

Misdiagnosis of a Nasopalatine Duct Cyst: A Case Report

Paul B. Hilfer, DDS,* Brian E. Bergeron, DMD,[†] Ender S. Ozgul, DDS, MS,*
and Danny K. Wong, DDS, MS*

Abstract

Introduction: Nonendodontic lesions misdiagnosed as pathoses of endodontic origin are often referenced in the literature. One of the most frequent nonodontogenic cysts of the oral cavity, the nasopalatine duct cyst (NPDC), can be misdiagnosed as endodontic in nature. **Methods:** A case is presented in which a patent NPDC was originally diagnosed as a sinus tract with subsequent endodontic nonsurgical retreatment and eventual extraction before endodontic consultation. **Results:** After surgical treatment, a histopathologic diagnosis of an NPDC was confirmed. **Conclusions:** If diagnosed incorrectly, inappropriate endodontic treatment of a NPDC may be initiated to include unnecessary extraction. An increased understanding of anatomy, the use of appropriate diagnostic tests to include cone-beam computed tomography imaging, and key examination techniques to distinguish endodontic lesions from nonendodontic pathoses are imperative for an accurate differential diagnosis and appropriate treatment outcome. (*J Endod* 2013;39:1185–1188)

Key Words

Cone-beam computed tomography, misdiagnosis, nasopalatine duct cyst

From the *Aviano AFB, Aviano, Italy; and [†]Keesler Medical Center, Keesler AFB, Biloxi, Mississippi.

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Address requests for reprints to Dr Brian E. Bergeron, Keesler Medical Center, 81st Dental Squadron, 606 Fisher Street, Keesler AFB, MS 39534. E-mail address: brian.bergeron@us.af.mil

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Nonendodontic lesions mimicking apical periodontitis and their misdiagnosis can be found frequently in the literature (1–3). In many instances, the association of lesions with adjacent teeth may complicate the differentiation of odontogenic from nonodontogenic pathoses. The incisive canal cyst, or nasopalatine duct cyst (NPDC), is 1 nonodontogenic cyst that may be radiographically superimposed over the apices of the maxillary central incisor roots, making it difficult to establish an accurate diagnosis (2). A positive response to pulpal vitality tests should suggest a nonendodontic origin, but when endodontic therapy has been previously completed on the suspected tooth, the differential diagnosis becomes clouded. In such cases, conventional radiographs may not be sufficiently accurate or sensitive enough to diagnose ambiguous periapical pathology (4, 5). When NPDCs are misinterpreted as endodontic periapical lesions, inadequate therapy may ensue (2, 6–8).

This report describes a case of a persistent sinus tract of assumed endodontic origin in which a tooth was ultimately extracted. Subsequent surgical intervention and histologic examination confirmed the nonodontogenic diagnosis of an NPDC.

Case Report

A 20-year-old white man with a noncontributory health history was initially treated by his general practitioner. The patient's chief complaint was occasional slight swelling and drainage on the midline of his anterior palate without pain or additional symptoms. The patient reported a history of trauma to tooth number 9 with subsequent root canal therapy with periodontal splinting approximately 8 years prior. Periapical radiographs taken showed a large 8 × 11 mm apical radiolucency associated with teeth numbers 8 and 9 with gutta-percha tracing a palatal sinus tract to the apex of previously treated tooth number 9 (Fig. 1A and B). The general practitioner chose to nonsurgically retreat tooth number 9 with calcium hydroxide therapy, presuming endodontic failure. Over the course of 3 months, the patient was re-evaluated with subsequent calcium hydroxide treatment on 2 additional occasions. Continued drainage, nonresolution of the palatal sinus tract, and a lack of reduction in lesion size were noted (Fig. 1C and D). The general practitioner assumed a diagnosis of root fracture because of the patient's history of trauma. Extraction of tooth number 9 with ridge preservation was performed as definitive treatment, with no obvious fracture detected on postextraction examination. The patient, who was a military service member, was unavailable for restorative follow-up until 8 months after extraction. At that time, the patient returned with identical preoperative symptoms and a persistent sinus tract. The patient was consequently referred to a group specialty practice for an endodontic/periodontal evaluation.

The patient presented for evaluation without discomfort and teeth numbers 7, 8, 10, and 11 pulp tested vital to cold with no sensitivity to percussion or palpation, physiologic mobility, and probing depths of less than 3 mm. The persistent palatal sinus tract was traced with no radiographic changes in lesion size (Fig. 1E and F). A cone-beam computed tomographic (CBCT) scan taken (Planmeca ProMax 3D; Planmeca OY, Helsinki, Finland) and read by an oral and maxillofacial radiologist revealed a large palatal defect (~9 × 6 × 6.5 mm) in the area of extraction approximating the nasopalatine canal. A radiolucent area present at the site where apex number 9 was previously located was consistent with an unfilled portion of the graft site (Fig. 2). Upon reflection of a full-thickness mucoperiosteal palatal flap by the specialty team, a 12 × 15 mm well-circumscribed cystic lesion was noted midline between the apices of teeth numbers 8 and 9. The surgically enucleated lesion adhered to the palatal flap independent of any root structure, was dissected, and was submitted for histologic examination (Fig. 3A and

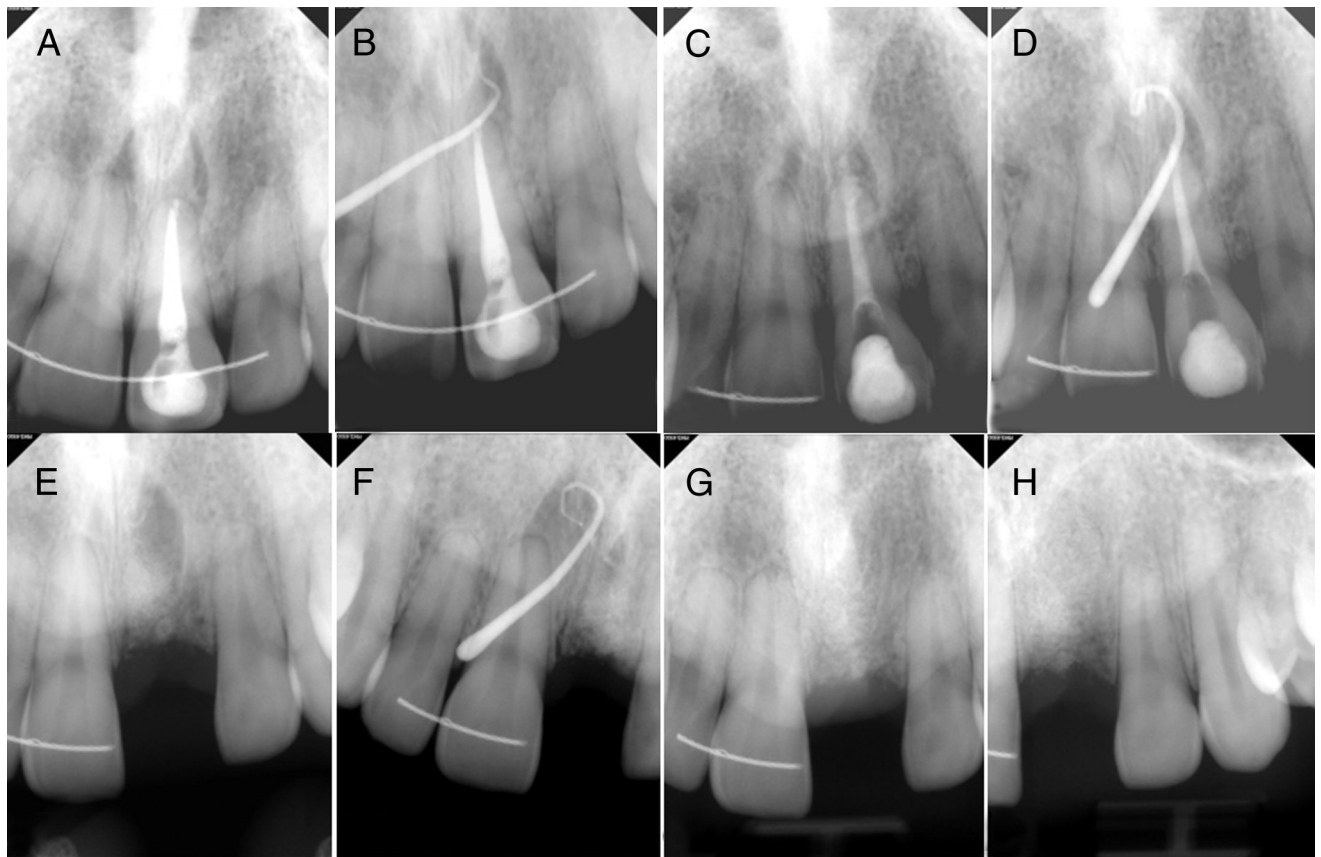


Figure 1. (A and B) Initial periapical radiographs with gutta-percha tracing sinus tract. (C and D) Calcium hydroxide treatment after 3 months of repeated application with no change in lesion size and persistent sinus tract. (E and F) Eight months after extraction with no change in lesion size and persistent sinus tract. (G and H) Two-week surgical postoperative images.

B). The palatal defect was corrected with a xenograft and resorbable collagen barrier membrane before flap replacement. The patient presented for a 2-week postoperative follow-up; he was asymptomatic

with resolution of the palatal sinus tract and no report of paresthesia (Fig. 1G and H). Pulp testing confirmed residual vitality of teeth 7, 8, and 10. The oral pathology report confirmed an NPDC as the final

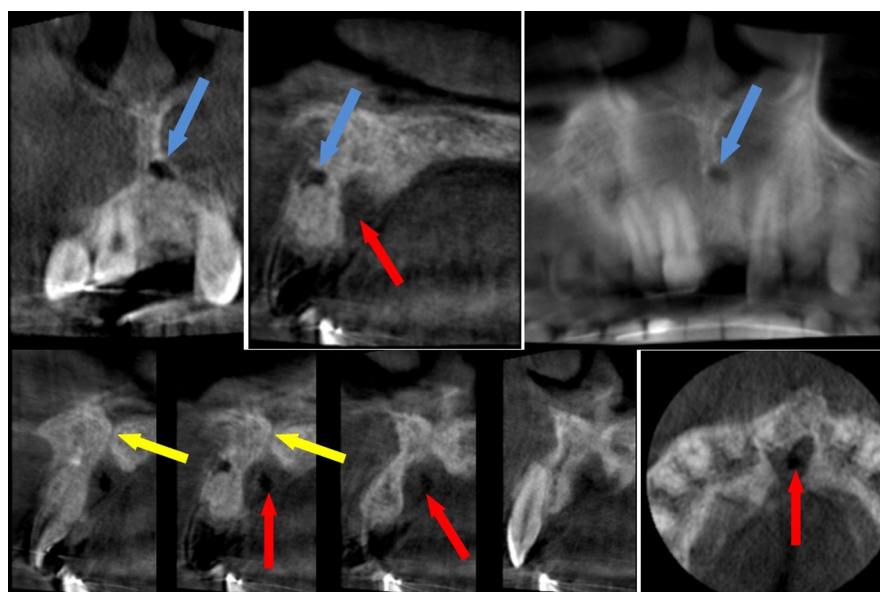


Figure 2. Surgical preoperative CBCT images. Yellow arrows indicate the nasopalatine canal. Red arrows point to the palatal defect. Blue arrows indicate the radiolucent area consistent with unfilled extraction graft site.

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