CLINICAL NOTE

FRONTAL SINUS VENTILATION

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By means of a manometer attached to a cannula inserted into the Antrum of Highmore, O'Malley has demonstrated the variations of air pressure in the cavity resulting from respiration. The following observation was made during the course of an operation on the Frontal Sinus and is recorded firstly because I have been unable to trace any record of a similar observation, and secondly because of its possible bearing on Vacuum Frontal Headache.

13.12.38. R.W., age 35, the subject of an accident complained of headache of three years' duration, confined to the left fronto parietal region, persistent in character and unaffected by posture. A blow over the left eye in November 1937, caused increase of pain. Ophthalmic and medical examinations were entirely negative. The cerebrospinal fluid was normal and Wasserman re-action negative. X-ray revealed a small shadow regular in outline in the medial portion of the frontal sinus. The Radiologist reported, " An abnormal shadow suggesting the presence of tumour projecting into the left frontal sinus. Stereoscopic examination confirms the opacity, but it does not appear that it is situated in the cranial cavity."

At operation a small trephine opening was made in the floor of the frontal sinus and the bone removed without damage to the sinus lining. The membrane was normal in appearance and moved with respiration, the excursion being very definite and markedly increased by the administration of CO_2. Protrusion occurred with expiration and recession with inspiration.

Examination of the frontal sinus cavity failed to reveal the presence of a bony tumour and no cause was found to account for the X-ray opacity.

With such well marked ventilation in a cavity, the entrance to which is through a comparatively long and narrow duct, it is not difficult to visualise the possibility of a blockage of the duct leading to a partial vacuum.

In Eustachian Obstruction such a vacuum does arise, with the familiar symptom of fullness of the ear. The results of blockage of the fronto-nasal duct cannot be quite analogous, because all the walls of the frontal sinus are bony, and immobile, but nevertheless it does seem reasonable to suppose that a partial vacuum will result, and that this will cause headache.

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