



Mohammed M Dungarwalla

Edmund Bailey

Consent in Oral Surgery: a Guide for Clinicians

Abstract: The consent process remains a pillar of excellent clinical care. The changes in the law after the Montgomery ruling in 2015 has changed the shape of consent, and now, taking adequate consent can be extensive and sometimes confusing for clinicians and patients. Dentists are sometimes faced with the unenviable task of weighing up what patients should know versus what they want to know. This paper aims to describe the consent process for more common oral surgical procedures, helping clinicians to allow their patients to make informed decisions.

CPD/Clinical Relevance: To assist primary and secondary care clinicians in taking adequate consent for oral surgical procedures.
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Taking adequate consent before surgical intervention remains one of the foundations of good clinical practice; and is stipulated in the General Dental Council's (GDC's) document, *Standards for the Dental Team*.¹

The legal stance on consent has changed following the Montgomery ruling in 2015,^{2,3} when the appellant, Nadine Montgomery, was not warned of the risk of her child suffering from shoulder dystocia at the time of delivery.² The obstetrician argued that, although the risk of shoulder dystocia was high, the complications

associated with this risk were rare.

The obstetrician in question further went on to say that, if each patient was warned about the risks of normal vaginal delivery (including the death of the baby), then every mother would opt for a caesarean section.²

Unfortunately, the perception of 'adequate consent' remains a subjective process and, following the Montgomery vs Lanarkshire Health Board ruling, clinicians are mandated to warn patients of the risks to which they will attach significance (no matter how small of a probability these risks occurring may be).³ Specifically to oral surgery, some risks carry a small probability of occurring (eg mandibular fracture and nerve injury), yet their consequences may result in prolonged pain or neurosensory deficit, repeated review appointments, inpatient admission, further surgery, or long-term deleterious psychological consequences for the patient (discussed later).

This replaced the previously accepted practice of a clinician being judged by what his/her peers would do if presented with a similar situation. This once more drives the UK away from the culture

of medical paternalism (or 'doctor knows best') towards a culture of autonomy; and particularly in dentistry, carries the risk of alarming our patients through describing procedures in detail which they may not want to know about in such detail.

Consent can be either implied or expressed. Expressed consent can be given verbally or in writing, and many procedures in the dental setting are executed with verbal consent (eg taking a radiograph). Although not mandatory, written consent is considered good practice for invasive procedures (eg dental implant placement and surgical removal of a tooth).

The use of consent forms is an effective way to write down a proposed procedure, along with the associated benefits and risks of having the procedure carried out. Consent forms are commonplace in the hospital setting but, in the authors' experience, are not regularly used in primary care.

Although consent forms constitute a legal medical document and part of a patient's clinical documentation, they only form part of the consent process and should be used in conjunction with verbal discussions, contemporaneous

Mohammed M Dungarwalla, BDS(Hons), MSc, MFDS RCSEd, FHEA, Specialist Registrar and Academic Clinical Fellow in Oral Surgery (email: Mohammed.dungarwalla@nhs.net) and **Edmund Bailey**, BDS(Hons), MFDS RCSEd, MPhil, MOral Surg RCSEd, PGCert, FHEA, FDS RCSEd, Senior Clinical Lecturer/Honorary Consultant in Oral Surgery, Barts and The London School of Medicine and Dentistry, QMUL, The Royal London Dental Hospital, Turner Street, London, E1 1DE, UK.

clinical records and correspondence with other healthcare professionals.

Furthermore, consent forms may be the only record of a procedure, benefit or risk having been discussed with the patient, and it is often the only document which the patient can take a copy of immediately. It is therefore imperative that procedures, benefits and risks are written clearly on consent forms,⁴ while abbreviations and jargon terms are avoided at all costs. NHS FP17DC documents, which are used in primary care in England and Wales, do not constitute adequate consent documentation and should be used in conjunction with additional documentation.

A person can only give consent if he/she is deemed to have the capacity to understand and retain the information being provided, to weigh that up and then communicate any decision made to the professional. Making judgements about patient capacity is challenging and benefits from the opinions of two professionals (although not necessarily required).

The concept of shared decision-making is described within NICE guidelines and applies to all clinicians who provide NHS care.⁵ The premise of the guideline is to enable patients and healthcare professionals to work together through an explanation of all available treatment options, along with their risks and benefits, while respecting patient autonomy and ensuring care is tailored to each patient. Coulter and Collins' King's Fund document on shared decision-making further outlines that clinical expertise should be derived from three domains, which are:

1. The patient's clinical state and circumstances;
2. The available evidence; and
3. The patient's preferences.⁶

One of the emerging clinical challenges specific to dentistry and oral surgery is the decision to extract teeth in patients who are deemed high risk of developing medication-related osteonecrosis of the jaw (MRONJ). In these situations, it is prudent to preserve healthy dentition, and avoid extraction as far as possible while treating infection. It is in circumstances like these where shared decision-making is of the utmost importance, and input from the patient and other dental specialties using an evidence-base to manage a care-plan is essential.

This guide will aid the clinician in creating consent documentation and having verbal discussions using terminology, which is appropriate for minor oral surgery. Naturally, this will not be an exhaustive list as every case should be specific to the person being treated, but aims to outline some of the more common scenarios encountered in primary and secondary care and gives examples where specific risks are relevant.

Consent guidance for peri-radicular surgery and pre-prosthetic surgery is beyond the scope of this paper and will not be discussed further. However, many of the principles will apply to these disciplines. Moreover, the risks specific to sedation and general anaesthetic procedures will not be discussed.

Dental extractions

Name of procedure

As per the Royal College of Surgeons Local Safety Standards for Invasive Procedures (LocSSIPs) document, any tooth which is being extracted should be written in full on the consent form in addition to Palmer notation.⁷ For example:

1. Removal of upper left first molar tooth;
2. Removal of lower left third molar tooth (wisdom tooth);
3. Removal of upper right first deciduous (primary/milk) molar tooth.

Shorthand notation in isolation should be avoided (eg UL6, LL8 and URD).

Benefits

The purpose of the procedure should be written clearly. For example:

1. Alleviate pain;
2. Remove the source of infection;
3. Create space for orthodontic treatment.

Abbreviations and jargon should be avoided (eg mx of infection, resolve pulpitis, treat failing endo).

Risks

All oral surgical procedures carry the generic risks of pain, swelling, bleeding, bruising and infection. However, the clinician must ensure that each of these risks is qualified so that patients understand the gravity of what is being explained to them. Trismus is a risk associated mainly with mandibular procedures and results



Figure 1. This cropped panoramic radiograph demonstrates a large MOD restoration in the LR6. Elevation of the LR7 risks dislodging the restoration from the LR6.

from inflammation around the muscles of mastication, or due to development of a haematoma in the medial pterygoid muscle at the time of administering an inferior alveolar nerve block.

As pain remains a personal and subjective experience, it is worth asking patients the amount of discomfort they have experienced following previous dental extractions or conditions which predispose patients to experiencing disproportionate amounts of pain following surgery (eg fibromyalgia). Similarly, patients who have experienced dry socket following a previous extraction are at higher risk of developing the same complication again.

Furthermore, the risk of bleeding is relevant to every patient but carries greater significance to those who suffer from inherited or drug-induced coagulopathies, and thus patients should be warned appropriately, and this risk must be mitigated.

For teeth being extracted which are adjacent to heavily restored, crowned or severely mobile teeth, it is important to mention how the loss of restorations can affect the patient and what remedial treatment may be necessary (Figure 1).

The use of local anaesthetic is safe, but all clinicians should be aware of the complications associated with its use. These include failure of local anaesthetic, which includes postponing the procedure if adequate anaesthesia is not achieved (this is particularly true for patients who are being treated with acute infection or a 'hot pulp'). Furthermore, trismus (discussed earlier), persistent paraesthesia, adverse reaction and, rarely, fracture of the needle.

Syncope, tachycardia, palpitations and nausea are also commonly encountered during the procedure and



Figure 2. This cropped panoramic radiograph demonstrates the LR78 closing the space left by the previously extracted LR6. To maintain consistency and avoid confusion, the term 'lower right first standing molar' and 'lower right second standing molar' should be used.

may be a combination of local anaesthetic administration, along with anxiety about the planned procedure. Good pain management, reassurance, and appropriate anxiolysis (non-pharmacological and pharmacological) are imperative to minimize the incidence of these complications.

Additional procedures

The patient should be warned that a procedure may turn 'surgical'. This can be explained as a gum cut and use of a drill to remove bone followed by stitches in the gum (which are usually dissolvable). It is important to explain this *before* the procedure as it may transpire that patients would have preferred the procedure under sedation/general anaesthetic.

In these cases, it is important to mention how post-operative discomfort may temporarily affect eating, swallowing and mouth opening for a few days, particularly if there has been modest bone removal.

Retained deciduous molar teeth may be infra-occluded and ankylosed to the surrounding bone and will most certainly require a surgical approach for their removal. The patient should be warned about such a possibility.

Specific scenarios

Lower third molars

Lower third molars (L3Ms) are associated with inferior alveolar nerve (IAN) damage and lingual nerve damage.⁷ The mechanisms of injury are broad and, indeed, the neurosensory consequences for the patient can manifest as a diverse range of symptoms presenting over many years.

If patients are deemed to be at risk of IAN damage, as determined by two-dimensional imaging, then one may justify ordering three-dimensional imaging to determine the course of the IAN in relation to the roots of the L3M (this will usually be Cone-Beam Computed Tomography (CBCT) imaging). However, additional imaging does not reduce the risk of IAN damage peri-operatively.^{8,9}

Further three-dimensional imaging should only be requested if the clinician believes that there is a probability that the treatment course and outcome will be changed or modified based on the images produced by the investigation. Clinicians requesting these scans should have appropriate training in recognizing, when requesting, that a scan may be beneficial to a patient and should also have the facility to interpret the scans, if access to radiological reporting is not available. Courses aimed at clinicians for dento-alveolar CBCT interpretation are offered by several institutions in the UK.

When patients are warned about IAN damage, the consent process should discuss the risk of 'altered sensation to the lower lip (on that side), the chin, the lower teeth (on that side) and the part of gums surrounding the anterior teeth.' The patient should be warned that altered sensation can range from 'pins and needles, reduced sensation of touch, pain and numbness', which can be temporary or, more rarely, permanent.^{8,10} The incidence of inferior alveolar nerve injury following L3M surgery is reported as 1%–5% over 1–7 days, and 0.0%–0.9% after 6 months.¹¹

Lingual nerve damage during removal of third molar teeth may occur due to direct trauma, owing to its superficial course within the soft tissues adjacent to the lingual plate. Trauma from a handpiece, lingual retraction and intraneural anaesthetic administration are possible causes of lingual nerve damage. It is worth mentioning to patients that they may experience altered sensation to their tongue on one side, which can include loss of taste. As with IAN morbidity, lingual nerve damage can be temporary (up to 15% following third molar surgery), or more rarely permanent (0.3%–0.6% following third molar surgery).¹²

Exposed dentine on the distal aspect of lower second molars following

L3M removal may give symptoms of dentine hypersensitivity, and the patient should be appropriately warned about this complication, particularly where a significant amount of distal bone has already been lost.

Procedures requiring palatal flaps

Surgical removal of teeth involving exposure of the anterior palate may compromise the nasopalatine neurovascular bundle. Patients should be warned that they may experience altered sensation to the area of gingivae directly posterior to the upper central incisors. This risk similarly applies when a palatal flap is raised for an expose and bond procedure of palatally ectopic teeth.

Molar teeth

The notation of molar teeth must be consistent throughout consent documentation. This is more of a concern in secondary care where patients often see more than one clinician on their journey from initial assessment to the day of treatment. Where a patient has previously had a molar tooth extracted, and the space has closed, there may be misinterpretation and incorrect notation of which tooth is being alluded to (Figure 2). To avoid confusion and to reduce the risk of wrong site surgery greatly, clinicians should refer to molar teeth in all notes and correspondence according to their position in the arch. For example, 'extraction of the upper right first standing molar'. This clarification should also be used when referring patients to other providers.

Root fracture

Teeth which have been endodontically treated, with thin root morphology, with bulbous root apices and extreme curvatures, may be at higher risk of root fracture during their removal. Patients should be warned before removal, that retrieval of root apices may require a surgical approach and the associated risks with their retrieval due to their proximity with surrounding anatomy (Figure 3).

Oro-antral communication (OAC)

The proximity of the maxillary sinus to the maxillary dentition is often apparent on plain-film imaging. Communication



Figure 3. This cropped panoramic radiograph demonstrates the curved root morphology on the LL5. The root is at risk of fracture and its retrieval may involve raising a flap near the mental foramen.

between the mouth and sinus following the removal of upper molar and premolar teeth may occur following a routine extraction. If patients are deemed at risk of oro-antral communication, they should be warned appropriately. The term 'OAC' should be avoided on consent forms. More appropriate terminology includes: '*A communication/breach between the mouth and sinus airspace which may require further minor surgery.*'

For teeth which will create a sinus exposure peri-operatively due to their ectopic position in the maxilla, the patient should be pre-emptively warned regarding the closure of the sinus and the necessary post-operative regimen required to reduce the risk of sinus infection, including the need for further recall appointments.

Temporomandibular joint (TMJ) pain and dislocation

Procedures which are lengthy and involve excessive force on the mandibular bone may cause transient TMJ pain following the procedure. However, patients who have a history of temporomandibular disorders or joint hypermobility should be warned that there might be an exacerbation of their symptoms following a lengthy procedure, or even peri-operative dislocation. The use of mouth props inserted on the contralateral side of the surgical field can reduce the strain placed on the TMJ and myofascial musculature.

Mandibular fracture

Although this is a relatively uncommon risk, it is relevant to patients who are

undergoing extraction of a buried tooth in an otherwise edentulous and heavily resorbed mandible. Furthermore, removal of large cystic/pseudo-cystic lesions involving the mandible will entail a higher risk during their removal, and in the post-operative phase, if the patient chews with excessive force. Patients with such pathology should be referred to a secondary care setting for management.

Loss of alveolar bone height

Reduction of the alveolar ridge height and width is a normal physiological process following tooth extraction.¹³ Replacement options for spaces are variable, with the provision of dental implants increasing in popularity, and an estimated 130,000 implants being placed in the UK in 2012.¹⁴

The use of different socket preservation techniques is extensive, and a systematic review conducted by Balli *et al*¹⁵ determined that, from the literature available, the use of either deproteinized bovine bone and porcine collagen, or leukocyte-platelet-rich fibrin have shown some promise in preserving the alveolar ridge height post extraction.

Patients who are 'pre-implant' patients should be warned that loss of height, either due to bone removal or leaving the space, can affect future dental implant placement.

Fracture of the maxillary tuberosity

This is a known risk with upper third molars and upper lone-standing molars.¹⁶ Management includes removal of the entire tooth-tuberosity complex or abandoning the procedure and splinting the tissues securely for future elective surgical removal of the tooth.

Loss of denture retention

The extraction of teeth serving as denture abutments can affect the retention quality of partial dentures. If patients wear a removable partial denture, note should be made of teeth which are embraced by clasps or acrylic framework, and patients appropriately warned that they might notice a change in the denture fit, which may require the addition of clasps or, in some instances, construction of a new partial denture.

MRONJ/osteoradionecrosis (ORN) and delayed socket healing

Patients who are taking antiresorptive or antiangiogenic drugs are often at an increased risk of developing MRONJ. Identification of such patients is through a thorough medical history, which focuses on:

- Why the medication has been prescribed (eg osteoporosis, metastatic cancer);
- The type of drug;
- How often it is taken;
- How long it has been taken for;
- How it is administered (intravenously or orally); and
- Whether it is taken with concomitant immunosuppressant therapy.

Consent will involve informing the patient of the risk of MRONJ (ie a non-healing socket), the need for regular review, the need for further debridement or surgery, along with topical/oral/intravenous medications to treat the sequelae. The decision to perform an extraction or hard tissue procedure on a patient taking antiresorptive or antiangiogenic medication should not be taken lightly and, if in doubt, specialist opinion should be sought before embarking on such treatment.

Patients who have previously received radiotherapy to the maxillofacial/salivary/tonsillar region may be at higher risk of developing ORN. As above, a thorough history is required to find out specifically the radiotherapy fields and relative dose to the jaws. If in doubt, a specialist opinion should be sought, and aggressive conservative management instigated. Patients should be warned about the risk of non-healing, which may require further surgical intervention.

Prevention of such sequelae is via thorough dental assessment before commencing antiresorptive/antiangiogenic medication and/or radiotherapy, and extraction of teeth which are of dubious prognosis.

Soft tissue biopsy

Name of procedure

For procedures where a biopsy is proposed, this should be specified



Figure 4. Removal of this lower lip lump required access via the lower labial mucosa. The mental nerve runs superficially within these tissues, and the risk of damage is reduced through blunt dissection of the tissues.



Figure 5. This speckled lesion with no evidence of dysplastic change was under review for several years. The vigilant patient noticed a change in the way the lesion felt. A repeat biopsy of the area was performed based on previous clinical photographs and the patient's concern. Interestingly, after two separate biopsies, there was no evidence of dysplastic change.

on the consent form and whether it is incisional or excisional. For example:

'Incisional biopsy (sample) of white patch in the left cheek'.

Terms including abbreviations,

eg, 'bx' (biopsy), 'BM' (buccal mucosa), 'L' (left-hand side) should be avoided.

It is good practice to use a diagram to show the exact position of the lesion in question.

Benefits

Many biopsies are taken to aid the clinician in confirming a diagnosis, and this should be made clear on the form. Other soft tissue lesions are removed because they may be irritating the patient during function or are in the aesthetic zone. Similarly, this should be stated. For example:

'To confirm the diagnosis'.

'To remove lump which catches during eating'.

Risks

As discussed above with extractions, soft tissue surgery carries the generic risk of pain, swelling, bleeding and infection. However, these risks should be qualified according to the nature of the procedure.

Specific scenarios

Biopsies of the tongue

Procedures involving the tongue can significantly hinder swallowing, eating and speech. Patients should be appropriately warned about this risk, especially if their occupation requires frequent verbal communication. The tongue has a remarkable capacity for healing due to its excellent blood supply.

Biopsies at the gingival margin

Biopsies of lesions at the gingival margin will be noticeable if implicated within the aesthetic zone. Patients should be warned about recession or the 'tooth looking longer' and post-operative sensitivity following biopsy.

Biopsies of the hard palate

Biopsies of the hard palate are often not amenable to primary closure and are left to granulate accordingly. The patient should be warned about this and the discomfort to expect post-operatively.

The use of cover plates and dressing materials may be indicated in extensive surgical fields to manage post-operative discomfort. Cover plates should be designed in conjunction with a dental

technician or maxillofacial prosthetist, who has had an opportunity to meet the patient. The design should consider how much palatal coverage is necessary, which teeth will act as retentive units (factoring the restorative status of these teeth), and the periodontal health of the existing dentition which may be affected by the design of the prosthesis.

Dressing materials (eg Coe-Pak™) can be prepared and applied immediately following surgery, which may help alleviate post-operative discomfort. However, there are concerns that some materials can exert a cytotoxic effect if left *in situ* for a long period of time, and if used inappropriately can act as a plaque trap and significantly hinder periodontal health.¹⁷

Mucocoeles

Mucocoeles commonly present in the lower labial mucosa as painless swellings following trauma to the area. Their removal involves removal of the lump along with the offending minor salivary gland. Patients should be warned about their recurrence and the need for further removal should they recur.

Procedures involving the lower lip

Surgery of the lower lip may be necessary for a variety of reasons. The mental nerve travels superficially in the lower labial mucosa and can be located within the surgical site. Patients should be warned regarding altered sensation to this region following surgical intervention (Figure 4).

Procedures which cross the mucocutaneous junction will be visible, and the patient must be told about scarring and potential 'tightness' of the lower lip post-operatively.

Repeat biopsy

Some conditions may produce non-specific features on the histopathological examination for several reasons, including operator factors, inadequate storage medium use and unrepresentative sample area. Patients with such presentations should be warned that a repeat biopsy may be required if the diagnosis is inconclusive.

Patients under review for long-standing dysplastic change in the oral cavity occasionally warrant further biopsy of the suspicious area, particularly if there has



Figure 6. (a) This patient experienced recurrent episodes of pericoronitis from his lower left third molar. The pre-operative OPG demonstrated darkening over the root and a curvature of the distal root. (b) CBCT imaging was ordered demonstrating a curve in the distal root, loss of cortication of the inferior dental canal and minor narrowing (red arrow). A decision was made with the patient to perform a coronectomy of the LL8. (c) A post-operative radiograph taken after 2 months demonstrating the roots *in situ*. The patient maintained normal sensation of his lower lip and chin.

been a change in the appearance of the lesion (Figure 5).

Procedures involving the floor of the mouth

Biopsies from the floor of the mouth (including removal of salivary stones) can compromise the submandibular ducts. Patients should be warned regarding stricture formation, and the need for release of strictures if inadvertently damaged during the biopsy. Posteriorly, the lingual nerve travels through the floor of the mouth, and surgery in this site may cause lingual nerve damage.

Coronectomy

Coronectomy is a procedure used to manage high risk lower third molars, although its use has been described on other teeth.¹⁸ The goal of treatment is to reduce the risk of iatrogenic damage to the IAN peri-operatively (Figures 6a, b and c).¹⁹

The decision to perform a coronectomy is usually based on 'high-risk' features seen on plain film imaging, often supplemented with three-dimensional imaging of the area.

Name of procedure

The term 'coronectomy' should be explained, for example, 'intentional removal of the crown of the tooth and leaving the roots *in situ*'.

Benefits

If the reason for coronectomy is to reduce IAN damage, then this should be stated as:

'Reduce the risk of causing altered sensation to the lower lip and chin.'

Risks

Coronectomy will carry the generic surgical risks associated with any procedure. However, patients should be warned that the roots of the tooth are intentionally left *in situ*, and this may result in infection of these roots, which may require removal.

Furthermore, inadvertent mobilization of the roots peri-operatively may require their

immediate removal, and thus the risk of altered sensation to the lower lip and chin, as if the entire tooth was extracted, is restored.

The roots may migrate superiorly post-operatively, and thus patients should be warned that future removal of roots may be necessary, however, by this point they are often not in the proximity of the IAN.²⁰

Dental implants

Osseointegrated dental implants are a common treatment modality to replace missing teeth. Their versatility as single units, bridge abutments and denture retainers make them the treatment of choice in situations where alternative treatments may not be possible (eg rehabilitation post head and neck cancer surgery).

Name of procedure

The insertion of dental implants requires a surgical approach (ie soft tissue incision and bone surgery/ manipulation), and patients should be aware of this. Furthermore, the restoration of the implant is a separate procedure in itself (and not necessarily fitted by the clinician who has placed the implant) and thus will require its own consent process (not discussed in this paper). An example of such a term may be:

'Insertion of a dental implant into the lower jaw to replace the missing lower right first molar tooth'.

Benefits

The benefits of implant placement are numerous. However, examples may include:

- 'To improve function when chewing'*
- 'To improve smile appearance.'*
- 'To prevent lower denture from displacing when talking and eating.'*

Risks

The risks of implant dentistry are potentially extensive, and a large number of different systems carry their own benefits and disadvantages of which the clinician should be aware.

However, there is no evidence to suggest that one implant system confers any superiority over another.²¹ Patient selection is imperative, which must take into consideration the patient's smoking status, diabetic status, oral hygiene status and motivation to attend for regular dental check-ups, as these will have an impact on the outcome of treatment.²²

Although not a risk, the placement of implants will require several appointments, namely, to ascertain the patient's wishes and suitability for treatment, implant placement and soft tissue healing period, restoration manufacture, and fit, etc. Patients should be aware of the time-frame and be given a realistic end-point of when they may achieve the result for which they were hoping.

Furthermore, the implant itself will require regular maintenance (not including the restoration fitted onto it), ideally with the same clinician who placed it.

Other risks associated with the placement of implants include infection, failure of osseointegration, failure of the screw through fracture or loosening, failure of the cement retaining the restoration progressive marginal bone loss, oro-antral communication and oro-nasal communication.^{23,24}

Moreover, some tissues may require the need for xenograft (animal-derived) products which may require an additional appointment/healing period and may not be compatible with the personal beliefs of some patients.

In addition to the generic risks of surgery, implants placed directly into or near neurovascular bundles may cause neurosensory complications, resulting in long-lasting changes for the patient. The incidence of permanent nerve injury from the placement of dental implants ranges from 0%–40%.²⁵

Implants in the aesthetic zone should be placed in a way that the soft tissue profile is maintained in that area for a natural appearance. Unfortunately, this may not always be possible, and patients should be warned from the outset that it may not be practical to achieve such a result.

The existing lip-line and soft tissue quality should be documented and communicated with patients before implant placement, so that they are aware of what can be achieved.

Peri-implant diseases is an umbrella term which encompasses peri-implant mucositis and peri-implantitis. In peri-implant mucositis, only the peri-implant soft tissues are involved with no bony resorption, whereas in the latter, there is soft tissue inflammation in conjunction with bone resorption.²⁶ The treatment of these conditions remains controversial, and there is no agreed protocol established to treat either condition.²⁶ Patients should be warned, therefore, that loss of the implant is a risk should maintenance or treatment of peri-implant disease fail.

Conclusion

This paper has aimed to highlight some of the more common scenarios encountered within primary and secondary care settings. It is impossible to provide a list of every risk which may apply to patients, and this is a testament to the variety of conditions and individuals cared for by clinicians. It is only with the information that clinicians provide that patients can truly give valid, informed consent for the treatments proposed.

Compliance with Ethical Standards

Conflict of Interest: The authors declare that they have no conflict of interest.
Informed Consent: Informed consent was obtained from all individual participants included in the article.

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