

about the brow supervene, otitis and external periostitis are likely present.

A few points in Differential Diagnosis.—Acute, simple orbital periostitis generally follows direct violence, and an exploratory incision and the probe would clear up the diagnosis. The fistula following the evacuation of "abscess" of the frontal sinus discharges mucus or muco-pus, which would not appear in the sinus of periostitis or caries. In abscess of the eyelid there is no tenderness of the bony orbital margin, and fistula does not ensue. In orbital cellulitis there is marked swelling of the lower lid as well as the upper, and the globe is pushed directly forward, the conjunctiva being chemotic.

In acute inflammation of the lachrymal sac (a dacryo-cystitis), there would likely be a history of epiphora and mucocele, and the swelling begins at the site of the sac, pressure upon which intensifies the pain, while the adjacent bone is insensitive.

Again, in the chronic distension of the frontal sinus the external swelling is mainly at the upper inner angle of the orbit, the brow is prominent, and the orbital plate is depressed, the eye being displaced downwards, outwards and forwards; but one has sometimes to make an exploratory incision, and use finger and probe in order to differentiate from orbital growths, and also to detect disease of the ethmoidal cells, which may occur alone, or in connection with that of the frontal sinuses, or a large cavity resulting.

Whenever the frontal and ethmoidal sinuses become inflamed there is likely some congestion of the overlying dura mater;* and it is highly probable that in the more serious cases—which may recover—there is a localized meningitis. A fatal case is now and then reported in which a purulent discharge had occurred from the nose, or naso-pharynx, doubtless originating in the frontal or ethmoidal sinuses, and *post-mortems* prove that fatal secondary meningitis is at least occasionally associated with purulent inflammation of the ethmoidal or frontal sinuses. (See case below).

*The discomfort and dull headaches of some catarrhal subjects may be ascribed, in part at least, to this cause.

Treatment.—In acute catarrh or periostitis of the sinus, besides the ordinary attempt to abort the nasal catarrh and fever by opium *et al*, diaphoresis with pilocarpine, or the Turkish or home-made vapor-bath, general rest in a warm, dry air of equable temperature, the exhibition of aconite and belladonna, the nasal mucous membrane should be kept under cocaine, applied in solution, or as snuff with pulv. acaciæ, or in form of ointment or bougie, and hot anodyne stupes be applied to brow, or dry cold or heat by aid of Leiters' metal coil. Local depletion by leeching has done me good service. If serious symptoms persisted in spite of such measures fairly tested, it would not be meddling surgery, but would be in order, to incise to the bone under the brow, and then carefully tap the sinus.



In cases of chronic inflammation and distension of frontal sinus, the proper course is to evacuate, drain and medicate: incise to the bone just beneath the inner end of the brow, drill through the orbital plate, (avoiding pulley) of external oblique, or utilize existing openings, then perforate the floor of sinus into nose by means of a curved trocar or director, and insert a drainage tube, the free ends being fastened above the brow and without the nostril respectively. The tube is left in situ for several weeks or months, according to circumstances, and the sinus is flushed with antiseptic and astringent injections p.r.n. After a time (variable) when the lower opening has cicatrized the tube may be withdrawn and a stylet worn so that further medication may be effected, although the general rule is to retain the tube