Diagnosis and management of dentine hypersensitivity

Dr David G. Gillam
UK

The aim of this review is to update dental professionals on this troublesome clinical condition that is not fully appreciated by many dental practitioners and as such is often under-diagnosed in dental practice.

Diagnosis and differential diagnosis

Before considering a treatment strategy for the management of the condition, it is important to note from the published literature that there are a number of individuals who may be at risk from dentine hypersensitivity (DH), for example, overenthusiastic brushers, periodontally treated patients, bullimics, people with xerostomia, high-acid food/drink consumers, older brushers, periodontally treated patients, and people exhibiting gingival recession, and people who chew ‘smokeless’ or ‘snuff’ tobacco.

History-taking, oral examination and diagnosis

One of the difficulties facing the dental professional when confronted with a patient complaining of tooth pain is that there are a number of clinical conditions that may elicit the same clinical symptoms as DH, and they have to be eliminated before a correct diagnosis of DH can be made. It is also important to acknowledge that patients who have been suffering from various types of orofacial pain in the form of toothache or tooth sensitivity may suffer various physical or emotional symptoms that can be very upsetting and disturbing to them. For example, they may experience a feeling of despair or helplessness, and frustration of not being able to cope and relying on a dental professional to resolve their problem. This in turn may make recording a satisfactory history of the condition difficult and the dental professional will need all his or her skills in obtaining the correct diagnosis, which will lead to a successful conclusion in his or her treatment strategy. In a busy dental practice, this may take time and the dental professional needs to be a good listener, sympathetic and patient in order to elicit the necessary information from the patient. However, it is important to remember that no irreversible treatment procedure should be performed until a definite diagnosis is made; in other words, no diagnosis, no treatment.

No doubt dental professionals may remember various acronyms from Dental School such as ‘LOCATE’ and ‘Socrates’ in order to aid them in obtaining sufficient information about the character, site, onset, duration, periodicity and severity of the problem that the patient may have when they come to see the dental professional (the reason for attending). Further questions as to what makes the problem better or worse, as well as asking the patient to describe the pain he or she is experiencing may be very helpful. The term ‘analog’ scale (no pain to very severe pain) or simply relate it as a 0 to 10 numerical score. It is important for the dental professional to conduct this part of the diagnostic process in a systematic manner. Once the history-taking has been completed the patient should be examined, in order to diagnose the presenting problem that patient may have. This will include all extra-oral and intra-oral tissues (including palpation) in a thorough and systematic manner. Various investigational aids, such as radiographs and vitality tests, relevant to the oral examination may be taken and these should be able to confirm the clinical diagnosis based on a thorough history. Identification of localised areas of exposed buccal or facial aspects of dentine may be investigated by using an explorer probe and gently drawing it across the dentine surface. This procedure may elicit a response from the patient, although it is generally accepted that a blast of cold air from a dental air syringe is more likely to record a response from the patient if his or her problem is due to DH. A practical tip the dental professional can use in the diagnostic process is to apply a varnish such as Duraphat on the affected area and then retest using a cold air blast. If the patient’s response indicates a reduction in his or her discomfort this may indicate that the problem is due to DH. However, should not exclude the dental professional from identifying and relieving any aetiological and predisposing factors in his or her management strategy.

Counselling and prevention

This aspect of the diagnostic and management process is...
Aetiologies

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<th>Aetiology</th>
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<th>Pain intensity</th>
<th>Provoking factors</th>
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<td>Thermal, evaporative, tactile, chemical, osmotic</td>
<td>Removal of the stimulus</td>
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<tr>
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<td>Loss of clot, exposed bone</td>
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</tr>
</tbody>
</table>

Table 1: Differential diagnosis of dental pain (adapted from Aghabeigi).
“Most people are worried it is often something worse.”

Dr Nick Rote. East Finchley, UK

1 in 3 people suffer from dentine hypersensitivity and over 50% of sufferers don’t mention it to their dental professional.¹ Research shows that this may be because they fear it requires major dental work, the pain may be variable so they don’t report it or because they may be using techniques to try and avoid the pain.²

These findings highlight the important role that dental professionals play in actively diagnosing dentine hypersensitivity.

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“When they come back to see me next time, they’re very pleased that the solution was given to them so easily.”


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One disadvantage is that OTC desensitising toothpastes, although widely used for treating DH; cannot be ignored if the dental professional wishes to be successful in treating the condition it is important to realise that there is no ‘one size fit all’ panacea for the treatment of this condition but rather a selected armamentarium of products and procedures. It is important therefore for the dental professional to have a management strategy that is based on a thorough history and examination, leading to a definitive diagnosis that involves not only the removal of any aetiological and predisposing factors, but also careful monitoring of the condition following initial treatment. To this end, a number of treatment paradigms have been suggested by researchers (Fig. 1, page 12). However, it is important that the management of the condition fits in with the day-to-day running of the dental individual practice rather than cause an unnecessary burden on both the dental professional and patient.

Conclusion

From reviewing the available literature on the condition it is apparent that the availability of a vast array of treatments would indicate either that there is no one effective desensitising agent for completely resolving the discomfort or that the condition, owing to its highly subjective nature, is difficult to treat irrespective of the available treatment options. The importance of implementing preventative and management strategies in identifying and eliminating predisposing factors in particularly erosive factors (such as dietary acids) cannot be ignored if the dental professional is to treat this troublesome clinical condition successfully.

Editorial note: A complete list of references is available from the publisher.