Total Excision of an Intraosseous Zygomatic Hemangioma via Subciliary Approach

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ABSTRACT

Objectives: 1. To review the presentation and management of intraosseous hemangiomata of the face and malar regions. 2. To review advantages and disadvantages of surgical approaches for removal of these lesions, including the Weber-Ferguson, hemi/biconoral, extended transconjunctival, transoral gingivolbucal, and extended subciliary incisions. Study Design: Case report and review of the literature. Surgical, radiographic, and histopathologic findings are shown and discussed. Methods: We describe a case of a 44-year-old woman with a two-year history of a slowly-enlarging, tender mass over her right zygoma. Magnetic resonance imaging demonstrated a lytic, expansile lesion centered within the cortex of the zygoma at the zygomaticomaxillary suture. Results: Total excision of the mass was achieved through an extended subciliary incision. The lesion was dissected circumferentially out of the zygoma with a cuff of normal bone. Histopathologic examination revealed an intraosseous hemangioma. Conclusions: Intraosseous hemangiomas are rare, accounting for less than 1% of all osseous neoplasms. These benign vascular anomalies are usually found in the vertebral column or calvarium. Intraosseous hemangiomata of the zygoma are extremely rare, with less than 35 cases reported. Most patients seek treatment because of painless, slow-growing mass of the cheek. Because of the prominent location on the face, zygomatic hemangiomata can cause significant cosmetic deformity. Many options for reconstructing the underlying bony deficit have been described, including healing by secondary intention, hydroxyapatite with titanium mesh, and bony free flaps. These do not address the various external skin incisions that can result in undesirable facial scarring. We present a case of intraosseous zygomatic hemangioma in which total excision of the mass was achieved without a large transfacial incision for excellent cosmetic result. We describe the various options for external skin incisions, highlighting the advantages and disadvantages for each.

INTRODUCTION

• Intraosseous hemangiomata are rare, accounting for less than 1% of all osseous neoplasms.
• These benign vascular anomalies are usually found in the vertebral column or calvarium. Intraosseous hemangiomata of the zygoma are extremely rare, with less than 35 cases reported.1-3
• Most patients seek treatment because of a painless, slow-growing mass of the cheek. Because of the prominent location on the face, zygomatic hemangiomata can cause significant cosmetic deformity.
• Many options for reconstructing the underlying bony deficit have been described, including healing by secondary intention, hydroxyapatite with titanium mesh, and bony free flaps. These do not address the various external skin incisions that can result in undesirable facial scarring.
• We present a case of intraosseous zygomatic hemangioma in which total excision of the mass was achieved without a large transfacial incision for excellent cosmetic result.
• We describe the various options for external skin incisions, highlighting the advantages and disadvantages for each.

CASE DESCRIPTION

• A 45-year-old female presented with a bony protrusion of her right malar region which had been slowly enlarging over 2 years.
• She denied any history of trauma, and she had no hypesthesia, dysesthesia, or facial weakness.
• Physical exam showed a non-mobile, slightly tender bony mass of the right malar eminence without overlying skin changes.
• A computed tomography (CT) scan demonstrated an expansile, lytic lesion centered on the external cortex of the right zygoma. (Fig 1A-B). Magnetic resonance imaging (MRI) revealed the lesion to be isointense to muscle on T1-weighted imaging, and hyperintense with prominent enhancement on T2-weighted imaging, suggestive of hemangioma.
• Initially the lesion was observed closely. However, she began having increasing discomfort, and was taken to the operating room for diagnostic and therapeutic excision.
• She underwent complete excision of the zygomatic mass via an extended subciliary approach (Fig 2). The periosteum was elevated inferiorly off the face of the zygomatic arch, and a soft tissue lesion was noted to be eroding through bone. The lesion was removed with a cuff of normal bone in an en-bloc fashion. The underlying bone spicules were drilled to ensure a smooth surface remained. Total blood loss was ~40cc.
• Histopathology showed an intraosseous zygomatic hemangioma (Fig 3).
• At 11-month follow-up, the patient has no evidence of recurrence (Fig 4).

DISCUSSION

• Intraosseous zygomatic hemangiomas are very rare benign vascular neoplasms, most often presenting as painless, slowly-enlarging cheek masses on adult females. The differential diagnosis of these bony lesions includes fibrous dysplasia, osteosarcoma, multiple myeloma, and metastasis. It is important to recognize the vascular nature of hemangiomas preoperatively, as simple curettage or biopsy can result in significant bleeding.
• CT is the most useful imaging modality because of its characterization of trabecular and cortical detail. An expansile, lytic lesion with radiating trabeculae in a sunburst pattern, or a honeycomb or soap-bubble appearance with intact, smooth cortices is pathognomonic for intraosseous hemangioma.4
• A hemi/biconoral incision provides excellent exposure, but necessitates a large skin incision. The incision is usually hidden in the hairline. Possible morbidity includes anesthesia or paresthesia of the supraorbital or supratrochlear nerve (usually transient), need for drain placement under the flap, and potential exposure of a large scar in patients who develop baldness. Family history of baldness should be obtained, with consideration of modified incision placement in patients at high risk of future alopecia.5
• A Weber-Ferguson incision provides broad exposure, but necessitates a large transfacial incision. The incision is usually hidden in the hairline. Possible morbidity includes anesthesia or paresthesia of the infraorbital nerve. Complete excision of the mass was achieved through a single extended subciliary incision. This approach provides excellent exposure, but necessitates a large skin incision. The incision is usually hidden in the hairline. Possible morbidity includes anesthesia or paresthesia of the infraorbital nerve.
• An extended transconjunctival approach provides excellent exposure, but necessitates a large skin incision. The incision is usually hidden in the hairline. Possible morbidity includes anesthesia or paresthesia of the infraorbital nerve.
• A transoral/gingivolbucal incision with midface degloving has no cutaneous incisions. Access to the zygoma laterally and superiorly may be limited. Possible morbidity includes anesthesia or paresthesia of the infraorbital nerve.
• A combination of the above approaches should always be considered.

CONCLUSIONS

• Intraosseous hemangioma is a rare benign lesion of the zygomatic area, but can cause cosmetic deformity because of the prominent location on the face.
• As these are benign lesions, post-operative cosmetic deformities remain a significant issue when considering the surgical approach.
• There have been no reports of recurrence or significant bleeding when these masses are removed en-bloc with a margin of normal bone. Recurrence and significant intraoperative bleeding have occurred with curettage or partial excision.
• Thorough understanding of the many skin incision options is key. Adequate exposure should never be compromised for cosmesis, but the least invasive approach that will permit complete resection should be used.

REFERENCES