Solitary Bone Cyst in the Anterior Mandible

by

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Introduction

Solitary bone cyst is relatively rare in oral surgery. Although BEASLEY reported that solitary bone cyst in the jaw was more common than previously believed, its incidence of occurrence is still very low. Because they are generally asymptomatic, most cases are only incidentally discovered through routine radiography. Accordingly, any increase in the occurrence of solitary bone cyst would mostly be accounted for by the development of radiographic techniques, especially the common use of panoramic radiography. Clinically, solitary bone cyst of the jaw is reported most frequently in the posterior portion of the mandible. We report here a relatively rare case of a solitary bone cyst in the anterior mandible.

Case report

In September 1985, a 22-year-old woman was referred by a dentist for diagnosis and treatment of a radiolucent area in the mandible. The lesion had been incidentally found by routine radiographic examination. The patient was asymptomatic and had no history of trauma to the jaw. Family and medical histories were not contributory.

There was no visible swelling over the root apex area of the left cuspid, no expansion of the cortical plate, and no paresthesia over the mental region. Palpation also elicited no pain. There was no loosening of the involved tooth (left cuspid), which was vital to pulp testing.

The panoramic radiograph showed a well-circumscribed radiolucent area approximately 2.5 cm in diameter, at the apical area of the mandibular left cuspid (Fig. 1). The periapical film showed more defined radiolucency than that of the panoramic radiograph (Fig. 2). Although the margin was irregular, no scalloping was found. The lesion involved the apex of the cuspid, but no evidence of root resorption was found.

All screening laboratory findings were within normal limits. An aspiration biopsy was attempted, but the cortical bone could not be perforated with the needle, so an incisional biopsy was performed. An approximately 10-mm section of overlying
Fig. 1 Panoramic radiographic view showing a lesion at the apical area of the mandibular left cuspid

Fig. 2 Intraoral radiograph of solitary bone cyst involving the apex of the mandibular left cuspid
bone was removed from the buccal surface, exposing an empty bone cavity with a thin tissue lining. The cavity was well curetted to reveal brisk bleeding from the surrounding bone. Hemorrhage was easily controlled. The fragments of bone and lining were sent for histological examination.

**Histopathologic findings**

The inner surface of the cyst was covered by a thin connective tissue membrane that contained osteoid, multinuclear giant cells and capillary dilatation (Fig. 3). A few infiltrated inflammatory cells, hemosiderin granules and histiocytes were also found in some areas. Bony tissues were seen on the outer side of the cyst, and no epithelial lining was observed.

**Discussion**

Numerous cases of solitary bone cyst have been reported under various names such as progressive bone cyst, traumatic bone cyst, traumatic cyst, traumatic hemorrhagic cyst, solitary hemorrhagic cyst, extravasation cyst, hemorrhagic extravas-
tion cyst, simple bone cyst, hemorrhagic cyst, and unicameral cyst, since the cyst was first mentioned by Lucas in 1929\(^2\)\(^{-5}\). The various names reflect the different theories proposed for the etiology and pathogenesis of this cyst. Both of the terms solitary bone cyst and traumatic bone cyst have predominated among the various names. However, since there have been many cases of solitary bone cysts without a history of trauma, solitary bone cyst was used in the present paper. RUSHTON\(^6\) compiled the reported cases of solitary bone cyst and adopted the following criteria for the establishment of diagnosis: (1) a single lesion, (2) no epithelial lining, (3) no infection, (4) no perforation of the bony walls, and (5) fluid in the lesion. However, many cases of solitary bone cyst have been reported which have not belonged to RUSHTON’S criteria. Therefore, HANSEN\(^2\) modified RUSHTON’S criteria as follows: (1) Upon surgery, the lesion is essentially empty and occasionally the cavity contains some fluid and/or small amounts of tissue. (2) Other findings (clinical, radiographic, historic, histopathologic, etc.) do not exclude the diagnosis of solitary bone cyst. Compared with RUSHTON’S criteria, the present case is applicable except for the existence of fluid.

Solitary bone cysts occur most frequently during the second decade of life, although the present patient was 22 years old. The incidence is slightly higher in males. The majority of lesions occur in the posterior body of the mandible. BEASLEY\(^1\), and KUROI\(^7\) have reported incidences of occurrence in the anterior mandible of 0.13, and 0.24, respectively. Although these incidences seem to be high, the numbers of cases would be very low since the occurrence of solitary bone cyst is relatively rare.

References