

## Nasal Sinus Tract Associated with Dental Infection

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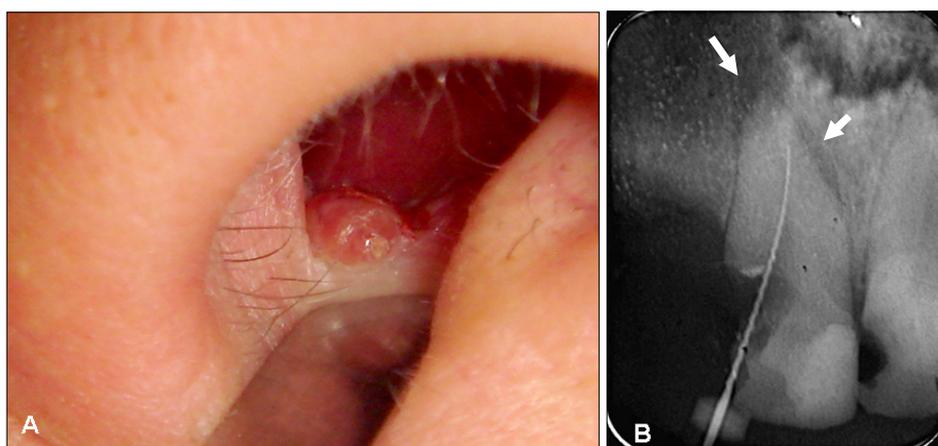
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Dear Editor:

Sinus tracts of odontogenic origin are usually intraoral. However, extraoral sinus tracts associated with odontogenic infections have been reported<sup>1</sup> and they often represent a diagnostic challenge. The occurrence of nasal sinus tract of dental origin is very rare<sup>2</sup>. We observed a case of a 58-year-old female patient who complained of a nodule in the right nostril since approximately the last 2 months. The physical examination revealed an erythematous painless nodule in the right nostril with a purulent discharge (Fig. 1A). On intraoral examination, the right maxillary incisor crown was dark in color, and there was extensive restoration due to secondary caries. The pulp vitality test for assessing the response to cold was nega-

tive, indicating pulp necrosis. Radiographically, there was a diffuse radiolucent image in the periapical region of this tooth, with disruption of the lamina dura (Fig. 1B). A nasal sinus tract associated with an odontogenic infection was the main diagnosis. Hence, nonsurgical endodontic treatment was performed for the involved tooth. After 1 week, the purulent discharge stopped completely, confirming the initial clinical diagnosis (Fig. 2).

A sinus tract of dental origin is caused by pulp necrosis associated with bacterial infection, which causes an inflammatory lesion in the periapical region of the involved tooth<sup>1-3</sup>. This inflammatory reaction may spread to the alveolar bone, following the path of least resistance, and externalize on the oral mucosa or skin<sup>1,3</sup>. Although a



**Fig. 1.** (A) An erythematous painless nodule in the right nostril. (B) A diffuse radiolucent image in the periapical region of the right maxillary central incisor, with disruption of the lamina dura (cortical alveolar bone) (arrows).

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**Fig. 2.** Complete healing of the nasal lesion after the nonsurgical endodontic treatment.

nasal sinus tract of dental origin is very uncommon, this condition may occur in periapical infections from maxillary central incisors<sup>2,3</sup>.

The evaluation of cutaneous fistulas must begin with thorough history taking and awareness that any cutaneous lesion on the face and neck could be of dental origin<sup>4</sup>. In maxillary teeth, the cheek is the most common site of an extraoral sinus tract originating from molars and premolars; and the nasolabial fold, upper lip, and infraorbital region are common sites of an extraoral sinus tract originating from incisors and canines. In the mandible, the submandibular region and the neck are the extraoral sites of a sinus tract originating from molars and premolars, whereas the chin and submental region are the most common extraoral sites of a sinus tract originating from incisors and canines<sup>3</sup>. Eventually, the patient's history may reveal dental pain<sup>2</sup>, but clinicians should keep in mind that most of the teeth progress to pulp necrosis without

causing any discomfort to the patient<sup>5</sup>. A chronic, purulent drainage via the sinus tract also reduces the pressure and swelling and consequently, the pain<sup>3</sup>.

The differential diagnosis of an extraoral sinus tract of odontogenic origin includes the other dermatoses, such as folliculitis, actinomycosis, tuberculosis, pyogenic granulomas, foreign bodies, osteomyelitis, congenital fistulas, and squamous and basal cell carcinomas<sup>1,4</sup>. Nevertheless, these cases have been misdiagnosed and treated inappropriately, mainly with recurrent unnecessary surgical procedures and antibiotic therapy<sup>1</sup>. In the present case, the initial diagnosis was an odontogenic nasal sinus tract after adequate clinical and radiographic exams.

Appropriate treatment results in predictable and rapid healing of these lesions<sup>3</sup>. If there is an extra-oral sinus tract associated with dental infection, the elimination of infection through effective endodontic treatment will lead to resolution of the lesion<sup>1</sup>. Dental extraction is indicated in nonrestorable teeth<sup>3</sup>.

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