far too high. More careful selection of cases for operation and more adequate surgical exposure will serve to reduce greatly the percentage of these nebulous causes of sciatic pain.

Operation should not be advised for all patients with the diagnosis of protrusion of the intervertebral disk. It is not advisable to operate unless the patient is in a severe attack which shows no signs of subsiding spontaneously. The surgeon should remember that for thousands of years patients have been recovering from attacks of sciatica without the benefit of surgery and that they will continue to do so. Operation should be reserved for those whose pain is incapacitating and does not respond to conservative measures, or in whom attacks recur at frequent intervals.

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PAGET'S DISEASE OF SKULL COMPLICATED BY MUCOCELE OF FRONTAL SINUSES

Report of a Case

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More than sixty years ago Sir James Paget described the bone disease which bears his name. His term, osteitis deformans, which is widely used today seems to me a misnomer; the existence of infection is doubtful and frequently there is no deformity.

In the advanced stages of the disease skeletal changes are striking, with the classic signs of massive head, reduced stature, anteriorly bowed legs, and marked kyphosis. However, advanced cases are uncommon. Less advanced cases in which the disease is localized, often limited to one bone, are seen more frequently. Although the skull has long been considered the site of greatest predilection, the spine and pelvis are frequently involved, as has been demonstrated in recent years by routine x-rays of the gastrointestinal and genitourinary tracts.

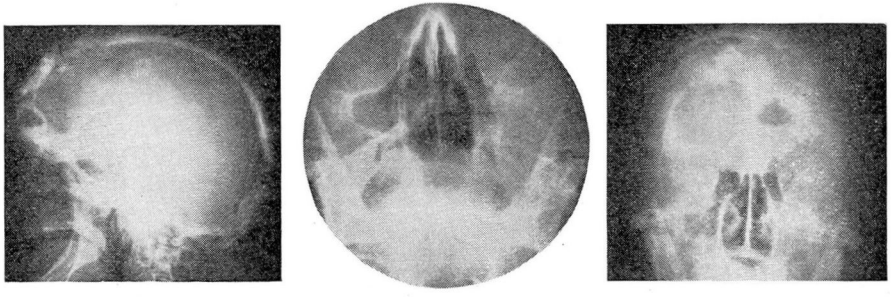
Complications. Of the many complications of Paget's disease the occurrence of fractures from minor trauma is the most common

and is often the first symptom of the disease. Neurologic symptoms result from changes in the skull as manifested by the high incidence of deafness due to bony encroachment upon the auditory nerve. Neuralgia involving chiefly the infraorbital and supraorbital branches of the fifth cranial nerve and compression of the spinal cord have also been observed. The relation of malignant tumors of the bone to this disease is not definitely established.

CASE REPORT

A white woman, aged 66, came to the Cleveland Clinic on August 20, 1942 complaining of a discharge of pus from a sinus tract in the midportion of the left upper eyelid and painless swelling over the left eye, both of four years' duration. There was also a painful swelling over the right eye of approximately two weeks' duration. She did not complain of headache. She had noticed a gradual increase in the size of her head for many years. Diplopia had been present about two years.

Laboratory tests revealed normal blood calcium and blood phosphorus levels but an elevated concentration of serum phosphatase (24 Bodanski units per 100 cc.). Results of other laboratory tests were of no diagnostic significance. Roentgenograms of the head



A B C

FIG. 1. (a) Lateral view of skull showing bone changes of Paget's disease and fluid level in frontal sinuses. (b) Anteroposterior view of maxillary sinuses showing cloudy left antrum and bone changes of Paget's disease involving left antrum and orbital region. (c) Anteroposterior view of skull showing cystic enlargement of right frontal sinus and fluid level in frontal sinus.

confirmed the diagnosis of Paget's disease of the skull and revealed a cloudy left maxillary sinus and bilateral cystic enlargement of both frontal sinuses (fig. 1). There was no other skeletal evidence of Paget's disease such as bowing of the legs or kyphosis of the spine.

Pus was removed from the left maxillary sinus by irrigation. An intranasal antrotomy under local anesthesia completely eradicated the infection.

One month later a bilateral external frontal operation of the Jansen type was performed. The anterior wall of the left frontal sinus was of eggshell thickness with dehiscence and a sinus tract leading through the left upper eyelid. A probe could be passed through this sinus tract into the frontal sinus, which was filled with thick, green pus. Upon aspiration the posterior plate was found to be intact, but there was a dehis-

cence of bone on the medial wall, which communicated with the right frontal sinus. The incision was extended over the right frontal sinus through the right eyebrow. Exploration revealed cystic enlargement of the frontal sinus and erosion of the posterior plate. The dura was exposed over an area approximately 2 cm. square. The lining cystic membranes and the bony floors of both sinuses were removed. In spite of careful search no nasofrontal ducts could be identified. An intranasal opening was made on each side through the ethmoid labyrinth and a rubber catheter extending into the nose

A B

FIG. 2. (a) Photograph showing displacement of right eye inferiorly and laterally. Pus can be seen exuding from fistulous tract above inner canthus of left eye. (b) Same view of patient six weeks postoperatively.

placed in each frontal sinus. The bone was spongy, thickened, and vascular. Bleeding was profuse throughout the operation.

The rubber catheters were removed on the twenty-first postoperative day. The infections in both frontal sinuses subsided, the palpebral fistula remained closed, and the diplopia gradually disappeared. The patient made an uneventful recovery and is now entirely symptom free (fig. 2). Upon irrigation the return from both sinuses is clear.

SUMMARY

This patient had an unusual complication of osteitis deformans, or Paget's disease of the skull. From the history and findings at operation it appeared that the patient first had Paget's disease of the skull with subsequent encroachment upon the nasofrontal ducts, followed by formation in both frontal sinuses of bilateral mucocele, which became infected.