Commentary

Hemangiomas are benign vascular tumors that may involve any part of the body.[1] Primary osseous hemangioma is a rare bone tumor accounting for 0.7%–1.0% of all bone tumors.[2] It can occur at all ages but is most common in the fourth and fifth decades of life and has a female preponderance (3:1).[2] Intraosseous hemangiomas are usually found in the vertebral column and rarely seen in the calvarium (represent 0.2% of all osseous tumors).[1-3] The frontal bone is most commonly involved, followed by the temporal bone and less frequently by the parietal bone.[3] The first hemangioma found in the skull was described by Toynbee in 1845, and this condition was defined by Rowbotham from the histological point of view until 1924.[3,4] The pathogenesis is unknown but is believed to be either congenital or related to previous trauma.[5] Hemangioma is classified on the basis of the dominant vessel in capillary, cavernous, or mixed type.[2] These tumors are extremely benign, slow-growing, mostly asymptomatics.[1] Radiologic evaluation includes plain skull X-rays, computed tomography scan, magnetic resonance imaging (MRI) and angiography in some cases.[1,2]

In the article, "Frontal bone hemangioma in an eight year old: A common tumor in a rare location," Sharma *et al*. presented the case of a girl aged 8 years with pain and swelling over the forehead for 4 months with bony consistency and nontender without history of trauma. The X-rays revealed a lytic, expansive lesion involving frontal bone with sunburst pattern of bony spicules radiating to periphery of the lesion, and the MRI revealed a well-circumscribed lesion with both intra- and extra-cranial components in the midline of frontal bone, with heterogeneous signal intensity on T2-weighted images and heterogeneous contrast enhancement. The lesion caused mass effect and edema in the right frontal lobe but without evidence of intraparenchymal infiltration.[6] The case is relevant because this type of tumor is very rare in pediatric age.[7] The features found in X-rays and MRI are similar to those described in the literature (in the X-rays, the typical features are a "honey-comb" or "sunray" pattern, and in the MRI, high-signal intensity on T2-weighted and contrast enhancement).[4] However, it emphasizes the destruction of the inner table, its large size with mass effect and edema of the brain parenchyma,[6] with being rare. The definitive diagnosis only by radiological evaluation is not easy because many conditions involving bone tissue can appear as an osteolytic defect.[2] Differential diagnosis includes any firm, slow-growing mass of the skull with normal overlying skin such as fibrous dysplasia, meningioma, osteoma, osteogenic sarcoma, aneurysmal bone cyst, cholesteatoma, Paget's disease, Langerhans cell histiocytosis, osteitis fibrosa cystica, hyperparathyroidism, eosinophilic granuloma, dermoid cyst, and multiple myeloma.[2,3]

The surgery is the treatment of choice but not always necessary.[1] The indications for surgery include: a. correction of compressive effects; b. hemorrhage control; c. esthetic improvement, and; d. to discard malignant disease.[1] In the present case, surgical resection of the lesion was performed due to lesion size, its mass effect, and the presence of perilesional edema.[6] The first (unsuccessful) removal of a skull hemangioma was described by Ehrmann in 1847 (death after postoperative meningitis). The first successful removal of such a lesion with survival was reported by Pilcher in 1894.[3] The surgical procedure has low blood loss during the operation and a low recurrence rate after the operation. Resection should include a 1 cm width of the normal skull around the lesions.[1,4] Other treatments include curettage, radiotherapy, and embolization.[2,4] Curettage may lead to serious bleeding during the operation and recurrence after the operation. Radiotherapy is only able to prevent the tumor from growing and cannot eradicate the lesions. In addition, malignant transformation of intraosseous hemangiomas after radiotherapy has been reported. Therefore, these methods should only be applied in cases, in which it is not completely safe to perform removal.[2,4]

The histological examination of the specimen in the case report presented revealed osseous mixed-type hemangioma,[6] which it is the less common type. According to the study of Madge *et al*., which was included 45 cases of orbital intraosseous hemangiomas, only 3% were mixed type.[8]

The primary osseous hemangioma of the skull is a rare benign lesion of vascular origin. Because the imaging findings are not specific, histopathology may be essential. Surgery is indicated to differentiate it from malignancy, or when there are esthetic or compressive issues. *En bloc* resection must be attempted because relapse is rare when the surgery is successful.

Abraham Edgar Gracia-Ramos

Department of Internal Medicine, Specialities Hospital, National Medical Center "La Raza", Instituto Mexicano del Seguro Social, Mexico City, Mexico

Address for correspondence: Dr. Abraham Edgar Gracia-Ramos, Department of Internal Medicine, Specialities Hospital, National Medical Center "La Raza", Instituto Mexicano del Seguro Social, Seris y Zaachila S/N, Col. La Raza, Del. Azcapotzalco, C.P. 02990, México, D.F., México.
E-mail: dr.gracia.dmm@gmail.com

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