

Management of acute dental problems: an *aide-mémoire* for referrals to oral and maxillofacial surgery

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Key points

Provides ways to improve communication between primary and secondary care and to optimise patient outcomes.

Helps to develop succinct handover methods for patient care.

Offers ways to improve general dental practitioner confidence in managing acute presentations of facial swelling or haemorrhage and develop handover skills.

Abstract

The acute management of a facial swelling is a core competency for the dental practitioner. Onward referral to secondary care for acutely unwell patients requires timely decisions, with the referrer's initial assessment often critical in later management. Oral and maxillofacial triage is essential to ensure appropriate care is provided in the appropriate environment. Acute swelling and haemorrhage referrals to secondary care are not a common, everyday occurrence in general dental practice; however, the ability to provide a sufficient and safe handover will improve patient outcomes and ensure timely transfer to appropriate care providers.

This article aims to provide the dental practitioner with insight into the oral and maxillofacial assessment of acute facial swellings and dental haemorrhage. The reader should be able to make an appropriate clinical assessment and communicate an effective referral to oral and maxillofacial care.

Introduction

General dental practitioners (GDPs) are highly experienced in clinical history taking, examination and treatment planning; however, the arrival of a patient with a facial swelling or haemorrhage can be an infrequent yet stressful encounter. It is important to remember, despite the urgency of intervention required for these patients, the basic principles of history taking and examination remain unchanged. Information gathering is critical to reaching a diagnosis and determining if management can be completed in the dental surgery, or, if an onward referral to secondary care is indicated. Referral of patients when and where appropriate is a core competence of the graduating dentist.¹

Referral to secondary care must be succinct, efficient and above all, appropriate. Oral and maxillofacial surgery (OMFS) departments can provide advice via telephone or same-day review of urgent cases if necessary. Secondary acute care environments are often busy units, providing inpatient, outpatient and emergency care simultaneously; therefore, emphasis must be placed on an accurate and concise handover of clinical details. It is important the referring dentist has completed a full history and clinical examination before contacting the department. Lack of examination can result in delay for patients accessing treatment.

This article will provide GDPs with an overview of the information required to make an acute referral to OMFS services and provide insight into why the necessary questions are asked.

The referral process

Key information must be at the dentist's disposal before making a referral. This will minimise time wastage and increase efficiency, both for the referring dentist and receiving clinician. In most cases, discussion and handover with the OMFS team can take less than five minutes by telephone. Although time pressures are experienced equally by both parties in their daily practice, professional and logical communication will avoid misinformation or understanding, aid clarity and permit the oral and maxillofacial clinician to take on board vital details. Handover of information is best communicated via the Situation, Background, Assessment and Recommendation (SBAR) approach, which encompasses the history, examination, treatment undertaken and concerns.

Utilising SBAR for an oral and maxillofacial referral

SBAR is a frequently utilised method of communication by medical colleagues.² It is a structured handover of information between individuals, has been used successfully in many healthcare settings³ and is frequently practised within OMFS units.

Aims

- To improve communication between primary and secondary care
- To optimise patient outcomes
- To develop succinct handover methods for patient care
- To improve GDP confidence in managing acute presentations of facial swelling or haemorrhage and develop handover skills.

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SBAR supports a focused and concise patient handover. The result is effective communication, reducing the likelihood for errors and repetition and allows the receiving clinician to gain concise and pertinent information. It is commonly used in patient transfer processes between different disciplines, for example, between medical or surgical specialties and is a useful tool between primary and secondary care. Arrangements for many patients will begin before their arrival at the hospital; therefore, thorough clinical assessment and a clear referral will be crucial to providing treatment.

S – situation

- Provide your name, your job role and the unit/practice you are calling from
- State reason for contact, for example, advice/opinion/hope to refer
- Outline your concern for the patient
- Provide patient details.

For example: ‘hello, my name is [name]. I’m a GDP based at [practice name] in [location]. I’m hoping to refer/gain advice about referring a [age]-year-old patient with a facial swelling/bleeding socket to your department.’

This opening statement will highlight your reason for contact with the OMFS department, provide the presenting complaint and initiate the communication process. It will also allow the receiving clinician to tailor their questions to the situation.

Dentist details

All referrals must come from the treating GDP and not other members of the practice, such as the practice receptionist. Stating your name and role not only provides the unit with knowledge of with whom they are speaking but develops initial rapport. Expect to be asked for your practice name, location and telephone number, as the receiving clinician may need to discuss the case and make an appropriate plan, before returning your call.

Patient details

Although there can be limitations due to COVID-19 pandemic restrictions on practice, it remains most appropriate to have the patient present in the dental surgery at the time of referral, ensuring accurate information and to facilitate appropriate care. Dentists will be familiar with the inconsistencies often found between a patient’s own descriptions of their issue, versus their true clinical presentation; a facial swelling

or haemorrhage is no different and an ‘eyes-on’ approach is key. If you have concerns and feel it may require an acute referral to OMFS, the patient should not leave the practice until referral has been accepted and safe transfer agreed. The unit will not take responsibility for the patient until they have arrived on hospital premises.

Patient identifiers should be stated as follows: name, age, NHS/CHI number if available and sex. The patient’s contact telephone number, ideally a mobile, should also be provided if available. Occasionally, patients who are accepted for treatment fail to attend secondary care for various reasons. This can be cause for concern, especially in cases of potential airway risk; a means for direct patient communication may prove invaluable.

B – background

- Reason for problem, for example, grossly carious tooth/recent dental extraction
- Medical history, medications and allergies
- Social history and parental responsibility
- Treatment history and treatment so far, for example, extraction/antibiotics/diagnostic results.

For example: ‘Mr X has a grossly carious lower left first molar but has not been seen for many years. He’s a well-controlled asthmatic and insulin-controlled diabetic. He is taking inhalers and is on insulin. Unfortunately, he reports his diabetic control is poor. He is a non-smoker, takes no alcohol and lives alone but has family nearby who can assist with transport to hospital. He hasn’t been prescribed any antibiotics yet and I’m unable to extract the tooth today because of reduced mouth opening.’

Medical history

A confirmed up-to-date medical history is critical to the referral. This includes past and current medical conditions, previous hospital admissions, medications (including anticoagulant or immune modulatory drugs) and, their allergy status. Knowing if their conditions, such as asthma or diabetes, are controlled can be a useful indicator for the receiving clinician to signpost treatment, that is, if the patient should be seen in an outpatient or accident and emergency setting, as they may require medical input prior to OMFS providing treatment. As patients in extremis often accidentally exceed recommended painkiller dosages and are frequently prescribed analgesia upon arrival to secondary care, it is

useful to communicate analgesia usage over the preceding 24–48 hours. Patients taking in excess of the recommended daily limits may require assessment by a medical professional upon arrival to the emergency department. Additionally, in relation to COVID-19, shielding status, COVID-19 symptoms or close contact information must be communicated.

Social history

It is important to record the patient’s social history. Smoking status and alcohol intake can influence prescribing protocols upon admission. Alcohol withdrawal can be associated with patient morbidity and there are strict guidance protocols in place to prevent patient deterioration. Patients with higher alcohol intake are often more prone to bleeding issues and thus treatment in the emergency department may be more appropriate rather than a direct outpatient department referral. Substance misuse, including involvement in a methadone programme, should be highlighted. These patients will likely require input from their local pharmacy to confirm dose and frequency; information which can only be provided during working hours.

Parental or dependant responsibility

Parental responsibility of paediatric patients should also be communicated. In ideal circumstances, a parent should attend alone with the sick child, having arranged care for any other siblings. It is also helpful if the adult chaperone has legal responsibility to consent. Similarly, unwell patients who provide care for dependants, such as disabled relatives, may be required to put care into place. However, it should be stressed that they should not delay care if acutely unwell, especially with airway concerns.

Adult with incapacity

In some cases, the patient will not have capacity to consent to their treatment; therefore, having details of their welfare guardian to pass onto the receiving team will be valuable and prevent delay in their care. If not available, notify the team of any incapacity concerns you may have.

Procedure history

If treatment was undertaken before current patient presentation, this must be communicated, for example, prescription of antibiotics/extraction of tooth (simple/surgical), incision and drainage, packing and suturing. It is also key to indicate if you have managed to complete any contemporaneous local measures and how

much local anaesthetic was administered. This will avoid local anaesthetic overdose should further OMFS care be required.

A – assessment

General clinical examination

- Vital signs
- Dental assessment – key teeth involved, for example, grossly carious 46
- Investigations/radiographic assessment
- Treatment carried out.

General clinical examination

General evaluation during examination is crucial to inform the receiver of the situation. The underlying reason for the clinical presentation must be considered.

Consider the patient from when they walk through the surgery door: do they appear well?

Similar to medical emergencies,³ assess the patient with the Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach.⁴ Airway assessment is the first concern: is the airway patent? Is the patient exhibiting voice changes, or are they struggling to breathe or swallow? Potential obstructions and ‘red flag signs’ must be identified. Following completion of an airway assessment, further assessment of vital signs can be undertaken.

Vital signs

As a result of the COVID-19 pandemic, dental practices may be better equipped than previously to provide basic observations on vital signs. These include temperature, blood pressure, respiratory rate, heart rate and oxygen saturations. Continuing to utilise the ABCDE approach, recording patient vital signs can alert the practitioner to any derangement from baseline and provide insight into urgency of presentation. Breathing (symmetry, respiratory rate, oxygen saturations), circulation (colour, perfusion, pulse rate, blood pressure), disability (alert status) and exposure (temperature, glucose and blood sugar levels, nausea/vomiting) can be evaluated.⁵ Practices undertaking sedation will often have a pulse oximeter and blood pressure cuff in the practice or in their medical emergency kit. However, vital sign documentation in general practice is only recommended where facilities allow. Within the hospital environment, patient physiological parameters are continually assessed and recorded in the form of an ‘early warning score’. The aim is to highlight those patients requiring escalation and possible clinical intervention to prevent deterioration.⁶

As standard, a temperature greater than 38 °C can indicate a patient with underlying infection, although a raised temperature alone is not an indication for referral.⁷

Recording when the patient last ate and drank will also provide their fasting status if a general anaesthetic is required for treatment. You may be advised to inform the patient to remain fasted until they are assessed by secondary care; this includes avoiding liquids such as juice or milk.

Dental examination

Two acute presentations are discussed. Facial swellings and haemorrhage.

Facial swelling: extra-oral features

Location, size and extent are useful pieces of information. If unable to accurately assess the size of a facial swelling in centimetres, what could the swelling be compared to? Coins, sports balls and fruits are often helpful for comparison. Is

the swelling firm or fluctuant? How does the overlying skin appear – is there any erythema or induration? Is there a discharging sinus on the skin? The patient in Figure 1 has a large right-sided submandibular swelling with associated trismus. It is firm and shows signs of induration. This abscess required drainage under general anaesthetic with extraction of the associated tooth (46).

Facial swelling: fascial spaces

Understanding the fascial space anatomy will allow you to identify the potential spaces occupied by the spread of infection (Fig. 2).

Acute or potential airway compromise is a grave concern requiring immediate action. The following points highlight red flag symptoms requiring assessment:

- What is the extent of the swelling?
- Has swelling tracked to the eye causing eye closure/double vision/pain on eye movement?



Fig. 1 Submandibular dental abscess

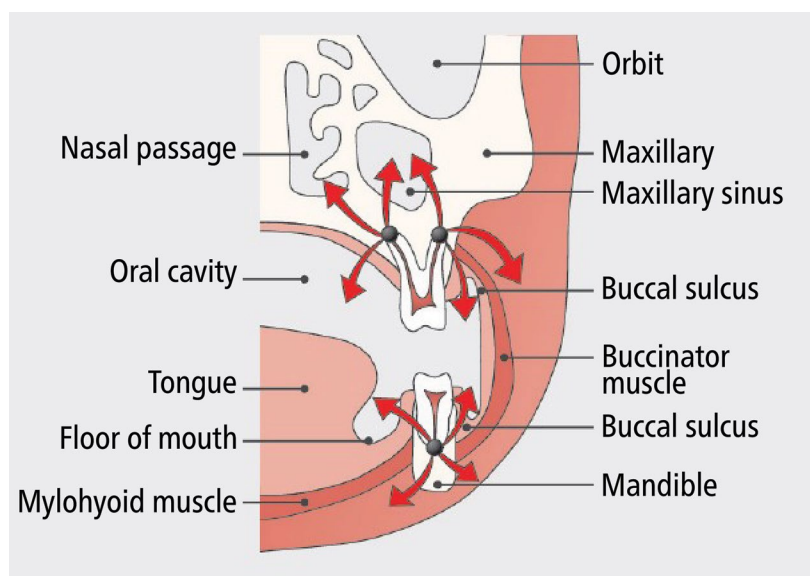


Fig. 2 Pattern of spread of dental infection in the oral cavity. Reproduced with permission from Robertson et al., ‘Management of severe acute dental infections’, BMJ, 2015, BMA⁹

- Is the swelling crossing the midline in the submandibular or submental area?
- Is the lower border of the mandible palpable?
- Does the patient have true trismus?
- Can the patient swallow their own saliva/ are they visibly drooling?
- Is the floor of mouth raised?
- Is the uvula deviated?
- Is the patient experiencing dysphonia (voice change)?

If you are unable to palpate the border of the mandible due to gross swelling, this often indicates the infection is located in the submandibular space rather than the buccal space alone. Consider, is trismus due to infection causing spasm of the masseter muscle or could reduced opening be related to pain with the patient 'guarding' against opening? A good measurement of mouth opening is how many fingers can fit between the patient's incisors. On average, unrestricted mouth opening is usually 35 mm or greater.⁸ Note, difficulty swallowing is different to the patient who is having 'pain on swallowing' – many patients will state it is sore to swallow if their oral intake has been limited in the days preceding presentation or if they suffering from lymphadenopathy.

The voice change red flag symptom is often referred to as 'hot potato voice'. It could mean the infection has spread to the parapharyngeal space and is affecting the vocal cords. Incidentally, it could indicate a tonsil quinsy if a dental source is not found – this would be managed by the Ear, Nose and Throat speciality. Submandibular, submasseteric and parapharyngeal swellings are of higher risk to airway compromise and thus, secondary assessment in the accident and emergency setting with an established pathway to acute care and equipment is more appropriate than within the outpatient department.

Facial swelling: intra-oral features

If the source tooth can be identified, is there an area of intra-oral swelling or sinus adjacent? Can this/could this be drained in dental practice with local measures? If yes, in the absence of any systemic or extra-oral concerns, dental intervention should be undertaken without delay – incision and drainage, extraction, or pulp extirpation with drainage through the canal access. Signs such as a raised, firm floor of mouth and deviation of the uvula indicate potential airway compromise and warrant further review in secondary care. You should also ask the patient to protrude their tongue and demonstrate movement side to side. Limited

movement of the tongue could indicate infection in the parapharyngeal or 'danger' zones.

Haemorrhage

When assessing the bleeding patient, a systematic approach to locate the source of the bleed is warranted. Suction may be required to remove the large jelly-like clot which can form intra-orally and obscure examination. It may also help to irrigate the socket with saline or water to allow direct visualisation of the bleeding source. Apply a damp swab directly with firm, continuous pressure as a first intervention to achieve haemostasis. If the patient cannot apply firm pressure biting onto the swab, pressure should be applied by the dentist or nurse to stem the bleed.

Once you have haemostatic measures in place, this should permit taking a history from the patient. Key questions to ask include those relating to the source of bleeding: has there been a recent extraction? Is there a laceration or other signs of trauma present? It can be difficult to determine the volume of blood lost, but as previously discussed, an assessment of the whole patient using the ABCDE approach will identify if there are systemic signs of blood loss.

If there is a failure of haemostasis following pressure alone, immediately consider the use of local anaesthetic with adrenaline to aid control of bleeding. Packing and suturing the area with a resorbable haemostat, such as oxidised cellulose or fibrin/collagen foam, should also be carried out. Other haemostatic aids, such as diathermy or bone wax, could be useful if available in practice. If these manoeuvres fail to deliver resolution within a sensible time frame, clinicians should prepare to call secondary care for advice; however, if there is any concern regarding the volume of blood loss, it may be appropriate to call sooner.

Investigations and radiographic assessment

Special investigations, especially radiographs, can be very useful. If these are electronic, email these to the OMFS department or provide the patient with the hard copy. A post-extraction radiograph is helpful in cases of haemorrhage following extraction to ascertain if the entire tooth has been removed.

Treatment attempted

If treatment has been attempted, confirm what was achieved and if treatment cannot be undertaken, provide a reasonable explanation as to why. For example, restricted mouth opening making access for packing and suturing unattainable.

Details of local anaesthetic administration and previous antibiotic use should be mentioned.

R – recommendation

- Explain your expectations or recommended treatment
- Confirm, if referral is accepted, the next steps, expected timeframe and how the patient will be travelling.

To conclude, what is your recommendation for the patient, that is, what would you like to happen? If you feel that the situation cannot be adequately managed in the primary care setting, make the receiving team aware. This will elicit a discussion between both parties, with some cases being identified as being suitable for advice-only, or to negotiate transfer of care. If the OMFS team provide advice, repeat this back to them to confirm a plan.

Confirmation

If the patient has been accepted for transfer of care to secondary care, confirm the travel arrangements. Ultimately, this depends on the clinical presentation. If there is an immediate airway risk or a sign of respiratory distress, the practice should call the emergency services for ambulance transport as it may necessitate 'blue lighting' the patient to engage in immediate pre-hospital care. In most cases, it should be suitable for the patient to make their own arrangements for travel, in which case, provide an estimated time of arrival. Emphasis should be placed on arriving as soon as possible, as a matter of urgency. A location will be provided for where the patient is to present – this may be accident and emergency, the outpatient department or a specific ward, based on the information discussed during the referral.

A *pro forma* of the questions often asked by the OMFS team is provided in Appendix 1. Although it may not be possible to answer every question immediately during a telephone referral, it is hoped that the points mentioned will assist in the handover of vital information.

Treatment outcome

If accepted for acute referral, there are several possible outcomes for the patient.

The first is that they will receive immediate treatment in either accident or emergency or outpatients and be discharged home. The referring dentist should receive a discharge

letter stating the treatment undertaken, any prescription which was given and if follow-up is required either by the OMFS team or by the referrer.

The second involves admission following a procedure completed under local anaesthetic either in accident or emergency or an outpatient department. This may be required if the patient's inflammatory markers are too high, suggesting the infection will not subside with local treatment and oral antibiotics alone, or for monitoring should there be additional concerns. Often, dependent on medical history, those with co-morbidities or severe infections are admitted for 24–48 hours for intravenous antibiotics, fluids and clinical observations.

Thirdly, treatment may be undertaken under general anaesthetic. The patient is admitted to the ward, or, *in extremis*, taken directly to theatre for intubation and intra-oral ± extra-oral drainage. Plastic corrugated drains are placed *in situ* to encourage further drainage post-operatively, usually remaining for 24 hours minimum. In these cases, the patient will remain on the ward for several days to continue observation and intravenous antibiotics. Some severe cases may warrant a return to theatre for further wash out, particularly if the patient is not making the expected progress. They will usually receive follow-up with the maxillofacial team following discharge.

Conclusion

The authors hope that the information in this article will prove useful to GDPs when assessing the patient attending with a facial swelling or haemorrhage. We hope this article has provided a methodical approach to assessment, examination and completion of a telephone referral and aids future patient transfer and management.

Ethics declaration

The authors declare no conflicts of interest.

Patient consent was gained for medical photography in line with NHS Lanarkshire medical photography consent guidelines. The patient was provided with a copy of the pre-publication manuscript. The participant provided written consent to publish.

Author contributions

Rachel Cruickshank: manuscript writing and editing and referencing for publication. Aine McDonnell and Fiona Wright: manuscript writing and editing. All authors had a similar level of input.

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Patient demographics

Name: _____ DOB: _____ Age: _____ F M

Medical History

Medical conditions: _____

Medical conditions well controlled: Y N

Medications: _____

Anticoagulant use: Y N

Immune-modulatory drugs: Y N

Allergies: Y N _____

Social History

Smoker: Y N Amount: _____

Escort req: Y N

Alcohol: Y N Units: _____

Interpreter: Y N

Rec.drug use: Y N Details: _____

Care requirements: Y N

Vital signs

HR: _____ Temperature: _____ Resp. Rate: _____ O₂ sats: _____ BP: _____

Facial Swelling

Diagnosis: _____

Source tooth: _____

Fascial Space: _____

Haemorrhage

Site: _____

Source (circle): Soft Tissue Bone

Extra-Oral

Airway concern: Y N

Drooling Y N

Swallow affected: Y N

Spreading infection: Y N

Lower border mandible palpable: Y N

Extending to eye: Y N

Double vision: Y N

Eye closing: Y N

Feeling: Hot / Firm / Fluctuant

Skin changes/erythema/induration: Y N

Intra-Oral

Intra-oral area to drain: Y N

Floor of mouth: Raised Firm No concern

Uvula deviation: Y N

Treatment attempted: _____

ABx use: _____ LA (type/volume/site): _____

Investigations

Radiographs: Y N

Pulp testing: Y N

Fasted Status

Last ate: _____

Last drank: _____

Travel

Transport: _____

ETA: _____

Appendix 1 Pro forma for OMFS referrals