**Dentin Hypersensitivity**

**Part 2 Dr. Huda Jasim Jebur**

**Clinical Management of DH**

As like any other clinical condition, an accurate diagnosis is important before starting the management of DH. Diagnosis of DH starts with a thorough **clinical history and examination**. The other causes of dental pain should be excluded before a definite diagnosis of DH is made.

**Differential diagnosis**

1. Cracked tooth syndrome
2. Fractured restorations
3. Restorations left in traumatic occlusion
4. Chipped teeth
5. Dental caries, root caries
6. Postoperative sensitivity
7. Pulpal response to restorative treatment or certain materials
8. Marginal leakage of restorations
9. Pulpitis, pulpal status
10. Gingival inflammation
11. Palatogingival grooves
12. Vital bleaching procedures

In investigating the medical history some questions are asked about the time of the start of DH, the intensity of the pain, the stability of the pain and the factors that reduce or increase the intensification of the disease.

A simple clinical method of diagnosing DH includes a jet of air or using an exploratory probe on the exposed dentin, in a mesio-distal direction, examining all the teeth in the area in which the patient complains of pain. The severity or degree of pain can be quantified either according to categorical scale (i.e., slight, moderate or severe pain) or through using quantitative parameters such as a visual analogue scale.

**Visual Analogue Scale(VAS)**

The VAS is a unidimensional measure of pain intensity, which has been widely used in diverse adult populations. The VAS scale is used in dental clinical research and consists of a 10 centimeter line with the two ends representing the limits of pain a subject may experience. Individuals point to or mark a spot on the line where they feel indicates their current level of pain. The distance between no pain and the mark made by the individual creates the pain level.

Using a ruler, the score is determined by measuring the distance (mm) on the 10-cm line between the “no pain” anchor and the patient’s mark, providing a range of scores from 0–100 mm. A higher score indicates greater pain intensity.

Where no pain (0–4 mm), mild pain (5-44 mm), moderate pain (45–74 mm), and severe pain (75–100 mm).

**Prevention of DH/removal of etiological factors**

An often, neglected phase of clinical management of DH is the identification and treatment of the causative factors of DH. By removing the etiological factors, the condition can be even prevented from occurring or recurring. The etiological factors include faulty tooth brushing, poor oral hygiene, premature contacts, gingival recession because of periodontal therapy or physiological reasons, and exogenous/endogenous non-bacterial acids

**1. Improper tooth brushing;** which includes using hard- or thick-bristle tooth brushes, brushing teeth with excessive pressure, excessive scrubbing at cervical areas or even missing to brush cervical areas. To avoid the DH due to improper tooth brushing: The patient should be taught the correct method of tooth brushing. The patient should avoid the use of abrasive tooth pastes. The patient should avoid brushing at least for one hour after consuming acid drinks or foods (due to agonist effect of acidic erosion on tooth brush abrasion).

**2. Premature contacts;** sometimes through correction of occlusion or the use of an occlusal splint, the problem can be easily resolved.

**3. Gingival recession;** the patient should see a periodontist for consultation. Moreover, treatments such as graft or positioning flap might be adopted.

**4. Exogenous and endogenous acids (erosive agents)**

It has been proved that erosive agents have a role in the initiation and progression of DH. These agents can open dentinal tubules through removal of the smear layer, tubules’ plugs and enamel.

1. Erosive agents with exogenous acids include carbonated drinks, citrus fruits, alcoholic drinks, yogurt, dairy products, and occupational hazard (such as workers in battery manufacturing plants).
2. Erosive agents with endogenous acids enter the mouth through reflux or gastro-esophageal regurgitation. These agents can be mostly found in patients with eating disorders. The patients are recommended to refer their doctors for the underlying diseases.

**5. Poor oral hygiene** contributes to periodontal diseases leading to root exposure. It has been also reported that periodontal treatment that exposes more root surface could increase incidence of DH.

**Classification of desensitizing agents**

1. **Classification of desensitizing agents based on mode of administration**
2. At home desensitizing agents
3. In-office treatment
4. **Classification of desensitizing agents based on mechanism of action**
5. Nerve desensitization

* Potassium nitrate

1. Protein precipitation

* Gluteraldehyde
* Silver nitrate
* Zinc chloride
* Strontium chloride hexahydrate

1. Plugging dentinal tubules

* Sodium fluoride
* Stannous fluoride
* Strontium chloride
* Potassium oxalate
* Calcium phosphate
* Calcium carbonate
* Bio active glasses (SiO2–P2O5–CaO–Na2O)

1. Dentine adhesive sealers

* Fluoride varnishes
* Oxalic acid and resin
* Glass ionomer cements
* Composites
* Dentin bonding agents

1. Lasers

* Neodymium: yttrium aluminum garnet (Nd-YAG) laser
* GaAlAs (galium-aluminium-arsenide laser)
* Erbium-YAG laser

**Management Strategy of DH**

1. Take a detailed clinical and dietary history.
2. Differentially diagnose the condition from other dental pain conditions.
3. Identify and manage etiological and predisposing factors.
4. In case of mild-to-moderate sensitivity, advice at-home desensitizing therapy.
5. If there is no relief or in case of severe sensitivity, initiate in-office treatment.
6. In extreme cases, if patient does not respond to the therapy and there are individual teeth exhibiting the symptoms, then endodontic therapy can be initiated.
7. A regular review should be made with an emphasis on prevention of the condition.

“When we do the best we can, we never know what miracle is wrought in our life or the life of another.”

— Helen Keller