



Cholesterol Granuloma and Actinomycosis Located in the Mandible

Mandibulada Yer Alan Kolesterol Granülomu ve Aktinomikoz

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Abstract

As with other lesions, there may be clinical, radiological and pathological diagnostic differences in dental lesions. Cases that are thought to be malignant and/or benign clinically and radiologically may be diagnosed differently after histopathological evaluation. For this reason, histopathological evaluation is important in determining the diagnosis and treatment protocols of lesions. Sometimes, we may encounter cases with the coexistence of several lesions. A 56-year-old male patient complained of swelling in his gums. As a result of the computed tomography examination performed after the patient's examination, swelling was detected in the left mandible corpus. Biopsy was recommended primarily for odontogenic cysts and other cystic lesions. In the histopathological evaluation, granulomatous inflammation with clefts and surrounding multinuclear giant cells and adjacent dense filamentous tangles were noted. In the histopathological evaluation of this case, the diagnosis of clefts was also important, however, it may be useful to evaluate the spectrum in granulomatous inflammation tables. Also, actinomycosis has been considered for filamentous areas. Actinomyces are included in the oral flora, but it should not be forgotten that it can cause Actinomycosis by entering the mucosa for various reasons. With its filamentous appearance, it can sometimes mimic fungal infections, and in this respect, both histopathological and histochemical studies may be required. Here, a case with clinically and radiologically thought to be an odontogenic cyst and histopathologically associated with cholesterol granuloma and actinomycosis is presented.

Keywords: Cholesterol; Granuloma; actinomycosis; mandible; Diagnosis; Differential.

Özet

Diğer lezyonlarda olduğu gibi dental lezyonlarda da klinik, radyolojik ve patolojik tanı farklılıkları olabilir. Klinik ve radyolojik olarak malign ve/veya benign olduğu düşünülen vakalar, histopatolojik değerlendirme sonrasında farklı tanı alabilirler. Bu sebeple lezyonların tanı ve tedavi prokollerinin belirlenmesinde histopatolojik değerlendirme önemlidir. Bazen de birkaç lezyonun beraberliği olan vakalarla karşılaşabiliriz. 56 yaşındaki erkek hasta dişetlerinde şişlikten şikayetçi oldu. Hastaya muayene sonrası yapılan bilgisayarlı tomografi incelemesi sonucunda sol mandibula korpusunda şişlik tespit edildi. Biyopsi öncelikle odontojenik kistler ve diğer kistik lezyonlar için önerildi. Histopatolojik değerlendirmede yarıkların yer aldığı ve bu yarıkları çevreleyen, multinükleer dev hücrelerin eşlik ettiği granülatöz inflamasyon ve komşuluğunda yoğun filamentöz görünümü yumaklar dikkati çekti. Bu vakanın histopatolojik değerlendirmesinde kleftler tanı da önemli oldu, bununla birlikte granülatöz inflamasyon tablolarında spektrumun geniş değerlendirilmesi faydalı olabilir. Ayrıca, filamentöz alanlar için aktinomikoz düşünülmüştür. Actinomyces'ler oral florada yer alırlar fakat çeşitli nedenlerle mukozaya girmesiyle Aktinomikozu yol açabileceği unutulmamalıdır. Filamentöz görünümü ile bazen fungal enfeksiyonları taklit edebilir ve bu açıdan hem histopatolojik hem de histokimyasal çalışma gerekliliği oluşabilir. Burada klinik ve radyolojik olarak odontojenik kist olduğu düşünülen ve histopatolojik olarak kolesterol granülomu ve aktinomikoz birlikteliği olan bir olgu sunuldu.

Anahtar Kelimeler: Kolesterol; granülom; aktinomikoz; mandibula; Aarıcı tanı.

Introduction

Cholesterol granuloma (CG) is the tissue reaction formed by cholesterol crystals in different tissues (1). These are unusual benign lesions. These lesions can rarely be seen in many different places besides the petrous apex, middle ear and mastoid, temporal bone (2). In these CGs, a cystic structure surrounding the cholesterol crystals is generally covered with foreign body giant cells. The growth patterns that occur are very variable. The reason for this variability is the frequency and severity of microhemorrhages that occur inside. Most of

these lesions can take years to grow. They contain a brown sand-like liquid composed of cholesterol crystals and other elements from blood breakdown and have an encapsulated, cystic appearance (2). Male / female ratio in CG is reported to be 3: 1. It is more common in middle-aged patients. The average is 38 years old, the age range is between 27 and 56 (3). Actinomycosis is caused by a gram-positive anaerobic pathogen. It is generally seen to be caused by Actinomyces israelii (the most commonly isolated). The cervicofacial form, the most common form of actinomycosis in the head and neck location.

Differentiation of inflammatory lesions of this area may sometimes be difficult (4) and additional investigations may be required. Although there are mostly periapical reports, mandibular involvement has also been reported (5). In this article, a case with a diagnosis of cholesterol granuloma and actinomycosis located on the mandibular, which is thought to be an odontogenic keratocyst clinically, is presented.

Case

56-year-old male patient was admitted to the clinic with the complaint of swollen gums. Computed Tomography (CT) evaluation was recommended as a result of clinical evaluation. In the CT evaluation made to the case, it was stated that, in the left mandible corpus, there is an appearance that may be compatible with the molar tooth in its internal structure, measuring approximately 50x19 mm, and also the hypodense lesion area where air images that create leveling are observed. It was observed that the lesion area created a slight destruction of the mandibular cortex posterior, and histopathological evaluation was recommended because it was found suspicious for odontogenic cyst. As a result, an excisional biopsy was performed with a pre-diagnosis of odontogenic keratocyst and sent to our department. In histopathological evaluation, granulomatous inflammation surrounded by foreign body giant cells, chronic inflammatory cells, free bleeding areas, as well as hypha-like tangles around the cholesterol cleft were observed.

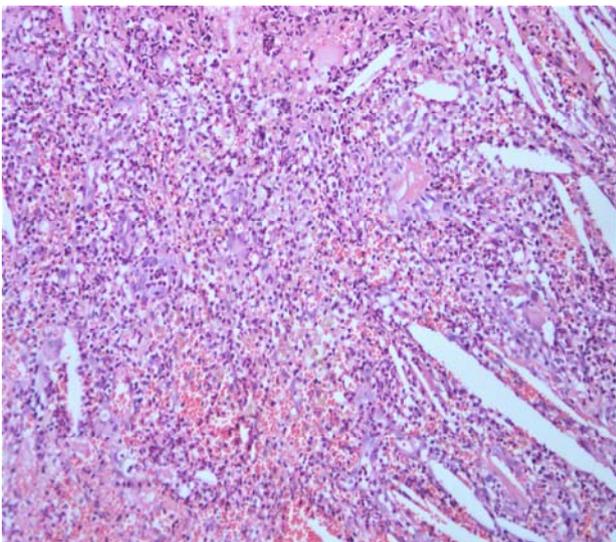


Figure 1. Cholesterol clefts, multinuclear giant cells and granulomatous inflammation with dense acute inflammatory cells around it were observed (H & EX200).

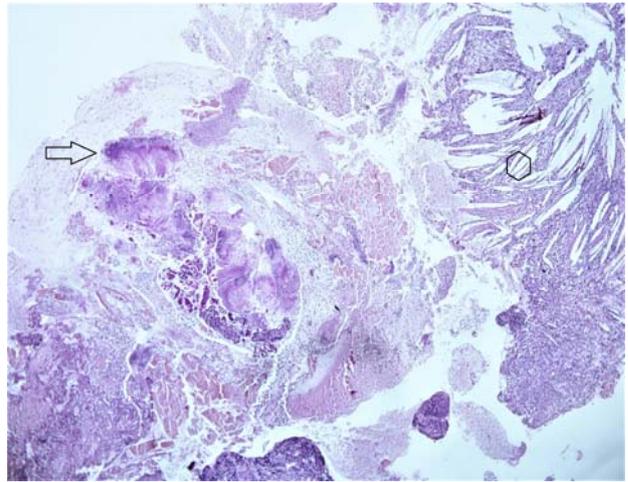


Figure 2. Cholesterol granuloma on the right (marked with a hexagon), filamentous areas of actinomycosis on the left (marked with a arrow) (PASx40).

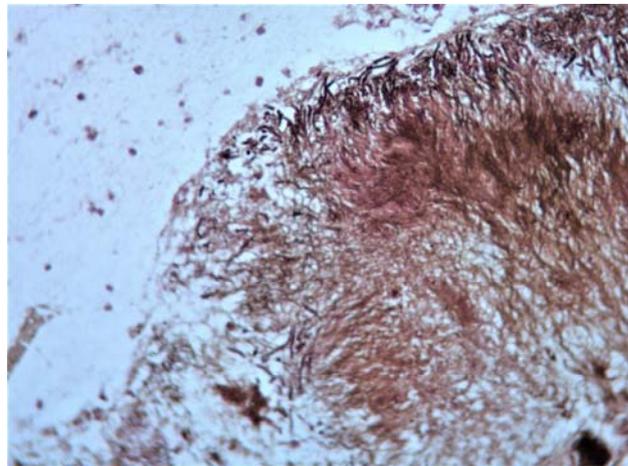


Figure 3. Sulfur granules with filamentous areas of actinomycosis (PAS-MX400).

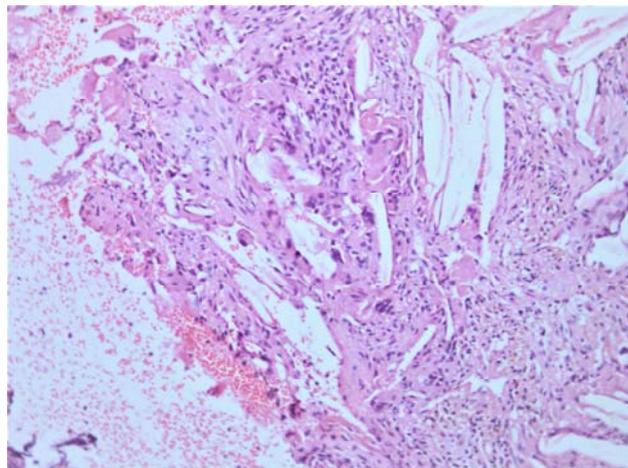


Figure 4. Cholesterol clefts, granulomatous inflammation with multinucleated giant cells (H & Ex200).

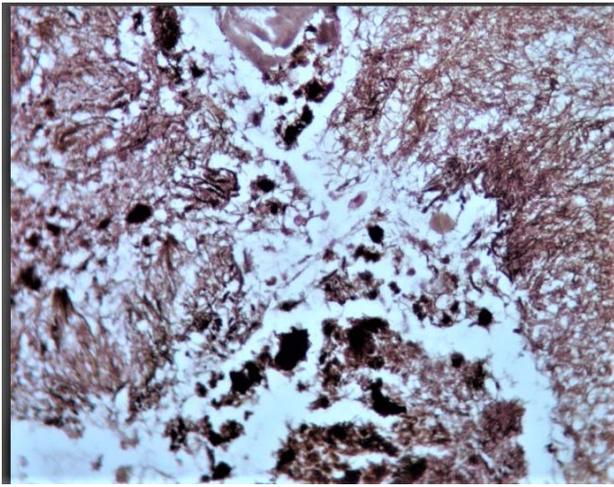


Figure 5. Filamentous structures in sulfur granules (PAS-MX400).

These tangles were evaluated closely and histochemically PAS and PAS-M were performed. These changes; clusters of basophilic filamentous bacteria in a faint rosette-like configuration surrounded by acute inflammatory cells were observed. Sulfur granules were observed by histochemical staining, and filamentous bacilli stained positively with PAS-M and Periodic acid-Schiff stain (PAS) were also shown. It was evaluated as actinomycosis (figures 1-5). Case presentation has been discussed as a histopathological evaluation. Informed written consent was obtained from the patient.

Discussion

There are publications in the literature regarding the inconsistency between clinical and histopathological diagnoses of periapical lesions (5). Again in the literature, it has been reported that the proportion of cysts among periapical lesions ranges from 6% to 55% and granulomas vary between 45% and 94%. When the reasons for these histopathological and clinical changes are questioned; It was stated that the selection of lesions, sample size, diagnostic criteria, chronicity and size, previous treatments and surgical techniques may be important (5). Cholesterol granulomas vary between 18-44% among periapical lesions. Cholesterol clefts were always surrounded by foreign body giant cells (6). It is stated that macrophages and foreign body type giant cells do not remove cholesterol deposits, as in Nair's study (6). The inability of phagocytic cells to digest cholesterol crystals remains the subject of research. Although a cholesterol granuloma is benign, it can thin the bone according to its location and have serious

consequence that can cause mortality. It may cause confusion with other radiologically expanding lesions (7). However, histopathological distinction can be easily recognized when adequate evaluation is made. Although the pathogenesis of CG is a controversial issue, it has been stated that it may be secondary to inadequate lymphatic drainage, insufficient ventilation, trauma, surgery, sinusitis and odontogenic lesions and bleeding (8). In studies conducted, periapical granuloma in 0.8% of the samples and bacterial clusters were seen in 6.9% of the periapical cyst samples. Presence of extraradicular infection other than actinomycosis still controversial (5). He drew attention to periapical microbial contamination in the study conducted by Nair (6). Actinomycosis may be one of the etiologies leading to periapical radiolucency appearance. Actinomycosis has been reported in periapical cases (6). Actinomycosis can cause illness in humans and animals. Usually Actinomyces and Propionibacterium cause this disease. It is a chronic process and causes granulomatous inflammation (9). Clinically, human actinomycosis is localized in the thoracic and abdominal, as well as the cervicofacial. The detection rates are as follows; 60%, 20%, 15% (10). In this case report, histopathological findings of actinomycosis were observed with CG. Although association with infectious conditions is rare, this condition is usually associated with chronic sinusitis. Sarioglu et al reported the association of CG and aspergilloma in their study (11). As discussed by Sarioglu et al., in our case, coexistence was considered as an association of two diseases rather than a common pathogenesis. In granulomatous inflammations, radicular cyst may also be one of the causes and sometimes associations can be seen. Radicular cyst is the most common cystic inflammatory lesion among odontogenic cysts. It ranks second among periapical lesions (after periapical granuloma). Sometimes it can be met with resistance in the treatment of radicular cyst. The cause of this resistance may be actinomycosis. Therefore, actinomycosis should be kept in mind in the histopathological evaluation of inflammation (12).

Conclusion

Periapical granulomas and cysts are the two most common periapical lesions. Although the most frequently affected area is the maxillary anterior region, they can be seen all over the body. In this case, a case located in the mandible is presented. It can have critical consequences in terms of its placement in vital areas. CG and actinomycosis should also be considered in the differential

diagnosis of radiolucent lesions. Histopathological evaluation may be indispensable for diagnosis in dental lesions as well as radiological evaluation.

Informed written consent: Written from the patient for this study informed consent was obtained.

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