

Iodine baths may also be used. If iodine cannot be borne, or fails to produce any good effect, steel and bitter tonics may be substituted for it. A seton or issue may be applied to the arm or back of the neck. Blood-letting and other antiphlogistic remedies are inapplicable, unless the case is attended with acute symptoms indicative of inflammation. The diet should be nutritious without being stimulating, and the child should be out as much as possible in the open air.

Although the tubercles of the brain and membranes most commonly occasion the dangerous symptoms before described, it may happen that they produce only slight derangement of the cerebral functions, or go through their whole course without giving rise to symptoms leading to the suspicion of disease in the encephalon. The pathological anatomy of latent tuberculation is the same as that of regular meningitis, with the addition of appearances of chronic inflammation of the meninges.

Whether tubercles arise primarily in the bony tissue, or in the brain or its membranes, they occasion alterations in the cranial parietes when they come in contact with the bone. When the tubercle originates in the membranes and consecutively extends to the bones, it corrodes and at last perforates them. When it originates in the bone itself, it may be encysted or infiltrated, and produces disorganization of the bony tissue, the result of which is also perforation, and the establishment of a fistulous opening by which the cranial cavity, or that of the organs of senses, communicates with the external air. When tubercles are situated upon the orbit, or cribriform plate of the ethmoid bone, they may occasion serious disease of the eye or exophthalmia, or destruction of the interior of the nasal fossæ. In four cases we have found complete destruction of the membrane of the tympanum. The internal ear was converted into a large hollow filled with a thick greenish fluid, with a number of small portions of bone floating in it. In three of the cases it was impossible to discover any vestige of the parts belonging to the internal ear; whilst in the fourth, a large splinter, detached from the interior of the petrous portion of the temporal bone, contained the cochlea and part of the semicircular canals. We also found the auditory and facial nerves, where

they enter the auditory foramen; but could not trace them into the interior of the abcess. In two cases the petrous portion of the temporal bone, examined at the interior of the cranium, presented no appreciable alteration; the dura mater retained its ordinary color and consistence; it was detached easily from the bone; the bony tissue beneath it showed no trace of vascularity; in the other two cases the dura mater was diseased. In two, there was a large perforation behind the ear, communicating with the interior of the auditory foramen.

It is difficult to determine from what point these serious lesions take their origin, but we are inclined to the opinion, that the bone is primarily affected. Two encysted tubercles were very evident on the side of the large cavity above described. The encysted tuberculous matter probably became softened, and this softening converted the internal and middle ear into a single cavity bathed in pus; and afterwards the membranes of the tympanum became ulcerated, and allowed the pus to escape externally. In none of the four cases was the disease of the bone similar to caries; the bony tissue was neither black, soft, nor crepitating, but only infiltrated with pus or separated into large sequestra. The substance of the brain in the vicinity of the diseased petrous bone was healthy, except in the cases in which the dura mater covering its posterior surface had been destroyed or inflamed. All four children were scrofulous in the highest degree.

*Symptoms.*—After the occurrence of suppuration, and the escape of pus from the ear for two or three months, paralysis of the face supervenes; but it is limited to motion, the sensibility of the integuments remaining. This symptom is of great importance, since it clearly indicates disease of the osseous structure around the motor nerve of the seventh pair. It is important also to notice whether any small portions of bone escape externally with the discharge.

The prognosis of tubercular disease of the petrous portion of the temporal bone is always unfavorable; because, on the one hand, this affection leads us to apprehend the existence of tuberculation of the brain and other organs; and on the other, because it never can be cured without complete deafness, even supposing it limited to the petrous bone.