CASE REPORT

Peripheral osteoma in an unusual location on the mandible

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SUMMARY

Osteoma is a benign, slow-growing, painless, discrete lesion which is characterised with the proliferation of a compact or cancellous bone. Osteomas are rare on the jaws. Lesions of the mandible developed most often in the condyle, angle and margin. Osteoma developed on the genial tubercle area had only been reported in one case. A 50-year-old female patient has been admitted to our department with the symptom of a hard mass under the chin area. In extra-oral and radiographic examinations, a 1×1 cm size, round, palpable, immobile, radiopaque mass has been determined on the genial tubercle area. The lesion has been completely removed under local anaesthesia by extra-oral approach. Her recovery period was uneventful. Osteoma diagnosis was confirmed with histopathological examination. There is no recurrence at 3-year follow-up. The purpose of this case report is to present a peripheral osteoma case that occurred in the genial tubercle area which is an unusual place.

BACKGROUND

Osteoma is a benign, osteogenic lesion that is characterised by the proliferation of a compact or cancellous bone. There are three types of osteoma: central, peripheral and extra-skeletal.¹ While peripheral osteomas are periosteum and central osteomas are endosteum originated, extra-skeletal osteomas arise from soft tissues.² The pathogenesis of the osteomas is still not clear.³ They can occur at any age with equal incidence in men and women.^{4,5}

CASE PRESENTATION

A 50-year-old female patient without any systemic disease has been admitted to our department with the symptom of a hard mass under her chin. The painless mass has been noticed by the patient for the past 1 year and she has stated that the lesion is gradually growing. In the extra-oral examination, a hard, palpable and immobile lesion has been determined on the genial tubercle area. There was no deviation of the midline of the chin or any noticeable asymmetry with the effect of fatty tissue structure (figure 1). Regional lymph nodes were in normal sizes. There was no finding in the intraoral examination which belongs to the lesion.

INVESTIGATIONS

In order to eliminate odontogenic lesions, an orthopantomography was performed and an unclear radiopaque mass has been determined on the antero-inferior border of the mandible near the

canine tooth level. For more accurate diagnosis, it was decided to perform a cone-beam CT (CBCT) and a 1×1 cm, round, pedunculated, radiopaque, bone-related mass has been determined near the genial tubercle area (figure 2).

DIFFERENTIAL DIAGNOSIS

Differential diagnosis of the peripheral osteomas includes radiopaque masses, inflammatory and neoplastic originated various types of pathogenic lesions such as peripheral ossifying fibroma, periosteal osteoblastoma and osteoid osteoma.^{1,4,6} Radiopaque ossifying fibroma can mimic osteomas; however, they show low radiopacities in small sizes and is found exclusively on gingiva and is a reactive lesion commonly occurring in the maxillary anterior region which is firm in consistency.⁶ Periosteal osteoblastoma and osteoid osteoma are painful destructive mass with rapid growth, which usually occur in young patients and are rare in the maxillofacial regions.^{4,7} Diagnosing of the peripheral osteoma is much easier when compared to the other types because of its characteristic growth features and the clear radiological images.⁸

TREATMENT

In light of the clinical and radiological findings, it is decided to make an excisional biopsy under local anaesthesia with initial diagnosis of osteoma. After extra-oral linear incision and tissue dissections, access to the lesion has been obtained. The lesion has been separated from the mandible with the help of chisels (figure 3). Irregular bone tissues have been smoothed with diamond burs. The incision is sutured with 5/0 nylon sutures. Histopathological examination revealed mature compact lamellar bone trabeculae with a narrow intervening stroma (figure 4). Compact-type peripheral osteoma diagnosis has been confirmed.

OUTCOME AND FOLLOW-UP

Her recovery period was uneventful. There was no relapse observed in the 3-year follow-up (figure 5).

DISCUSSION

WHO has defined the osteomas as a benign bone neoplasm.⁹ Osteomas grow at a slow rate and they usually stay silent for years without showing any symptom or complication.¹⁰ Pathogenesis of the osteomas are still unknown. There are three theories that suggest developmental, neo-plastic and reactive origin. Not observing the lesions in the patients whom lesions have mostly completed their growth period is not in accordance with the theory

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Figure 1 Extraoral appearance.

Figure 2 (A) Orthopantomography; (B) 3D CBCT image; (C) coronal CBCT images. CBCT, cone-beam computerised tomography.

Figure 3 (A) Surgical exposure; (B) excised lesion.

Figure 4 Mature compact lamellar bone trabeculae with a narrow intervening stroma were observed in histopathological examination (H&E $\times 100$).

of lesion being developmental. Neoplastic theory conflicts with the fact of lesion having an extremely slow growing character. Under these conditions, reactive theory, especially, comes to front as the most possible option, while the cases accompanied with a trauma history.⁸ On the other hand, osteomas are also referred to as reactive lesions triggered by trauma, muscle traction, endocrinal pathologies or infection infiltration of interdental bone.^{6–11} In our case, there was no history of trauma or infection in the region reported by the patient.

Osteomas can occur in paranasal sinuses, skull and facial bones.¹² Solitary peripheral osteomas affecting the mandible are rare. It occurs on the mandible in posterior body, lingual aspect

Figure 5 Follow-up orthopantomography (36 months).

of the body, inferior border of the condyle, inferior–lateral region of angle, ascending ramus, coronoid process, anterior body and sigmoid notch.^{6 8 11} However, in our case, the lesion has occurred on the genial tubercle area. To the best of our knowledge, Richard *et al*¹³ reported a unique case of peripheral osteoma that occurred on the genial tubercle area. This report is the second case of peripheral osteoma on the genial tubercle area.

In radiography, they seem like a round or oval, radiopaque mass that has very specific boundaries. Orthopantomography or water's graph can give an idea about the location of the lesion. Having a CBCT is rather beneficial for a certain localisation and determining the relations with anatomic structures. Osteomas can be of three different histological types: compact (ivory), cancellous (trabecular, spongiform) and combination of both (mixed). Compact osteomas are dense and comprise few marrow spaces with only a few osteons. Cancellous osteomas are characterised by bony trabeculae and fibro-fatty marrow enclosing the osteoblasts, similar to a mature bone.^{1 4} As it is seen according to the histological imaging, our case matches with the compact type.

Patients with osteomas should be evaluated for Gardner's syndrome. Possible findings in Gardner's syndrome includes multiple osteomas particularly of facial bones and skull, supernumerary or multiple impacted teeth, intestinal polyposis with a marked malignant transformation potential; sebaceous cysts of skin; and fibromas and fibromatoses of soft tissues. Since Gardner's syndrome is genetically driven, new osteomas can develop after several months or years. Close follow-up every 4–6 months is critical for patients with Gardner's syndrome.^{1 5 7} In our case, there was no finding related to Gardner's syndrome, no multiple osteomas, no dental or skin anomalies, no history of pain and no intestinal symptoms. Symptoms of Gardner's syndrome were not detected in any other examined family member and data showed no other family member had unerupted teeth.

Osteomas are treated with local excision. There were only two relapse cases in the literature and no malignant transformation reported.^{14 15} Since a relapse is very rare, patient follow-ups are made usually to evaluate new osteomas or Gardner's syndrome symptoms.⁴ In our case, there were no findings related to any kind of relapse or new osteoma formation.

Learning points

- ▶ Osteomas are benign, slow-growing, painless, distinct lesions that are characterised with the proliferation of a compact or cancellous bone.
- ▶ Osteomas are rare on the jaws. Lesions of the mandible developed most often in the condyle, angle and margin. To the best of our knowledge, this case report is the second osteoma case that is developed on the genial tubercle area of the mandible.
- ▶ Patients affected by osteoma do not experience any malignant change and recurrence after surgical treatment is rare.
- ▶ Diagnosing osteoma has lifesaving potential and patients with peripheral osteomas should be evaluated for Gardner's syndrome since osteomas can be seen in the earlier stages of Gardner's syndrome.

Contributors SK and MC are responsible for the treatment of the patient. SK is responsible for follow-ups. SK and MÖ involved in the preparation of the manuscript. EB is responsible for pathological evaluation.

Competing interests None declared.

Patient consent Obtained.

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