

The Treatment of Ameloblastoma with Decompression

Ameloblastomanın Dekompresyon ile Tedavisi

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ABSTRACT Ameloblastoma is a rare, benign and locally aggressive tumor. Although it generally develops slowly, it is locally invasive, but in advanced cases it causes a morbidity and may even result in death in some cases. The aim of this study is to evaluate the effectiveness of decompression, which is a non-invasive method, in the treatment of unicystic ameloblastoma. A 28-years-old male patient was referred to clinic with swelling in the right cheek area. Radiographic examination showed a radiolucent area which extended from the mandibular second molar tooth to condyle neck, including an impacted wisdom tooth. Incisional biopsy was done under local anesthesia and decompression treatment was applied immediately by placing acrylic obturator. After the histopathologic examination, the diagnosis of unicystic ameloblastoma was made. Radiographic follow-up was performed routinely during decompression. After 8 months, the shrunken lesion was removed surgically. No recurrence was observed during routine follow-up. Decompression is a very important treatment option in the treatment of unicystic ameloblastoma because it protects the surrounding vital structures and is well accepted by the patients.

Keywords: Ameloblastoma; decompression; conservative treatment

ÖZET Ameloblastoma; nadir görülen, benign ve lokal agresif bir tümördür. Yavaş gelişim göstermesine rağmen lokal invazivdir ve ilerlemiş olgularda morbiditeye neden olabilmekte, hatta bazı olgularda ölümlü sonuçlanabilmektedir. Bu çalışmanın amacı, noninvaziv bir yöntem olan dekompresyon yönteminin, unikistik ameloblastoma tedavisindeki etkinliğini değerlendirmektir. Yirmi sekiz yaşındaki erkek hasta, sağ yanak bölgesinde bulunan şişlikle kliniğe başvurdu. Radyografik incelemede, mandibular 2. molar diştten kondil boynuna uzanan, gömülü yirmi yaş dişini içine alan radyolüsent alan tespit edildi. Lokal anestezi altında insizyonel biyopsi yapıldı ve aynı anda akrilik bir obturator yerleştirilerek, dekompresyon tedavisine başlandı. Histopatolojik incelemenin ardından unikistik ameloblastoma tanısı kondu. Dekompresyon süresince rutin olarak radyografik takip uygulandı. Sekiz ay sonra küçülen lezyon cerrahi olarak çıkarıldı. Rutin takipte rekürrens izlenmedi. Dekompresyon, unikistik ameloblastoma tedavisinde hem çevre vital yapıları koruması hem de hastalar tarafından oldukça kabul görmesi nedeniyle oldukça önemli bir tedavi seçeneği oluşturmaktadır.

Anahtar Kelimeler: Ameloblastom; dekompresyon; konservatif tedavi

According to the definition of the World Health Organization in 1992, ameloblastoma is a benign but locally invasive pleomorphic neoplasm with a proliferative odontogenic epithelium that consists fibrous stroma with a follicular or plexiform pattern, lies within fibrous stroma. This features also apply to unicystic ameloblastoma. Unicystic ameloblastoma is seen at younger age and on radiography, it can be seen unilocular like a cyst. It also responds to conservative treatments better.¹ The etiology of ameloblastoma is not fully known.² It is usually seen in young adults with a median age of 35 and shows no gender predilection.^{2,3} Cases are mostly located in

the mandible. The 70% of those seen in the mandible are in the molar teeth and ramus mandible region.⁴

Clinically, ameloblastoma is divided into 4 groups: unicystic, solid or multicystic, peripheral and malignant ameloblastoma.⁴ Radiographically, it is seen as a well circumscribed, slowly growing radiolucency. When multicystic ameloblastoma reaches large sizes, it can show infiltration to surrounding tissues, and recurrence or even metastasis can be seen.⁵

The main treatment approaches range from enucleation and curettage to extensive resection. In addition, treatment can be combined with options such

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as decompression, cryotherapy and Carnoy's solution.⁶⁻⁸ The aim of this study is to evaluate the decompression, which is a less invasive method in the treatment of unicystic ameloblastoma.

CASE REPORT

This study was conducted in accordance with Declaration of Helsinki principles and written informed consent was obtained from the patients who participated in this study. A 28-year-old male patient referred to the clinic with swelling in the right cheek area. In intraoral examination, a swelling was seen in a wide area in the posterior region of the mandible. Panoramic radiography and cone beam computed tomography examination showed a radiolucent lesion starting from mandibular 2nd molar tooth and extending to the condyle neck and containing impacted wisdom tooth (Figure 1). The patient underwent incisional biopsy under local anesthesia. After the incisional biopsy, decompression treatment was started immediately by placing acrylic obturator. The sample was examined histopathologically. In the sections, tumor tissue fragments with cystic structure are observed. The basal layer of the tumor was covered with columnar ameloblast-like cells with reverse polarization and on the top of this, there were epithelial cells like stellate reticulum. In these samples, no tumor invasion was seen in the wall. No anaplastic appearance or increased mitosis was detected in the cells (Figure 2). As a result of this examination, the diagnosis of unicystic ameloblastoma was made.

Routine radiographic follow-up was made during decompression (Figure 3). After 8 months, the impacted wisdom tooth in the shrunken lesion area was

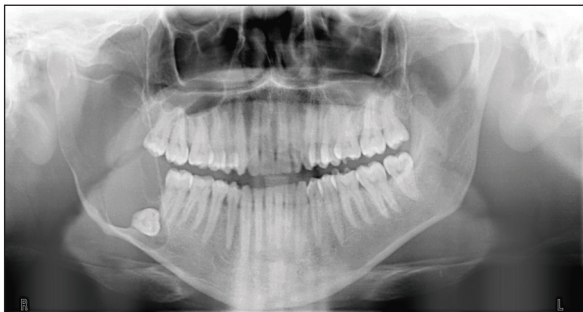


FIGURE 1: Radiographic image of unicystic ameloblastoma before decompression.

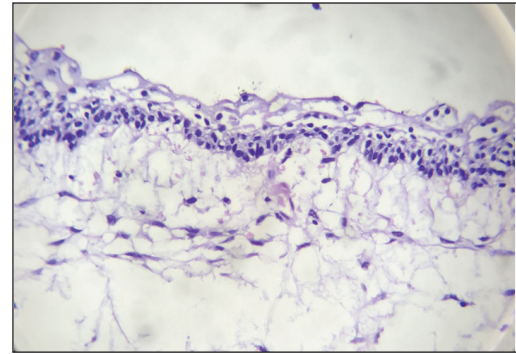


FIGURE 2: Histological features of the sample (HEX200).



FIGURE 3: Radiographic image of the lesion-3 months after decompression.

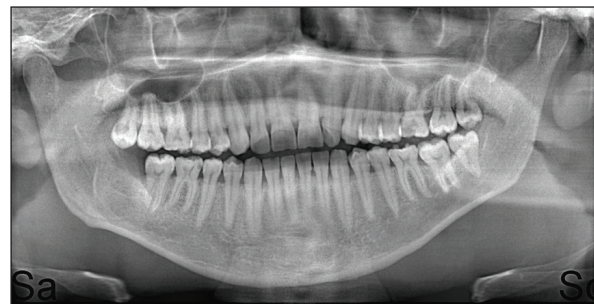


FIGURE 4: Radiographic image-2 years after the surgical removal of the lesion.

extracted and the lesion was enucleated. Peripheral osteotomy was done after enucleation. Histopathological evaluation of the enucleated lesion was the same as the first sample. After 2 years, it was observed that the lesion disappeared and no recurrence was occurred (Figure 4).

DISCUSSION

Ameloblastoma accounts for 10% of tumors in the maxilla and mandible.² In treatment planning, radical or conservative options are evaluated by considering a)

tumor size and location, b) clinical appearance, growth rate and adjacent structures, c) histological findings, d) recurrence, e) general health status and age.³

Radical resections such as marginal resection, segmental resection or composite resection can be performed in the treatment of ameloblastoma. As a result of radical resections the amount of bone or soft tissue associated with tumor decreases and the likelihood of recurrence reduces. However, damaging the inferior alveolar nerve and tooth extraction cause weakening of oral functions and a permanent paraesthesia in the lower lip.⁹

Procedures such as iliac crest bone graft and free fibula osteocutaneous flap harvesting may be required for oral rehabilitation after resection.^{10,11} However, the use of bone grafts in the treatment of large tumors has disadvantages. The amount of obtained bone limits the reconstruction of large resection areas, and unpredictable bone graft resorption can also be dangerous. In addition, bone grafts do not allow the reconstruction of soft tissue defects created by giant ameloblastomas.¹⁰

Decompression reduces the hydrostatic pressure in the bone cavity of the lesion and induces bone regeneration at the margins. This simple procedure allows the surgeon a less invasive approach, helping to avoid neurovascular structures that may be damaged.¹²

Decompression procedure can be applied in the treatment of unicystic ameloblastoma.^{13,14} Decompres-

sion, one of the conservative approaches, has disadvantages such as requiring second surgical procedure. However, decompression does not damage the integrity of the mandible and protects vital structures such as inferior alveolar nerve. This treatment, which is well accepted by patients, is an effective method. It is easy to perform and decrease the volume of odontogenic tumors like keratocystic odontogenic tumor and unicystic ameloblastoma.⁹ For those reasons, decompression was selected as a treatment in this case.

As a result, decompression of unicystic ameloblastoma is a conservative method and this procedure ensures the protection of surrounding structures and the continuity of oral functions.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

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