 2010 DOI: 10.1038/sj.bdj.2010.1182 ®British Dental Journal 2011; 210: 17–23 fine and won't hurt a bit...' just as the operator approaches to provide a local anaesthetic infiltration.

When considering oral surgery in primary care it is imperative that each practitioner reflects carefully on the following:

- Communication
- Competence
- Consent.

As in many other disciplines, success or failure can depend on communication skills. If the anxious patient's expectations can be managed in order to prepare them for the admittedly unpleasant procedure, the chances of a claim in negligence or a complaint will be significantly reduced.

The ability to reflect on one's ability and competence is a key area of practice that is necessary when considering the risk management for any given procedure. If a procedure is proposed that is at the limit of a practitioner's competence (or beyond it), and the procedure is either not completed or carried out to a lower than expected standard, the practitioner is open to challenge either by the local authorities, national regulator or the civil courts and of course the patient directly.

In order to obtain valid consent the nature, purpose and alternatives to a proposed plan need to be explained, as do the material risks and consequences of each choice, with sufficient depth for the patient to make a clear choice about their treatment. Inevitably, the nature of the consent is a key area of interest in a claim in negligence, a complaint and an enquiry by the regulatory body.

COMPETENCE

The GDC has approved the curriculum of undergraduate teaching in the UK and has an expectation that each registrant has reached a minimum standard of training. The Courts in England and Wales have set the standard that is expected: 'The standard of reasonable care and skill required is that of the ordinary skilled person exercising and professing to have that special skill.'¹ It is against these standards that the care of a patient by an individual practitioner is determined.

Once a diagnosis has been made and a plan developed and proposed, it is important that the practitioner reflects on their own ability to execute the plan as agreed with that patient. In reflecting on this the practitioner does have an obligation to inform the patient if, although experienced in many procedures, they may be relatively inexperienced in this particular one, giving the patient a choice to be referred to another colleague who may be more experienced, but not necessarily a specialist. An important element of consent is the information given to the patient, and it follows that the prudent patient might consider it significant

^{11.} Oral surgery

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to know in advance that the person about to operate, although well versed in the theory, had not actually carried out the procedure. The regulatory body considers insight into a practitioner's ability important² and criticises registrants who show little or no insight into the limits of their ability.

Competence in a particular procedure is a function of experience and training, both academic and practical. There really is no substitute for hands-on practical experience in minor oral surgical procedures. With the advent of widespread fluorides, better oral hygiene measures and a shift in the mindset of the public and profession to preserve teeth almost at any cost, the number of oral surgery procedures a young practitioner may be exposed to can be small.

An inexperienced practitioner may be further hampered by a lack of knowledge of the appropriate instruments to select or indeed to hold available within the practice. Incorrect instrumentation incorrectly used can be potentially disastrous.^{3,4}

PRE-OPERATIVE ASSESSMENT

A frequent complaint following oral surgery in practice is that the procedure was painful both during and afterwards, far more so than the complainant expected. The length of time a particular procedure appeared to take frequently features in complaints. Claims in negligence relate principally to damage caused to adjacent structures, including allegations that the wrong tooth has been removed or damaged, for example. Many of these complaints and claims can be anticipated and managed by a thorough, realistic pre-operative assessment and a valid consent. It is imperative that any preoperative assessment is fully documented in the contemporaneous record so that it can be relied on later as a record of the information available at the time of consent and also of the conversation that took place between the operator and patient. It is frequently helpful to be able to refer to a detailed consent form, signed at the time of the discussion.

The records should show that a proper consideration of all the relevant factors, both local and systemic, has taken place. This should include a review of the relevant medical history and a note about the justification for the procedure, the choices available and given to the patient and any concerns about the vulnerability of local structures that may be damaged even in the normal course of the procedure having been given to the patient. A practitioner who embarks on a procedure without appreciating the breadth and depth of the duty of care owed to a patient is potentially embarking on a long medico-legal journey that may have been frustrated at the outset.

The patient's journey is rarely straightforward and inevitably the treatment plan must be varied to suit the particular circumstances depending on the emerging clinical picture and the choices made by the patient, including the timetable and financial constraints. At each stage it is important that the patient is aware of any compromise to the ideal standard as accepted by the profession.

In approaching risk management of oral surgery it is helpful to put into place systems which can be used to identify and eliminate common errors in process that might leave the practitioner and patient vulnerable. The systems should be based on the 'gold standard' of care that a practitioner might want a family member to experience. Any compromise from the 'gold standard' leaves a practitioner vulnerable to criticism.

Relevant medical history

A responsible practitioner will consider the effect of the proposed procedure both locally and systemically. A review of the relevant medical history is a key aspect of this assessment and a failure to identify or document a relevant medical problem may have disastrous consequences for the patient. Complacency is a big danger when medical histories are not regularly updated, particularly when there are a number of concurrent problems, some of which are under investigation. This is an increasing problem in an ageing population.

It is a mandatory pre-operative assessment to obtain and update at regular intervals a thorough medical history. Systems need to be in place to ensure that the medical record is checked, especially where the procedure may compromise or be compromised by the patient's medical condition. Minor oral surgery procedures engage a whole raft of medical conditions not challenged by many other aspects of dental care. Common health conditions such as diabetes, hypertension and aspirin therapy may all impact more or less significantly without really altering regular dentistry.

Common causes for complaint in dentolegal practice, such as post-operative bleeding and incorrect prescribing to allergic patients, can be anticipated and addressed with simple risk management steps, such as a routine to ask any patient being issued with a prescription whether or not they are allergic to the particular medication, having previously checked on the dental record. It is a simple fallback procedure that should be repeated at the dispensing pharmacy.

Post-operative bleeding should, ideally, be anticipated and dealt with intra-operatively, with local haemostatic measures, sutures, haemostatic gauze etc, and above all a clear written instruction sheet bearing a telephone number for the patient to obtain out of hours advice. This is an example of how patient expectations can be managed so that they understand what to anticipate following a procedure, as part of the consent process. All that the written instructions provide are a confirmation of everything that has been said and the provision of a telephone contact number.

A thoughtful practitioner must reflect on the risks that the patient may be exposed to during oral surgery procedures, keeping up to date with evidence of emerging risks such as bisphosphonate therapy⁵ and a variety of new drugs, particularly anticoagulants. The *British National Formulary* (BNF) and other useful resources⁶ ought to be easily accessible in order to review the effects and side effects of any prescribed medication and any health impact of the proposed treatment.

A correct assessment of the risk of carrying out a procedure within the practice rather than offering or firmly suggesting a referral should be part of the consent process. For example, no-one in secondary care would criticise a primary care practitioner for referring on a patient with unstable angina who required oral surgery. However, a referral based on an overanxious or incorrect assessment of a stable, existing condition only causes inconvenience to patients and secondary care providers, leading to avoidable complaints. It follows that practitioners must have an up to date working knowledge of medicine. Ignorance is not an adequate defence in a claim or regulatory enquiry.²

Bearing in mind the stresses which can be experienced by patients undergoing oral surgery, the practice must be adequately prepared and rehearsed to deal promptly with an acute medical event.⁷

DIAGNOSIS, TREATMENT PLANNING AND CONSENT

Errors and 'near misses' are not uncommon in minor oral surgery procedures. Many can be risk managed by careful reflection on the working diagnosis, ensuring that the correct tooth is being treated, having obtained sufficient information to have confidence that the correct plan has been offered to the patient. In order to deal with an enquiry afterwards, it is necessary to show enough information has been recorded to be able to explain the decision to a third party. Common difficulties are the absence from the records of adequate radiographs, and an absence of vitality or sensibility tests.

Acute pulpitis can be very difficult for a patient to localise to a particular tooth, therefore if extraction is proposed as the definitive management of the problem detailed records of the investigations will be necessary in order to deal with a claim for wrongful extraction. This is important where a number of teeth may be grossly carious.

It is appropriate to consider other, more uncommon causes of dental pain before committing a patient to an extraction. While relatively rare, atypical odontalgia or atypical facial pain can be sufficiently distressing for a patient to demand an extraction. A trial of local anaesthetic, to see whether or not a pain is abolished, is invaluable in this particular group. A valid consent is necessary as the patient must understand that although they are going to receive a local anaesthetic, there may be no other active dental treatment carried out and no short-term or immediate resolution of the pain.

Equipment

Simple risk management techniques must be applied to the availability of equipment for a proposed procedure. If you do not have the equipment or instruments to complete the surgery, including managing the regular complications, it would be unwise to start the procedure. It goes without saying that any instrument or item of equipment should be fit for purpose and used for the purpose it was designed for only. Air turbine high speed handpieces should never be used intraoperatively to section teeth or remove bone. Surgical emphysema^{3,4} is a sudden and potentially life threatening complication of third molar surgery. It can also be a complication of maxillary molar removal. Winter's forceps have fallen out of favour, to the point that it would be considered a breach of duty of care to deploy this instrument in contemporary practice. The mandible and alveolar bone of the maxilla is vulnerable to fracture when exposed to the forces developed by Winter's forceps.

It goes without saying that standard cross infection procedures (SCIP) should be used in oral surgery in the primary care setting.

Orthodontic extractions

Orthodontic extractions present difficulties as information is transmitted between two (or more) practitioners who each have a duty of care to the patient. The form of transmission is a source of error and near miss. Ideally a referral for elective extractions of healthy teeth should be written in two forms, both symbolic and written longhand. Charting on no-carbon paper is not foolproof, and incidences have been known where the bottom copy is sent to the surgeon but the paper had slipped, resulting in the contra-lateral premolar being removed. Simple typographical errors can occur when letters are typed and if the letter is not checked against the record, incorrect teeth may be extracted. Each operator should have a system to ensure the correct tooth is removed, assuming the letter of instruction is correct. Errors can creep in where the initial charting is, for example, incorrect and a premolar tooth is either congenitally missing or has been extracted earlier. In other words, it is prudent to check the records, the letter, the mouth and finally with the patient and/or their parent before obtaining consent for extraction of a particular tooth or teeth. Naturally an extraction of a wrong tooth is by definition treatment without consent, as the consent was specifically obtained to remove the neighbouring tooth.

Pre-operative radiographs

If a 'reasonable practitioner' would expect to have sight of a pre-operative radiograph before obtaining a valid consent, it is a logical position that a prudent patient would want to know what information might be gleaned from such a radiograph. It is also fair to say that a clinical decision to extract a tooth does not necessarily need a contemporary radiograph to establish the tooth anatomy and its relationship to adjacent structures. There are exceptions; where pathology is developing and changing rapidly, an up-to-date image can be helpful. The key is to be able to assess the anatomy of the tooth and the neighbouring structures sufficient to anticipate any potential difficulties or complications. It is important that the whole of the root anatomy is visualised clearly on the film. In third molar surgery and mandibular premolar surgery, where there is a very real risk of nerve damage if the neurovascular bundle is traumatised during the surgery, a reasonable operator would want to know about the relationship of the tooth to the nerve trunk. In order to achieve a valid consent the patient should have the measurable risk of intra-operative nerve injury explained and quantified. It follows that a radiograph which does not provide all the information to obtain a valid consent falls below an acceptable standard, as it exposes the patient to the possibility that avoidable harm may occur during the proposed procedure.

As in all radiographic investigations, a proper justification should be documented in the records, along with an assessment of the quality and diagnostic yield and also a report of the film.

Pre-operative warnings

In order to obtain a valid consent, patients must have sufficient information to decide that they will agree to the proposed course of action, having weighed up the alternatives and risks of each choice.

In assessing and communicating the risks it is helpful to consider the prudent patient and what information that prudent patient would like to have before reaching a choice. It is also important to understand what view the law takes about pre-operative warnings.⁸ Every procedure has consequences and risks. It is an expectation on a day-to-day basis that

the risk of complications will not come to pass. It is also an expectation that if the consequences do occur, there will be no long lasting difficulty. In obtaining a valid consent, the patient must have been given sufficient information to be able to understand the normal consequences and the risks of complications developing with an insight into the long-term effects of the complication should it come to pass and the chances of that risk taking place. The greater the effect of the risk, if it occurred, the more thorough the explanation needs to be. The Courts expect that if a risk is foreseeable, a warning should be given.

This means that careful risk management requires a reflection with the patient about the consequences and the risks of any procedure and equally importantly the consequences and risks of not doing the proposed procedure.

Take for example the risk of a fractured mandible during an extraction; it is foreseeable when extracting a deeply buried third molar or second premolar, and a specific warning is appropriate in those circumstances, but in the straightforward extraction of an erupted first or second and partly erupted third molar tooth it would be a theoretical risk, but a reasonable practitioner would not normally expect to warn.

Ultimately, a patient may decide not to give consent for a particular procedure and instead, seek a referral to a more experienced colleague. A practitioner must bear in mind their obligations under *Standards for dental professionals*² not to interfere with the voluntariness of consent by putting a patient under duress to permit that practitioner to carry out a procedure in these circumstances.

SOME SPECIFIC SURGICAL PROCEDURES

Removal of maxillary teeth

A full assessment of the site-specific issues should be carried out at the preoperative or planning visit. In the case of the maxillary molars and premolars, the site-specific concerns are the relationship of the tooth/teeth to the maxillary antrum and maxillary tuberosity. The morphology of the tooth/teeth in relation to the alveolar bone and antrum must be considered and discussed with the patient, especially if it is reasonably anticipated that it will be a difficult procedure, perhaps involving an endodontically treated and crowned tooth.

Warnings

- Root into antrum. Although the risk of displacing a root or root apex into the antrum may be low, because the consequences of such an event are significant for the patient, who may require a hospital admission to remove the root, it is reasonable to offer a specific warning
- Oro-antral communication. A communication between the antrum and the socket is not an unusual consequence of a dental extraction in the maxilla. In a relatively small number of patients a fistula develops where the epithelial lining of the antrum joins the oral mucosa, ensuring a patent communication. As with a displaced root, the consequences for the patient are significant, requiring remedial surgery to close the communication with a local flap including the possibility of remedial sinus surgery. A reasonable practitioner would therefore be expected to warn the prudent patient of these specific risks
- Fractured tuberosity. A fracture of the maxillary tuberosity is a regular consequence of an extraction of a third molar, however it is the size of the fractured piece of bone that determines the significance. In many cases a small bony injury is not significant, nor even noticed by the patient. In more significant cases where either the whole of the tuberosity or even the distal segment of alveolar bone is fractured, careful management is necessary. Since complainants make much of a 'fractured jaw' it is prudent to explain, putting into perspective the risks of significant consequences, when seeking consent for third molar extractions in the maxilla. In cases where there is a lone standing molar in a resorbed maxilla and there is a real risk of a fracture of the alveolar bone which, if it came to pass, would dramatically affect the choice of restoration later, full warnings and

a choice of onward referral should be offered

• Retained apices. A pre-operative X-ray will show whether or not a tooth has apices that may be vulnerable to fracture during routine exodontia. The consequence of a retained apex on future treatment can be significant, particularly where the bone is being used to site an implant or adjacent teeth will be moved by orthodontic movement through the bone. Retained apices can compromise both of these treatments and where appropriate, the patient should be aware of these risks, and an offer to refer to an experienced colleague considered carefully. The failure to offer a referral pre-operatively is now a common element in complaint and claims.

Rare complications

All of these complications are foreseeable but unlikely, however an assessment of the risk to local structures does need to be carried out and a note made of the discussion with the patient about the relevant risks. The risks can be minimised by careful surgical technique.

- Dry socket. Although rare, a socket that is not healing needs to be assessed and managed correctly. The differential diagnosis, retained root/apex malignant change, unusual infections and osteonecrosis/osteoradionecrosis must be carefully considered and eliminated. If there is any doubt about the cause of delayed healing, experienced opinion should be sought promptly
- Torn palatal mucosa. It almost goes without saying that the best management of a torn mucosa is prevention. There are occasions where even the most experienced surgeons cause a small tear in the palatal mucosa when removing (typically) a third molar. The careful practitioner and the assistant will keep a regular review of the adjacent structures during a surgical procedure, allowing a prompt alteration of the technique to minimise the tear and manage it correctly. In significant tears, extending well onto the hard or soft palate, there can be dramatic bleeding requiring careful management of the

palatal artery and veins. Palatal tears are often associated with fractured tuberosities and fractures of the alveolar bone

- Prolapsed antral lining. This is not an immediate complication, but needs to be identified and managed correctly in order to avoid a fistula developing
- Trauma to floor of nose. The removal of impacted maxillary canine and incisor teeth which are close to the floor of the nose can be associated with damage or trauma to the floor of the nose. Epistaxis during a dental extraction, which appears to be related directly to the extraction, should be investigated to that appropriate wound closure can take place. It may be necessary to make an urgent referral to an experienced colleague or a local specialist.

Removal of mandibular third molars

Surgery to remove third molars should be considered carefully in the context of the nationally accepted guidelines.⁹ The significant risks associated with third molar surgery are related to the tooth's proximity to local anatomical structures.

A significant nerve injury either to the inferior alveolar (IAN) or lingual (LN) nerves can be very distressing for the unfortunate patient.^{10,11} Careful pre-operative assessment and surgical technique can minimise the risk of a nerve injury. Lingual nerve injury occurs either while the nerve is being protected, the soft tissue flap having been reflected and retracted, or by direct trauma from a bur, hand instrument (couplands elevator or luxator incorrectly used) or sharp bony margin during bone removal and/or tooth elevation. Techniques have been described¹² that significantly reduce the risk of nerve injury in flap elevation and retraction by employing a wholly buccal approach. As these techniques are increasingly taught and recommended, the Courts are likely to be increasingly critical of a practitioner who has not altered their technique for third molar surgery.

IAN injury is caused either by direct trauma from the root being elevated and crushing/compressing the nerve canal and its contents, by a direct contact from the bur or as a consequence of a fracture and the subsequent treatment of an iatrogenic fractured mandible.

Coronectomy^{13,14} has been proposed as an alternative technique, designed to reduce the risk of IAN. In this technique, the crown is sectioned from the roots, which are likely to be intimately involved with the IAN. The crown is removed and the roots left in situ to exfoliate naturally, be resorbed or remain *in situ*. There does not appear to be an increase in dry socket or other infection with this technique. When considering this technique, the documentation of a careful and thorough consent is mandatory because the patient needs to be clear about the decision to leave the retained roots and the reasons for that decision. Equally, the patient needs to fully appreciate that notwithstanding the best efforts of the surgeon, the roots may still need to be removed if, for example, they have become mobilised during the coronectomy, with the attendant risk to IAN.

In a negligence action the claimant must show that there has been a breach of the operator's duty of care. A failure to use an accepted technique or the careless use of an accepted technique would normally be considered a breach of duty. When an unorthodox technique is considered, a detailed explanation with appropriate warnings should be given and documented clearly in the record.

Surgical extractions of mandibular molar and premolar teeth

The extraction of lower molars and premolars often appears to be a straightforward procedure. However, a careful review of the anatomy of the roots, the extent of caries and/or restoration and a history of endodontic treatment, making a tooth brittle, means that on occasion this is a far from straightforward problem. It is important to bear in mind the relationship to the local anatomical structures, notably adjacent teeth and in particular the mental nerve.

While the mental foramen may be relatively easily palpated, the presence of a buccal infiltration of anaesthetic reduces the ease with which the foramen can be identified. It is also important to remember that the nerve itself is vulnerable during the raising of a mucoperiosteal flap. Therefore flap design and technique is important if the mental nerve is not to be damaged by a scalpel, elevator or bur. Equally where the flap might tear, the nerve trunk and branches are vulnerable.

Common complications

- Haematoma
- Bleeding
- Retained root
- Dry socket.

Rare complications

- Mental nerve injury
- Osteonecrosis
- Actinomycosis
- Fractured mandible
- Surgical emphysema.

A general practitioner should not be surprised by post-operative bleeding, certainly if it occurs within 12 or 24 hours of the surgery. A full pre-operative medical history should have identified any medication or medical condition that increases the risk of post-operative bleeding, notably hypertension and anticoagulant therapy. Simple intra-operative measures can anticipate the majority of causes of postoperative bleeding and reduce the risk of this complication, for example the formal raising of a flap, rather than permitting the mucosa to tear, and a careful review of the socket to ensure that there are no signs of significant bleeding during and immediately after the surgery is complete.

The medico-legal risk of a rare complication is that the practitioner fails to identify that a complication has occurred and therefore delays both diagnosing and treating the complication. Practitioners need to be alert to odd patterns of healing and other unusual outcomes of surgery. Osteonecrosis, osteoradionecrosis and actinomycosis can present several weeks after the surgery and are difficult to confirm. However, the pattern of pain and/or infection never quite resolving with a short course or two of antibiotics should raise a concern warranting further investigation. A detailed review of the medical history may unearth a previously undisclosed condition.

Surgical emphysema^{3,4} is caused by compressed air from the high speed air rotor handpiece (or a 3:1 water spray) being forced below the periosteum and into, for example, the submandibular space, lateral

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phayrygeal space and ultimately into the mediastinum and pericardial space. It presents with a sudden dramatic swelling of the face and cheek, closing the eye, acute chest pain and shortness of breath. In the short-term, until proven otherwise, this is an acute medical emergency. Once the medical emergency is stabilised the condition is potentially a surgical emergency with oral organisms and waterline/ airline organisms having been forced into the mediastium and pericardium. The patient should be referred for assessment and management.

As with many complications, surgical emphysema is avoidable by correct instrumentation and risk assessment. There is no scope for short cuts in surgery.

A fractured mandible is a rare complication of oral surgery¹⁵ in primary care. A simple risk assessment of the factors that might indicate an increased risk should result in a referral to a local specialist. Occasionally an unforeseen fracture can occur, therefore it is good practice to review the socket on each occasion to confirm that there is no sign of a fracture, and when the review is carried out, it should be specifically documented in the records.

Apical surgery

When a practitioner considers a particular course of action or referral for that course of action, they should be able to justify that decision having considered a differential diagnosis and following appropriate investigations, a working diagnosis. In the case of apical surgery where alternative and less invasive treatment may be available, it is imperative that patients are given a clear explanation of both the diagnosis and treatment choices available with a considered discussion about the prognosis (and cost) of each choice.

With the improvement of endodontic techniques and the ability to remove both cast and prefabricated posts, the circumstances where apical surgery is considered as a first line treatment for an apical lesion have reduced significantly.

In order to deal effectively with a claim following apical surgery, the records will need to demonstrate that, after all the other options have been discussed and considered, a reasonable practitioner would accept that there was no alternative to that surgery. It will be important to show that the option to re-do the orthograde root canal treatment has been carefully considered and excluded as a viable alternative. In contemporary dentistry there are very few circumstances where orthograde endodontic treatment cannot be considered for remedial treatment, especially with the access to microscopes and nickel-titanium rotary file techniques. It is crucial to eliminate both vertical root fractures and a breakdown of the coronal seal as a cause for failure of endodontic and crown and bridge treatments, and where surgery is contemplated to explore a failing or failed root filling, appropriate warnings about the chances of identifying a fractured tooth should be given and documented.

Where there is a radiographic indication that a periapical lesion may be suspicious, it is prudent to arrange for a biopsy to be carried out, especially if there is any doubt that a lesion may be malignant.

Acute infections

Antibiotic therapy for an acute infection suits everyone as a first line of management; it is simple for both practitioner and patient, avoiding a surgical approach. This is an approach that is frequently used incorrectly, where incision and drainage is necessary. Systemic illness and significant local spread warrants the prescription of systemic antibiotics, although it may not be necessary for the patient to complete the full course of antibiotics.16 Incision and drainage must be timed correctly otherwise it produces misery for the patient because it is painful and, wrongly timed, produces no great benefit. However, correctly timed, a collection of pus can be drained allowing a dramatic improvement.

When planning incision and drainage it is important to take care to consider the local anatomical structures, particularly the mental and infraorbital nerves. These are vulnerable to both the incision and also the expansion of the tissues to achieve drainage. Bearing in mind that this procedure is not pleasant for the patient, the choice of anaesthesia and information given in the consent process are crucial choices. Remember the extent of the anaesthesia may well be extremely limited and the (necessary) expansion of the tissues to ensure proper drainage can be very painful. Equally, planning the anaesthetic approach for incision and drainage is important. If a local anaesthetic needle is inserted right through the middle of a collection of pus, that abscess may be spread.

The management of malignant disease

The key factor in the management of a lesion that might be malignant is to recognise one's limitations and if in doubt refer early for a specialist opinion. The patient's consent is required for any referral to secondary care, and in order to obtain a valid consent it is necessary to discuss the differential diagnosis with the patient and the importance of attending any appointment offered. When writing a referral letter it is preferable to provide as much information as possible to the specialist. This ensures a correct decision being made about the urgency of the proposed appointment. In general terms, even if you are extremely experienced in carrying out biopsies of potentially malignant lesions and you have contemporary storage and transport media, most consultant surgeons like to see the extent of the whole lesion themselves so that they can select a representative sample for analysis. With advancing histopathology techniques in secondary care, which can have a significant effect on both the diagnosis and subsequent management of a lesion, it would be prudent not to compromise the patient's care by delaying a referral while waiting for a suboptimal biopsy specimen to be examined and reported.

Occasionally, a socket does not heal normally following an extraction. It is important to maintain a high index of suspicion when considering non-healing sockets.

Trauma

Primary care practitioners are regularly called upon to provide first aid and definitive management of localised dental trauma, including subluxed and avulsed teeth. Ideally each practitioner should keep a weather eye on changing protocols developed from regular reviews of the literature. Trauma cases are the bread and butter of personal injury lawyers, so it is therefore invaluable to have made detailed and accurate notes of the clinical findings, both at the time of the first involvement and at subsequent reviews. Appropriate photographs and radiographs make report writing, particularly in relation to prognosis, much more straightforward.

Any dental trauma case must have some element of head injury assessment documented, and an early referral made if there is any possibility of a significant head injury requiring medical advice. As with any dental procedure, competence is the key. Every practitioner dealing with trauma patients ought to be able to carry out an initial assessment and make a referral to a local accident and emergency department if there are any concerns.

Be suspicious of a more serious injury when examining a patient following a traumatic event. If in doubt about the possibility of a fractured mandible or maxilla, seek advice from a local specialist. It is particularly important to examine the condyles of a child who has landed on their mandible. A review of the current occlusion and palpation of the condyles should be documented in the records, noting whether there is any sign of swelling, tenderness or limitation of movement of the mandible. In a child or young adult, an undetected fractured condyle can seriously interfere with the growth centre and lead to significant facial asymmetry and malocclusion. If an opportunity to identify and manage the injury was missed, it would difficult to defend a claim in negligence in the absence of detailed records and a referral to a specialist.

Lacerations to the soft tissues should be managed carefully, with proper debridement and closure in layers. If there is any doubt about the complexity of the reconstruction, simply clean the wound and arrest bleeding with some simple interrupted sutures and refer the patient to a local specialist. A prudent practitioner will explore any laceration gently in order to exclude the possibility of a retained foreign body, for example the crown of a fractured tooth.

CONCLUSION

When minor oral surgery is contemplated and/or necessary in order to manage a patient in pain, it is incumbent on the practitioner to reflect, both on their own limitations and equipment.

- Are you adequately equipped, prepared (and supported) to carry through the procedure that has been proposed, and can you deal with any complications that might arise during the surgery?
- If not, is the patient aware and have they made a positive choice to have treatment, knowing that it may be complicated? In other words, has an adequate consent been obtained from the patient?
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