

Intraoral Pain Disorders



Mary Hil Edens, DDS, Yasser Khaled, BDS, MDSc, MMSc,
Joel J. Napeñas, DDS, FDSRCS(Ed)*

KEYWORDS

- Pulpitis • Alveolar osteitis • Aphthous stomatitis • Candidiasis • Cracked tooth syndrome
- Lichen planus • Vesiculobullous disorders • Medication-related osteonecrosis of the jaw

KEY POINTS

- Dental providers should be aware of the vast range of common causes for intraoral pain.
- Pain of dental origin can range from a short, sharp pain that can progress to a persistent, dull pain, depending on the severity of disease.
- Pain caused by chronic periodontal conditions may be mild, persistent, or episodic dull pain, whereas acute periodontal conditions can be continuous or intermittent of increased severity.
- Pain of mucosal origin is continuous, usually described as raw, stinging, aching, and burning.
- Inflammatory and infectious processes of bone may be characterized by continuous pain, swelling, reduced jaw mobility, bony destruction, and purulent drainage.
- Salivary gland disorders may have localized pain in the area of the affected gland with swelling and intermittent pain associated with gland stimulation.

INTRODUCTION

Those experiencing intraoral pain associated with dental and oral diseases of various causes are likely to pursue treatment from medical and dental providers. A range of causes for intraoral pain include odontogenic, periodontal, oral mucosal, or contiguous hard and soft tissue structures to the oral cavity. Providers should be vigilant when diagnosing these, as they should be among the first in their differential diagnoses to be ruled out. Accordingly, this review provides brief overviews of frequently encountered oral/dental diseases that cause intraoral pain, originating from the teeth, the surrounding mucosa and gingivae, tongue, bone and salivary glands and their causes, features, diagnosis, and management strategies.

DENTAL AND PULPAL

Dental and pulpal pain occurs when there is noxious stimulation of the teeth or disease

affecting the enamel, dentin, or pulpal structures. This pain may be attributable to trauma, attrition, abrasion, erosion, or iatrogenic or bacteria causing caries. There is typically a continuum of symptoms based on the severity of disease ranging from short, sharp pain that can progress to a persistent, dull pain indicating the presence of inflammation, infection, and disease. Because enamel is avascular, noninnervated, and nonporous, loss of structure due to demineralization, mechanical means, or caries isolated in the enamel is usually painless. However, once lesions breach the dentinoenamel junction, pain can be experienced through stimuli affecting the dentinal tubules. Myelinated (A δ) and unmyelinated (C) fibers innervate the pulp. If there is sufficient stimulation with temperature or pressure, fluid movement in the dentinal tubules activates the low-threshold A δ fibers, producing a quick, sharp, localized pain. An injured tooth with local inflammation lowers the pain threshold of A δ fibers; as the pulpal involvement and inflammation persists,

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Oral Medicine Residency Program, Department of Oral Medicine, Carolinas Healthcare System, PO Box 32861, Charlotte, NC 28232, USA

* Corresponding author.

E-mail address: joel.napenas@carolinashealthcare.org

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the C fibers are stimulated producing a more prolonged, dull, and diffuse pain.

Caries

Bacterial invasion leads to subsequent acid metabolite formation on tooth structures, leading to damage of tooth structure. Symptoms are a result of lost enamel and exposure of dentin, cementum, and pulp.

- Symptoms and features: Patients may report sensitivity to thermal changes, sweet, or acidic foods. Pain is sharp, localized, and dissipates immediately after removal of the stimuli.
- Diagnosis: Caries are detected both clinically and radiographically (Fig. 1).
- Management: If a lesion is asymptomatic and incipient involving only the enamel, monitoring and topical fluoride placement are usually adequate. However, if the lesion is symptomatic, extends into dentin, and is not arrested, removal of the decayed tooth structure and placement of a dental restoration is indicated.

Exposed Cementum or Dentin

Gingival recession leading to exposed cementum (Fig. 2) commonly results from heavy



Fig. 1. Deep caries noted on adjacent premolars radiographically.



Fig. 2. Exposed cementum of the upper left canine due to gingival recession.

pressure from aggressive tooth brushing. Abrasion of enamel leading to exposed dentin can also occur from aggressive tooth brushing, bruxism, or abnormal or traumatic occlusion.

- Symptoms and features: Tooth sensitivity to thermal stimuli generally results in pain that is sharp, localized, and dissipates immediately after removal of the stimuli.
- Diagnosis: Diagnosis is made clinically through evaluation and testing exposure of cold stimuli to the exposed root surface.
- Management: Treatment measures are directed toward limiting dentinal fluid movement by covering the exposed dentin or cementum with desensitizing agents or restorations.¹ Oral hygiene instruction is also important to improve tooth-brushing technique and prevent further recession.

Pulpal Disease

Caries, trauma, fracture, exposed dentin or cementum, or premature or traumatic occlusal contact can all result in inflammation with or without infection that causes pulpal pain.

- Symptoms and features: There may be continuous, dull, aching pain and episodes of pulsing, throbbing, and sharp pain, representing stimulation of the C fibers and A δ fibers, respectively. Intermittent pulpal pain can be stimulated by heat, cold, pressure, and head positioning. Teeth that only have pulpal disease are not sensitive to percussion of the affected tooth.

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