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## Lipoma of the Frontal Bone

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We report a patient with a lipoma of the cranial vault. The lesion was purely lytic and contrasted with the reactive marginal sclerosis that has been noted in many other intraosseous lipomas.

### Case Report

A 32-year-old woman was involved in an automobile accident, during which she hit the left frontal region of her head. Skull films revealed an asymptomatic lytic lesion in the general region of the trauma (figs. 1A and 1B). There was no external evidence of this lesion on physical examination. Neurologic examination was unremarkable and a bone scan was normal. A CT scan showed a low-density lesion between the outer and inner tables of the skull without extension in either direction (fig. 1C). The density of the lesion was  $-40$  H.

At surgery, a wide streak of yellow discoloration of the frontal bone was noted after elevation of the periosteum. This extended far beyond the confines of the lytic skull lesion and involved both the inner and outer tables. The dura was not involved. Upon microscopic exami-

nation, the outer table was normal, but the inner table contained a cystlike structure filled with mature-appearing adipose tissue. The bone marrow was normal.

### Discussion

Lipomas are one of the rarest tumors of bone [1, 2]. Dahlin [1] cited an incidence of less than one per 1000 cases. They arise from the medullary cavity and contain mature adipose tissue. While fracture, chronic infarction, and localized osteoporosis have all been proposed as etiologies, they are believed to most likely represent true benign tumors [2]. In a review of 28 cases, the average age was about 38 years (range, 5.5–70) [2]. Most of the lesions were identified in males and most patients were symptomatic, with either pain and/or swelling lasting 5 weeks to 30 years. The long bones were involved in 59% of these cases, most involving the metaphyseal or subchondral regions. The most common bones involved were the tibia and fibula. Most were lytic or

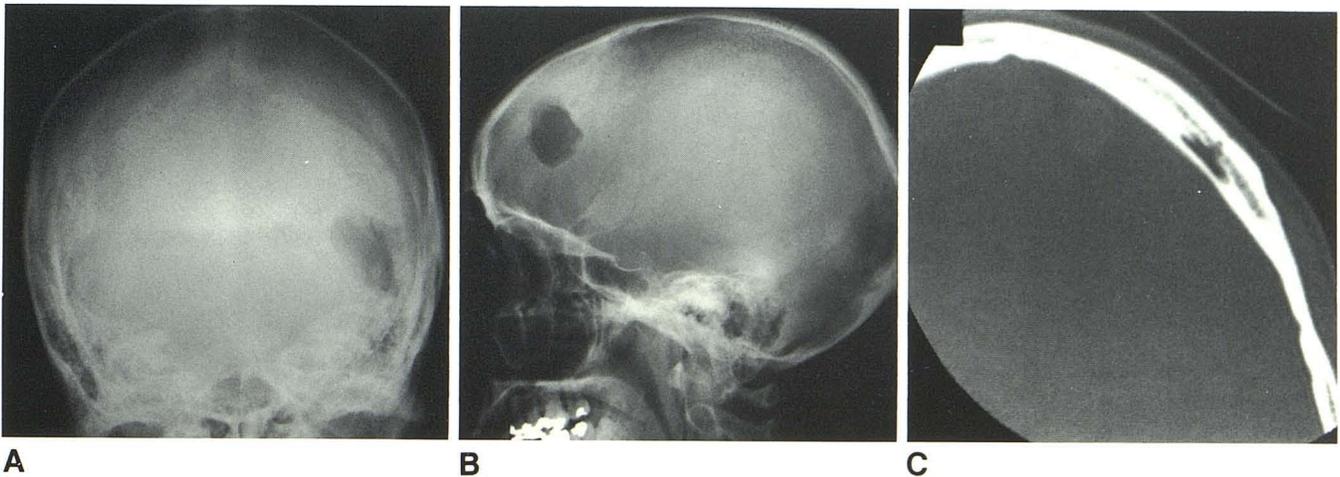


Fig. 1.—Frontal (A) and lateral (B) skull radiographs show well defined lytic lesion in left frontal bone without any reactive sclerosis at its margins. C, CT scan shows low-density lesion lying between tables of skull without extension in either direction.

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cystic and many of the lesions had bony trabeculae in them. Sclerosis was not a prominent feature; however, in one series of eight cases, all had surrounding reactive sclerosis [3].

Few lipomas have been identified in the bones of the face and calvaria. Specifically, there have been three prior reports of lipomas involving the frontal bones and one report of a similar lesion in the parietal bone [1, 4, 5]. Our patient had a purely lytic lesion, but reactive sclerosis has been reported in others, and in one case the lesion caused a uniformly increased density to the affected calvaria [4].

The differential diagnosis of this entity is that of solitary lytic lesions of the cranial vaults and comprises several entities: meningocele, meningoencephalocele, epidermoid, eosinophilic granuloma, hemangioma, meningioma, lytic fibrous dysplasia, leptomeningeal cyst and other posttraumatic defects, postoperative defects, lytic Paget disease, neurofibromatosis, giant cell tumors, and osteolytic osteogenic sarcoma [6, 7]. Erosions from intracranial masses, such as arachnoid cysts, porencephaly, or superficial glioma, should also be considered [6].

Our case serves to demonstrate once again the limitations of skull radiographs in evaluating lesions of the skull vault.

Although some lesions are characteristic and others highly suggestive as to diagnosis, a purely lytic lesion can be caused by many of the above, and biopsy is often required as an aid to diagnosis and management. The role of CT is also limited in the evaluation of bony lytic lesions of the skull but may be of value when the lesion is large and might extend into the scalp or brain.

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