Essentials of Medical History-Taking in Dental Patients

Abstract: The starting point in the assessment and management of any patient is dependent on good history-taking. The main parts of the history-taking process well known to practitioners are the presenting complaint, the history of the presenting complaint and the current and past medical history. This paper concentrates on those aspects of the process that are particularly important to dental practitioners.

Clinical Relevance: The cornerstone of safe and effective patient management lies with the history. This paper describes various aspects of history-taking and highlights important areas.

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The main parts of a patient history are well established. It is important that practitioners follow a recognized systematic scheme of enquiry to minimize the risk of missing important information.

All dental practitioners are familiar with the main components of the history-taking process. The purpose of this paper is to revise those areas and add some context to some of the more important aspects and provide updates where appropriate.

The main components of a patient history

Presenting complaint

The presenting complaint may best be expressed in the patient’s own words. The information presented can then be summarized by the clinician.

History of presenting complaint

A chronological approach should be used. As a minimum, the history of a presenting complaint should include the following:

- When the condition/problem first started;
- The overall duration and progression of the condition, including whether it is episodic or constant;
- The nature and timing of any symptoms (see below);
- Details of any systemic signs or symptoms (such as fever);
- The success or otherwise of previous treatments;
- Previous practitioners who have been consulted regarding the same or related condition(s).

In dental practice, the presenting complaint is often pain. A generic scheme of questions to assess the nature and severity of a patient’s pain is shown as follows:

- Site of pain – it is useful to ask the patient to point with one finger to where the pain is worst;
- Character, eg sharp, ache, throbbing;
- Ask about severity – on a scale of 1–10, 10 being the most severe – how bad is it?;
- Does the pain radiate anywhere else?;
- Timing – was the onset sudden or gradual? – how long has the pain been present? – is it continuous or intermittent? – worse at any particular time of day?;
- What makes the pain better or worse (including the use and type of medication);
- Is the patient aware of any relevant preceding event, including previous similar episodes?;
- Any associated symptoms, for example bad taste?

Past medical history

Generic questioning regarding major systems such as the cardiovascular or respiratory systems is often the way practitioners start obtaining a medical history. Questioning should then focus on specific disorders, such as asthma or other respiratory disorders, diabetes mellitus, epilepsy, hypertension or other cardiovascular problems (stroke, myocardial infarction, angina), hepatitis or jaundice. Positive responses should be followed-up by an assessment of the severity of the disorder, treatments used and their efficacy. Previous problems with the arrest of haemorrhage are worth specific enquiry. Table 1 highlights situations where the arrest of haemorrhage may be affected and implications for management.

The past medical history is an essential component of risk assessment for the likelihood of a patient experiencing a medical emergency. The Resuscitation Council (UK) provide authoritative and up-to-date advice regarding the management of medical emergencies in dentistry.

It is essential to ask about any known allergies and, if a positive response is obtained, to enquire about the nature of such

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at the end of this process, patients should be allocated an American Society of Anesthesiologists (ASA) classification:

- **ASA I** Healthy
- **ASA II** Mild systemic disease – No functional limitation
- **ASA III** Severe systemic disease – Definite functional limitation
- **ASA IV** Severe disease – Constant threat to life
- **ASA V** Moribund
- **ASA VI** Brain dead patient whose organs are to be removed for donor purposes.

This categorization is referred to in some protocols and also facilitates communication between clinicians.

### Specific situations and management considerations

#### Pregnancy

Pregnant patients require special considerations in their management. Some of the more important ones are summarized as:

- The second trimester is the optimum time for treatment;
- Best where possible to avoid prescribing drugs;
- If prescriptions are necessary, check in the British National Formulary (BNF);
- Drugs taken by mother while breast-feeding can be transferred in some cases to breast milk – check in the BNF;
- Local anaesthetic containing adrenaline is acceptable;
- Patients who faint or feel faint should be treated in the left lateral position to avoid pressure on the inferior vena cava and minimize risk of supine hypotension syndrome;
- Intravenous sedation must be avoided in the first trimester and the last month of the third trimester and ideally best avoided completely;
- Nitrous oxide can interfere with vitamin B12 and folate metabolism – should not be used in first trimester – if used, exposure should be less than 30 minutes, use 50% oxygen and avoid repeated exposure.

#### Sickle cell anaemia

Sickle cell anaemia is an inherited haemoglobinopathy found in individuals of African, Asian and Mediterranean origin. In situations of lowered oxygen tension the abnormal haemoglobin results in red blood cells becoming sickle-shaped, leading to increased blood viscosity and capillary thrombosis. It can present either as a sickle cell trait (heterozygous) or sickle cell anaemia itself ( homozygous).

#### Thalassaemias

Thalassaemias are inherited as autosomal recessive disorders in which there is decreased synthesis of either alpha or beta globin chains. This allows less normal haemoglobin to be produced. Seen in Mediterranean races, patients with

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<table>
<thead>
<tr>
<th>Disorder</th>
<th>Relevance to Patient Management</th>
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| **Disorders of haemostasis:** Thrombocytopaenia | Liaise with haematologist. Full blood count needed.  
Platelet levels >50 x 10^9/L – advisable to treat in hospital setting.  
<50 x 10^9/L will require platelet transfusion.  
Local haemostatic measures post-op:  
– DDAVP, tranexamic acid may be required.  
– No NSAIDs should be prescribed. |
| **Haemophilia A, B, von Willebrand's Disease** | Liaise with haematologist.  
Factor VIII levels between 50–70% are required prior to treatment – may need factor VIII supplementation/DDAVP, tranexamic acid may be needed.  
Factor IX replacement may be required in haemophilia B. Tranexamic acid may be needed.  
Treat in hospital. May require in-patient management.  
Avoid inferior dental nerve blocks if possible. |
| **Anticoagulant therapy** | New oral anticoagulants such as dabigatran do not increase INR. Patients taking warfarin with INR ≤4 ok for treatment, if ≥4 refer back to haematology clinic for adjustment.  
Dual antiplatelet therapy treat in hospital – usually one stopped (after consultation).  
Local haemostatic measures post-procedure.  
Do not use NSAIDs. |

Table 1. Disorders of haemostasis and implications for patient management.
Concurrent drug therapy can impact upon oro- about inhaled or topical medicines as many preparations. In addition, it is pertinent to ask homeopathic or other over-the–counter medications and drugs. Well known examples of drugs that are highly relevant in the context of dental treatment include anticoagulants, such as warfarin and dabigatran and bisphosphonates. Osteonecrosis is a recognized complication of bisphosphonate treatment. The condition is defined as the presence of exposed bone for longer than 8 weeks in the absence of radiotherapy treatment but in a patient who is using bisphosphonates. It is diagnosed clinically but local malignancy must be excluded. The bisphosphonates are a group of drugs which include alendronic acid and risedronate sodium. These drugs become adsorbed onto hydroxyapatite crystals thereby slowing their rate of dissolution and growth. Such drugs have been used in the management of osteoporosis in post-menopausal women, patients with bony metastases and the hypercalcaemia of malignancy.

Clearly, it is preferable to avoid dental extractions if possible in patients taking bisphosphonates. Local guidelines should be consulted when extractions are unavoidable in these patients. Established cases of osteonecrosis require analgesia, and long-term antibiotic therapy and topical antiseptic therapy if infected. Occasionally, careful local debridement may be indicated to remove limited bony sequestra. Risk factors that increase the possibility of osteonecrosis developing include local infection, steroid use, trauma, chemotherapy and periodontal disease.

As well as effects on bone, it is thought that bisphosphonates might have toxic effects on soft tissues around an extraction site, impairing the function of vascular and epithelial cells.

‘Recreational’ drugs

The use of drugs of abuse is common and dentists should have a working knowledge of the implications for patients who say that they are using these. Cannabis has a sympathomimetic action and in theory could exacerbate the systemic effects of adrenaline in dental local anaesthetics. Heroin and methadone are opioid drugs, the latter being used in rehabilitation programmes. Oral methadone has a high sugar content that can cause rampant caries. Heroin can cause thrombocytopaenia. Some of those addicted to heroin have a low threshold for pain. The drug also interacts with preparations that dentists may prescribe. The absorption of paracetamol and orally administered diazepam is delayed and reduced due to delayed gastric emptying. Carbamazepine reduces serum methadone levels and methadone increases the effects of tricyclic antidepressants.

Amphetamines and ecstasy may produce thrombocytopaenia. Concomitant use with monoaminooxidase inhibitors and tricyclic antidepressants can precipitate a hypertensive crisis.

Patients who abuse cocaine are subject to increased risk of the effects of ischaemia leading to loss of tissue. Testing the ‘quality’ of the drug by rubbing on the oral mucosa to test depth of anaesthesia may lead to loss of gingivae and alveolar bone. An increased incidence of dental caries may be seen if cocaine is bulked out with carbohydrates. As with heroin, thrombocytopaenia may be seen and, like cannabis, cocaine has a sympathomimetic action.

LSD (lysergic acid diethylamide) is an hallucinogenic drug. Such drugs increase the incidence of bruxism and patients taking it may present with TMJ dysfunction. Dentists should be aware that stressful situations may cause flashbacks and panic attacks in these patients.

A reduction in the dose of adrenaline containing local anaesthetics is recommended in those who chronically abuse solvents as such agents can sensitize the myocardium to the actions of the catecholamine. Solvent abuse also increases the risk of convulsions and status epilepticus may occur.

Some patients may abuse anabolic steroids and performance enhancers, which may precipitate increased carbohydrate consumption with its inevitable effects on the dentition. The systemic effects of adrenaline in dental local anaesthetics can be exacerbated by the sympathomimetic effects of certain anabolic steroid drugs. As with many other illicit drugs, anabolic steroids may interfere with blood clotting.

Complementary therapies

Complementary therapies are often used by patients. It is important to remember possible interactions with prescription drugs, some of which may be prescribed by dental practitioners. Some of
the more common interactions are shown in Table 2.

Past dental history
The past dental history assumes different forms, depending on the patient’s previous exposure to dental treatment. It is clearly relevant to find out whether a patient is a regular attender and of their previous experience of dental treatment and its nature. The previous use of local anaesthetic agents and any associated problems can be checked. If not covered by the previous history, adverse events, such as post-extraction haemorrhage, may be highlighted at this point.

Social history/family history
The social history is often neglected but clearly it is an important part of the comprehensive assessment of a patient. It may directly influence treatment or the way it is delivered. As a minimum, enquiry should be made of the patient’s smoking status and alcohol consumption, and if positive these should be quantified. It is at this point that patients may disclose the use of ‘recreational’ drugs or complementary therapies. The system of units for measuring alcohol consumption is summarized as follows:

- A pint of ordinary strength lager − 2 units
- A pint of strong lager − 3 units
- A pint of ordinary bitter − 2 units
- A pint of best bitter − 3 units
- A pint of ordinary strength cider − 2 units
- A pint of strong cider − 3 units
- A 175 ml glass of red or white wine around 2 units
- A pub measure of spirits − 1 unit
- An ‘alcopop’ around 1.5 units

The patient’s occupation (or previous occupation if retired) is also important. Clinicians identifying patients who smoke should inform the patient of the availability of smoking cessation services after it has been ascertained whether the patient wishes to try and quit. Some patients will be using e-cigarettes. It is worth being aware that the long-term safety of the e-cigarette is not yet established but it is thought that they are likely to be less harmful than conventional cigarettes. Patients should be advised to seek smoking cessation services if they are willing to try and quit. It is not fully established whether e-cigarettes are an effective smoking cessation method.9

Finally, information concerning the patient’s home circumstances is significant. It is particularly important to find out whether a patient lives with another ‘competent’ adult as, in cases of intravenous sedation or day case general anaesthesia, the patient should not be left alone for 24 hours following the procedure. Disorders with a genetic origin should be recorded.

Psychiatric history
The psychiatric history is not included as routine but may be relevant in some cases.10

Systems review
In hospital practice, a body systems review is undertaken after the preliminary history. Whilst this would rarely be used in mainstream dental practice, it is discussed here to highlight its effectiveness on medically assessing various systems.

General enquiry
It is worth starting with a series

<table>
<thead>
<tr>
<th>HERB</th>
<th>CONVENTIONAL DRUG</th>
<th>POTENTIAL PROBLEM</th>
</tr>
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<tbody>
<tr>
<td>St John’s wort</td>
<td>Monoamine oxidase inhibitor and Serotonin reuptake inhibitor</td>
<td>Mechanism of herbal effect uncertain. Insufficient evidence of safety with concomitant use — therefore not advised May limit iron absorption</td>
</tr>
<tr>
<td></td>
<td>Antidepressants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iron</td>
<td></td>
</tr>
<tr>
<td>Karela, ginseng</td>
<td>Insulin, sulphonylureas, biguanides</td>
<td>Altered glucose concentrations</td>
</tr>
<tr>
<td>Feverfew, garlic, ginseng, ginger</td>
<td>Warfarin</td>
<td>Altered prothrombin time/INR</td>
</tr>
<tr>
<td>Echinacea used for &gt;8 weeks</td>
<td>Anabolic steroids, methotrextate, Amiodarone, ketoconazole</td>
<td>Hepatotoxicity</td>
</tr>
<tr>
<td>Feverfew</td>
<td>Non-steroidal anti-inflammatory drugs</td>
<td>Inhibition of herbal effect</td>
</tr>
<tr>
<td>Ginseng</td>
<td>Oestrogens, corticosteroids</td>
<td>Additive effects</td>
</tr>
<tr>
<td>Evening primrose oil</td>
<td>Anticonvulsants</td>
<td>Lowered seizure threshold</td>
</tr>
<tr>
<td>Kava</td>
<td>Benzodiazepines</td>
<td>Additive sedative effects, coma</td>
</tr>
<tr>
<td>Echinacea, zinc (immunostimulants)</td>
<td>Immunosuppressants (such as corticosteroids, ciclosporin)</td>
<td>Antagonistic effects</td>
</tr>
</tbody>
</table>

Table 2. Complementary medicines and their interactions with conventional medicines with potential consequences.
of general questions that may highlight relevant conditions that otherwise may be missed from the more specific systems review. Such findings include:

- Appetite, weight loss;
- Lethargy or fatigue;
- Fevers;
- The presence of any lumps, bumps or swellings;
- The presence of skin rashes (especially if associated with oral mucosal lesions).

**Cardiovascular system**

- A differential diagnosis of chest pain (bearing in mind other potential causes) includes:
  - Angina;
  - Myocardial infarction;
  - Oesophageal reflux;
  - Musculoskeletal;
  - Pleuritic (for example pulmonary embolism);
  - Hyperventilation;
  - Referred pain from the abdomen.

Does the chest pain occur at rest or after exertion – how much exertion?;

- Dyspnoea (remember potential respiratory causes either co-existing or in isolation);

Does breathlessness occur at rest/on exertion?;

- Paroxysmal nocturnal dyspnoea (waking from sleep feeling breathless) or orthopnoea (breathlessness on lying flat);
- Palpitations;
- Prosthetic/replacement heart valves;
- History of rheumatic fever and/or infective endocarditis;
- Claudication pains and what is required to precipitate them.

**Medical Problem Implications for Management**

- **Valve replacement, structural cardiac defect**
  - No antibiotic cover required. Consideration should be given of a recent publication suggesting a possible re-think on this in the future. Currently, no change in guidelines.

- **Myocardial infarction**
  - No elective dental treatment for 3 months after an MI. Ideally no general anaesthetic for the first 6 months.

- **Angina**
  - Ensure availability of emergency drugs and oxygen. Enquire about frequency of attacks, their precipitation and effectiveness of GTN.

- **Hypertension**
  - In oral surgical cases if more than 160/100 mmHg, consider postponing until better control. In acute situations IV sedation may be helpful.

**Table 3. Cardiovascular disorders and potential management implications.**

<table>
<thead>
<tr>
<th>Medical Problem</th>
<th>Implications for Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liver Disease</td>
<td>Potential for bleeding problems, care with drug prescriptions, infection risk from various types of hepatitis virus. For treatment under LA a minimum of a coagulation screen and full blood count should be carried out. If liver function (assessed via liver function tests) is impaired, LA and particularly sedation should be carried out with caution. The BNF has an Appendix (2) which highlights drugs to be used with caution (or not at all) in patients with liver disease.</td>
</tr>
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</table>

**Table 4. Liver disease and management implications.**

<table>
<thead>
<tr>
<th>Medical Problem</th>
<th>Implications for Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epilepsy</td>
<td>Enquire about the nature of seizures and the degree of control – timing and precipitation (if known) of last 3 seizures. Ask about recent changes in medication and why this was thought necessary. Ensure that buccal midazolam is available.</td>
</tr>
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</table>

**Table 5. Epilepsy and management implications.**

<table>
<thead>
<tr>
<th>Medical Problem</th>
<th>Implications for Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney Disease</td>
<td>Renal dialysis patients are best treated the day after dialysis as renal function optimal and heparin effect has worn off. Renal transplant patients may be immune-suppressed and heightened vigilance for oral infection and cutaneous malignancy should be remembered. Do not assume normal renal function after a kidney transplant – a urea and electrolyte blood test/liaison with the renal physician should be undertaken. The BNF has an appendix which details the drugs contraindicated/to be used with caution in patients with renal disease.</td>
</tr>
</tbody>
</table>

**Table 6. Kidney disease and implications for patient management.**

Cardiovascular disorders and potential management implications

Cardiovascular disorders and potential management implications are summarized in Table 3.
Gastrointestinal system
- Dysphagia (difficulty swallowing);
- Odynophagia (pain on swallowing);
- Indigestion, nausea or vomiting;
- Haematemesis (vomiting blood);
- Change in bowel habit;
- Spleen or liver problems.

Liver disease and management implications
Liver disease and management implications are summarized in Table 4.

Neurological system
- Any history of fits, faints or blackouts;
- Headache or facial pain;
- Disturbance in motor function or sensation;
- Muscle wasting, weakness or fasciculation;
- Disorders of co-ordination.

Epilepsy and management implications
Epilepsy and management implications are summarized in Table 5.

Musculoskeletal system
- Pain/swelling/stiffness of joints;
- Gait (bear in mind potential neurological problems);
- Joint prostheses;
- Locomotor and manual impairment secondary to musculoskeletal disorders.

Genito-urinary system
Usually the genito-urinary system is not enquired about in any detail. Patients with repeated urinary tract infections may be taking antibiotics, which could be of relevance.

Kidney disease and implications for patient management
Kidney disease and implications for patient management are summarized in Table 6.

Conclusions
Much of the medical assessment of a patient is derived from the history. Some underlying conditions may be of direct relevance to the safe management of dental patients. It is important that dental practitioners have a sound knowledge of such conditions and are able to put them into context when managing such patients.

References