

itis; it is usually not observed or only slightly marked in uncomplicated sinus thrombosis. It is sometimes found with extradural abscess.

J. D. Richards* has observed papillitis in three cases of extradural abscess, in all of which it was on the affected side. In sinus thrombosis he places the percentage in the neighborhood of five, and observes that in his experience neuritis is most frequently seen in jugular thrombosis.

In cavernous sinus thrombosis, due to the passage of infection from the middle ear by the carotid canal, or by infective thrombosis of the superior petrosal vein, oedema about brow and orbit, exophthalmos, paralysis of extra ocular muscles, oedema of the lids, chemosis of conjunctiva, and choked disc on the side of the chronic aural suppuration, are seen. Oedema of the eyelids has been reported as occurring as the result of extensive involvement of the zygomatic cells.

It is generally agreed that nerve changes associated with aural disease mean the extension of the aural lesion into the interior of the skull, and it is doubtful if simple uncomplicated suppuration of the tympanum does produce any change in the optic disc.

Nystagmus occurs as a reflex from irritation or disease of the semi-circular canals, and is manifested by horizontal or rotatory oscillations of the globe, depending on the extent of the canal system involved.

It has been shown that movement of the endolymph from the convexity of the right horizontal semi-circular canal to its ampulla caused horizontal nystagmus to the right, while movement of the fluid in the opposite direction produced nystagmus to the left. Similar experiments carried out on the vertical canals produced nystagmus corresponding to their direction. Vestibular nystagmus is characterized by two movements: a slow deviation in one direction—the slow phase—followed by a quick movement in the opposite direction—the quick phase.

These movements Barany was able to produce by injecting cold or hot water into the external auditory meatus or by rotating the subject on a revolving stool. When the vestibular apparatus is destroyed or the vestibular nerve is paralyzed no nystagmus follows the syringing.

Nystagmus may also be produced by condensation or rarefaction of air in the meatus, but this is obtainable only when there is a fistulous communication with the labyrinth. Labyrinthine disease is manifested by nystagmus of a spontaneous character, and is due to the upsetting of the normal balance of