

Peripheral osteoma of the nasal bone after laser treatment

A case report

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Abstract

Introduction: Peripheral osteoma, which arises from the periosteum, commonly develops in the head and neck region and is found frequently in the mandible, maxilla, and paranasal sinuses. However, osteoma of the face, especially from the nasal bone, is quite rare.

Patient concerns: A 34-year-old female visited our outpatient department with a small mass on the nose. She had a laser treatment of nevus at the same spot 14 years before, and it had enlarged slowly since 10 years before.

Diagnosis: Computed tomography scan revealed a 0.7 × 0.5 cm sized radio-opaque tumor of the nasal bone.

Interventions: Under general anesthesia, surgical excision was performed through a transcolumellar and infracartilaginous incision. The excised tumor was a 0.7 × 0.5 cm sized hard mass.

Outcomes: Biopsy confirmed it as a peripheral osteoma. After tumor removal, structural stability of nasal framework including bone and cartilage was maintained, and symmetry of the nasal dorsum was acquired.

Conclusion: Chronic osteoma can compress the abutting structures. In the case of the nose, either structural instability or asymmetry can occur. By applying open rhinoplasty techniques, postoperative scars could be hidden and additional correction of the affected structure could be carried out if necessary. As a result, the surgeon can achieve the functional and esthetic outcomes simultaneously.

Abbreviations: CT = computed tomography, MRI = magnetic resonance imaging.

Keywords: Nose, osteoma, rhinoplasty

1. Introduction

Osteoma is a benign osteogenic tumor, arising from the proliferation of compact or cancellous bone.^[1] It can be central, peripheral, or of an extraskeletal type. Peripheral osteoma arises from periosteum and its etiology is still unclear; true neoplasia, hamartoma, reactional mechanism, trauma, or infection has been considered.^[2]

Peripheral osteoma commonly develops in the craniofacial region and is found frequently in the mandible, maxilla, and paranasal sinuses.^[1–4] However, osteoma of the face, especially arising from the nasal bone, is quite rare.^[5,6] This article reports a case of peripheral osteoma located on the nasal bone.

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2. Methods

We obtained the patient's medical records and reviewed the related literature. Informed written consent was obtained from the patient for publication of this case report and accompanying images. This study was approved by the Chonnam National University Hospital Institutional Review Board.

3. Case report

A 34-year-old female visited our outpatient department on account of a small mass on the nose (Fig. 1A). She had had a laser treatment of nevus at the same spot 14 years before, and it had enlarged slowly since 10 years before. On physical examination, a bulge was observed on the right side of the nose. It was a hard and fixed mass without tenderness. On the computed tomography (CT) image, a well-localized 0.7 × 0.5 cm sized radio-opaque tumor on the right side of the nasal bone was observed (Fig. 2A).

Under general anesthesia, surgical excision was performed through a transcolumellar and infracartilaginous incision. The nasal skin was elevated through the dissection in the supra-perichondrial plane, and around the keystone area, dissection proceeded in the subperiosteal plane. A hard, pedunculated mass fixed to the bone was visualized and removed via osteotomy. The excised tumor was 0.7 × 0.5 cm in size (Fig. 3A). Biopsy confirmed a peripheral osteoma (Fig. 3B). After tumor removal, structural stability of bony and cartilaginous nasal framework was preserved and symmetry of the nasal dorsum was acquired (Fig. 1B).

On the contrast-enhanced facial CT scan 6 months later, no remnant lesion or recurrence was observed (Fig. 2B).

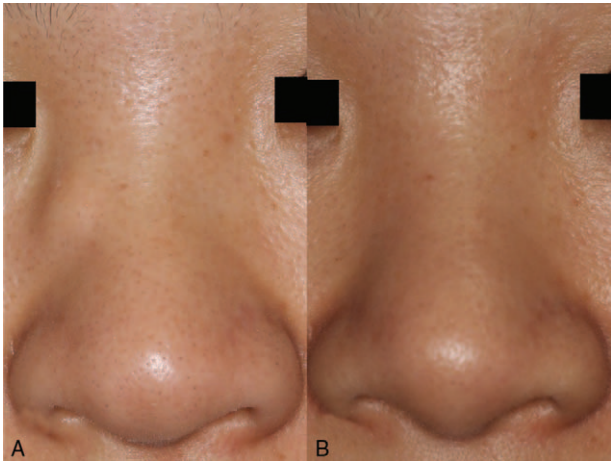


Figure 1. (A) Mass on the nose is seen in the preoperative photograph. (B) Postoperative scar was well-hidden, and the esthetic outcome including nasal symmetry was excellent in the follow-up photograph after 6 months.

4. Discussion

Osteoma is a benign, slowly growing osteogenic tumor, arising from the proliferation of compact or cancellous bone.^[1] Among them, peripheral osteoma arises from the periosteum, and its pathogenesis is multifactorial: true neoplasia, hamartoma, and reactional mechanism including trauma or infection.^[2] Iatrogenic injury to the periosteum during surgery or laser treatment could also provoke a peripheral osteoma.

Osteomas frequently develop in the craniofacial region, particularly in the paranasal sinus and mandible. They can cause asymmetry, malocclusion, headache, neuralgia, paresthesia, and ophthalmic symptoms in case of intraorbital extension.^[7,8] However, an osteoma arising from the nasal bone is quite rare,^[6] and is less likely to present with the above

symptoms. An osteoma of the nasal bone is usually painless and asymptomatic, and causes irregularity of the nose.^[5,6]

CT is the criterion standard diagnostic tool, and shows a radiopaque mass with demarcated boundaries. Magnetic resonance imaging (MRI) could be useful in intracranial or intraorbital involvement.^[3] In addition, multiple osteoma with intestinal polyposis should point toward the diagnosis of Gardner syndrome.^[9]

In incidentally detected, asymptomatic osteoma, treatment is not mandatory. However, if it is symptomatic or grows rapidly, surgical excision should be recommended.^[7] Osteoma of the paranasal sinus can be treated with external or endoscopic surgery. Endoscopic surgery in these cases is well established.^[3] However, no standard surgical procedure is available for cases of osteoma of nasal bone because of its uncommon occurrence. It can be excised through a direct skin incision right above the lesion, or using open rhinoplasty incision: transcolumellar incision with infracartilaginous extensions.^[5,6] The former is simple and straightforward but results in postoperative scarring. Hence, it is suitable for persons who are insensitive to esthetic outcomes, like the elderly population. The latter is delicate and more time-consuming, yet it could effectively hide the scar. In young or female patients, excision using the open rhinoplasty technique is more favored.

In the case of an osteoma of the nasal bone, chronic osteoma can compress the abutting structures: the nasal bone or nasal cartilages that form the shape of the nose. Furthermore, while resecting the osteoma, iatrogenic injury could occur to these structures. Either of them causes instability or asymmetry of the nose. Using the open rhinoplasty technique during osteoma excision in the nose, the surgeon can correct the asymmetry and reinforce the weakened part with various procedures: columellar strut graft, spreader graft, and so on.

Peripheral osteoma of the nasal bone is an occasional case. However, applying the open rhinoplasty technique, a surgeon could not only easily hide the operative scar, but also revise the functional and esthetic outcomes simultaneously during an excision.

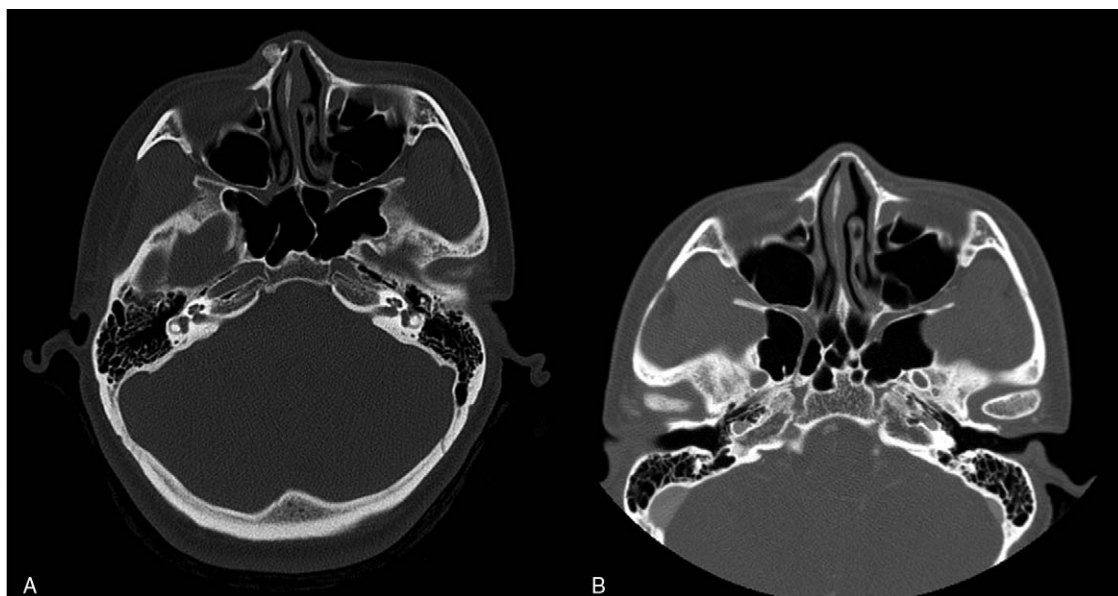


Figure 2. (A) In the preoperative facial CT scan, a radiopaque tumor was observed on the nasal bone. (B) Complete excision and no sign of recurrence in the follow-up facial CT scan after 6 months. Both nasal bones are symmetric and structurally stable.

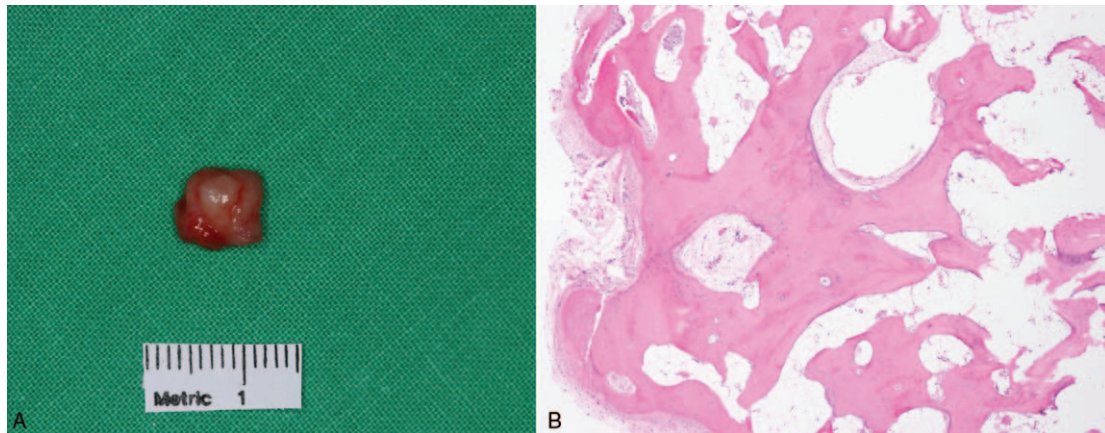


Figure 3. (A) A 0.7 × 0.5 cm sized solid tumor was excised. (B) Histologic examination showed trabeculae of mature bone and adipose tissue in the interspace of the trabeculae (hematoxylin and eosin, ×40).

Author contributions

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