

noying for distant objects, while an object brought very near the eye may be seen correctly. If the fourth nerve is paralyzed a superficial inspection may fail to recognize the defect in mobility. It will be detected with certainty by careful study of the double images. To do this it is better to take a lighted candle for an object, and to put a slip of red glass before one eye. There may be no diplopia in the field above the horizontal line, but, as the eyes descend, double vision occurs, one image (the false one) being below the other, and, as the object is carried to the temporal side of the affected eye, the images, besides being above one another, separate laterally, the false one being farther to the nasal side. Another fact about the false image is, that it is not vertical, but leans so that its top inclines inward. Without study of the double images, a strong suspicion of paralysis of the fourth nerve may be awakened by noticing that the eyeball when caused to move in a straight line below and parallel to the horizon, in reaching the middle of the orbit in its excursion outward, makes a twitch and an imperfect rotation of the cornea, and also fails to go as easily and completely to the outer angle as the healthy eye.

Patients who, from any kind of paralysis, have diplopia, are thereby much disturbed, sometimes having nausea and headache, while, to use their eyes, they must either shut one, or correct the double sight by some twist of the head, or by means of properly-adjusted prisms. The use and choice of prisms is a subject not suited to the present treatise, and for which the reader is referred to the works on ophthalmology, e. g., *vide* Wells on "Diseases of the Eye."

During the early stages of the trouble, the proper treatment is counter-irritation to the temples, the faradic electric current, and constitutional remedies. After a number of months have passed, if some imperfection of motion remain, the use of prisms, or the performance of tenotomy, or of some operation on the muscles, may be resorted to.

PERIOSTEAL INFLAMMATION of the orbit does not often occur, but some symptoms which it causes are worth attention. If it affect the deep parts of the cavity, it may cause disturbance in the function of some of the muscles, and hence diplopia; or, if attended by serous or other effusion in sufficient quantity, may produce exophthalmus, and visible signs of inflammation in the globe and eyelids.

This I have seen, in the most emphatic character, in a case where the anterior part of the orbit was the seat of periostitis. So great was the congestion, œdema, and secretion from the conjunctiva, and the swelling of the lids, that the disease resembled acute purulent conjunctivitis. The pain which the patient suffered was intense, and greater than is common in conjunctival inflammations. This fact, and the presence of an eruption on the face, led to digital exploration of the margin of the orbit. The exquisite tenderness at once revealed the true nature of the diseased action, and indicated the need of constitutional as well

as of local treatment. After one eye had suffered in this way between two and three weeks, the other was similarly though less severely attacked, and in this instance the onset of the trouble was distinctly seen to be in the lining membrane of the orbit, and from it acute inflammation was propagated to the external structures of the globe. There was no evidence of gummy exudation. The treatment of the case consisted in leeches to the temples, iced-water compresses changed so often as to be constantly cold, application of a solution of nitrate of silver—ten grains to the ounce—to the everted palpebral conjunctiva, at first twice and afterward once daily, and hypodermic injections of sulphate of morphia: besides this, very high doses of iodide of potassium, at one time reaching three drachms a day, were employed, but the benefit derived from the heroic doses did not appear to be great. The patient recovered without damage to her eyes.

As to gummy tumors growing in the orbit, nothing special need be said: that their bulk must displace the eyeball, and that they must otherwise interfere with its functions, is self-evident.

CHAPTER IX.

SYPHILIS OF THE EAR.

Syphilis as affecting the External, Middle, and Internal Ear.

THE affections of the ear, caused or modified by syphilis, are conveniently considered by arranging them, in accordance with the anatomy of the organ, into those of the external, middle, and internal ear.

The integument of the *external ear* is liable to be involved in the cutaneous affections of syphilis, its substance to be destroyed, or its cartilage eaten away by syphilitic ulcers and gummy tumors. The auditory canal may be invaded by mucous patches, sometimes showing exuberant granulations, by erythematous spots, or by pustules. A dry exfoliation of portions of its skin is not uncommon, together with a change in the quality of the sebaceous matter, so that the latter accumulates in a scabby way over the drum-head, perhaps causing partial deafness. The cerumen may also become impacted. Bony growths—exostoses and hyperostoses—in the external auditory canal may also be encountered in the course of syphilis, but Roosa¹ believes that these growths occur quite as commonly as the result of local irritation in persons who have never had syphilis.

The *middle ear* may be involved, in the course of secondary disease, by an inflammation of its lining membrane. This inflammation is not

¹ "Diseases of the Ear," p. 402.

attended by increase of secretion (catarrh of the middle ear), but by a proliferation of tissue, which does not tend to suppuration but to thickening of the drum-head, and to adhesions between the ossicula and the walls of the tympanum. Wilde¹ described this affection under the name of "syphilitic myringitis," and he believed that it was characterized by the relative insignificance of the pain, in comparison with that felt in the same disease when not due to syphilis. Bumstead,² however, thinks that the absence of local pain is not a characteristic of the malady. Roosa³ believes that there are no peculiar aural symptoms in this form of disease. He remarks, however, that "a syphilitic diathesis seems to cause the proliferation of tissue to be more rapid." He agrees with Schwartz, of Halle, who thinks that periostitis of the middle ear is at the basis of these cases.

Local bloodletting, the warm douche, and opium for pain, will, with the ordinary anti-syphilitic treatment, usually master the affection, if employed during the early stages. It will probably also be necessary to inflate the ear by Politzer's method, in order to prevent the formation of adhesions in the tympanic cavities.

Young children affected with congenital syphilis may be attacked by a catarrh of the middle ear, which resists local and constitutional treatment, very obstinately—that is to say, intra-auricular adhesions occur, the drum-head becomes sunken, the nerve is secondarily involved, and the impairment of hearing often remains permanent.⁴ The mouth of the Eustachian tube is sometimes, but rarely, the seat of ulceration, and thus impairment of the hearing may be caused. Permanent loss of hearing is sometimes due to cicatrization of the pharyngeal orifice of the tube.

The portio mollis of the seventh pair may be the seat of special disease, and periostitis of the labyrinth, as well as gummy tumors, may occur. The results of treatment of syphilitic disease of the labyrinth or nerve are often unsatisfactory. The use of the tuning-fork will be an efficient aid in the differential diagnosis of cases in which there is doubt as to whether the loss of hearing depends upon disease of the middle or internal ear. If the middle ear be affected, the sound of a tuning-fork, the handle of which, while the instrument is in vibration, has been placed upon the forehead or teeth of the patient, will be intensified in the diseased ear; while, if the internal ear be the seat of disease, the intensity of sound will be much diminished, or the vibrations will not be at all perceived on the affected side.

¹ "Aural Surgery," English edition, p. 260.
³ *Loc. cit.*, p. 286.

² "Venereal Diseases," p. 590.
⁴ Roosa, *loc. cit.*

CHAPTER X.

SYPHILIS OF SPECIAL TISSUES AND ORGANS.

Syphilis of the Nails.—Dactylitis.—Syphilis of Tendons, Sheaths of Tendons and Aponeuroses.—Syphilis of Muscle.—Syphilis of Joints.—Syphilis of Bone.—Syphilis of Cartilage.—Syphilis of Lymphatic Glands.—Syphilis of the Mammary Gland.

SYPHILIS OF THE NAILS.—Mucous patches are sometimes seen under the free border of the nail. A whitish or brownish, badly-smelling, characteristic secretion, is furnished by such patches. With the earlier eruptions on the skin, the nails are liable to lose something of their lustre. They are apt to become seamed by slight longitudinal furrows, brittle, friable, cracked, and shaling off at their extremities, sprinkled with an abundance of white points showing an imperfect epithelial formation. This dry form of onychia may cease at any period of its progress, healthy nail growing out from the matrix, or it may go on, very rarely, to a complete shedding of the nail. Instead of these changes, occasionally the nail becomes thickened, rough, discolored (Fournier).¹

ONYCHIA.—During the secondary period of syphilis, specific onychia is sometimes encountered upon the fingers, more often upon the toes. It is not uncommonly symmetrical, the same toe on each foot being involved. Spontaneously, or after slight injury, pain is felt somewhere about the border of the nail. The painful point becomes swollen and of a reddish-brown color. This goes on to ulceration at the edge of the nail, and spreads around it. The surface of the ulcer is moist, brownish, fungous; the secretion ichorous, fetid. The nail loosens, superficial ulceration progresses beneath it. The nail, with the progress of the affection, sometimes softens and falls away, its place being supplied by the ulcer, only a small portion of nail remaining at the point occupied by the lunula. The whole end of the toe or finger becomes engorged, violet-colored, very painful; deep inflammation, with necrosis of the ungual phalanx, may follow. Instead of reaching this extreme, the affection sometimes remains confined to a portion of the circumference of the nail. Here the skin is swollen, livid, ulcerated; the nail seeming to act like a foreign body, preventing repair. All the forms of syphilitic onychia progress very slowly, but terminate habitually in recovery.

Diagnosis.—The dry form of secondary syphilitic onychia must be distinguished from the somewhat similar condition found in eczema,

¹ *American Journal of Dermatology and Syphilography*, 1873, translation.