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mercurial ointment, and compression of the joints by means of strips of mercurial plaster are very efficacious. In the most rebellious cases it is necessary to render the joint thoroughly immobile by means of the starch, plaster of Paris, or, preferably, the silicate of soda (so-called "glass") dressing.

In some cases in which there is a syphilitic affection of the tendons inserted near a joint, there is a coincident effusion into the cavity of the latter. This occurs slowly and painlessly, and disappears on the subsidence of the disease of the tendon.

Accompanying the osteochondritis of children, in which there is inflammation of the diaphyso-epiphyseal junction, there is also, in some instances, effusion into the cavity of the joint at the end of the affected epiphysis. This affection, which is described in the chapter on hereditary syphilis, occurs most commonly within the first year, but in some cases even as late as the twelfth year. In such cases we find a general enlargement of the epiphysis and swelling of the joint.

CHAPTER XXIV.

AFFECTIONS OF THE EYES.

A LARGE number of tissues enter into the composition of the orbit and its contents, and syphilitic affections of this region are correspondingly numerous; but a minute description of all of them would be inconsistent with the limits of this work; and I shall therefore merely allude to several of them, and dwell chiefly upon those which are the most common and most likely to fall under the care of the general practitioner.

AFFECTIONS OF THE BONES OF THE ORBIT.

These may show themselves either as periostitis, caries, or necrosis. They produce the same general symptoms and appearance as in other parts of the body, but, from the very seat of the trouble and the proximity of the inflammatory action to the delicate and complex organ of the eye on the one hand and the sensorium on the other, the symptoms are apt to be graver and the results more disastrous here than elsewhere, except within the cavity of the cranium itself.

The inflammation is very liable to be propagated from the bony walls to the contents of the orbit, and there give rise either to a superficial or deepseated cellulitis, which, if unchecked, may result in the formation of an abscess, and this, in its turn, may either seriously threaten the integrity of the eye, or cause its total destruction. Again, sinuses may be formed in different directions in the lids or their surroundings, through which the products of inflammation may be discharged for an almost indefinite period, accompanied by ulceration and contraction of the soft parts, with eversion or displacement of the lids.

The favorite seat of these troubles is the inner portion of the orbital plate of the frontal bone, the orbital border, superior and inferior, and the os unguis, in which latter they often lead to troubles in the lachrymal passages.

The results of orbital cellulitis may be the same here as in the idiopathic form, and the surgeon must be prepared, in case a deepseated abscess forms, to evacuate this with a bold free incision into the orbit, in order to save the eye, or it may be the life, of the patient.

The constitutional disturbances in these affections of the bones, especially when of a chronic form, are sometimes very great, and the patient often becomes reduced in a marked degree through pain and general

nervous prostration, so that the attending physician is often fearful of subjecting him to a rigorous course of specific treatment. This I am convinced is a mistake, for there is no occasion where the good effects of a vigorous anti-syphilitic course is more marked than here, as well in regard to mercury as to iodide of potassium. Very large doses of this latter drug (ʒj), two or three times a day, are indeed often the only thing which seems to effect a change for the better.

Syphilitic nodes may be met with upon either of the four walls of the orbit. They are most frequent near the anterior opening of the socket, but may occur at a greater or less depth within its cavity, and cause protrusion of the eyeball and loss of vision, consequent upon the stretching of the optic nerve. The following cases are reported by Mr. Poland:[1]

CASE 1.—John M——, æt. 41, a large, bony, well-developed man, became an out-patient at Moorfields, suffering from an extensive swelling of the bone at the upper part of the orbit, encroaching upon the eyeball, so as to displace it downwards and forwards. The history of the case, as well as the present marks of old mischief, at once indicated the nature of the growth.

From his statement it appeared that, about ten years ago, he had undeniable syphilitic inoculation, hardened chancre, and a non-suppurating bubo, followed by secondary symptoms of a rather protracted form. He underwent mercurial treatment, both internally and by ointment, and with benefit; ultimately he became free from all symptoms, and since that time at intervals he has had occasional attacks of rheumatism, which have been relieved by iodide of potassium; and on more than one occasion he has had nodes on the tibia, which were relieved by blisters. The present swelling on the frontal bone had been in existence for nearly six weeks, and, within the last few days, had increased most rapidly in size; it was perfectly firm and hard, but very tender and painful, and seemed to extend towards the orbit, instead of taking the usual course over the forehead, and had already encroached upon the eyeball, slightly displacing it downwards and forwards. There were no cerebral symptoms whatever.

The man was ordered to take three grains of the iodide of potassium three times a day, and to rub an ointment of the same on the swelling morning and night. By persevering with this treatment for three months the swelling entirely disappeared.

CASE 2.—The second case was that of a woman, nearly six feet in height, and of immense bony development, who came under Mr. Poland's care at Moorfields, having a large node growing from the inner wall of the orbit; it was perfectly solid to the touch, but pushed the eye outwards and forwards, and had caused tension of the optic

[1] On Protrusion of the Eyeball, Ophthalmic Hospital Reports, vol. ii., p. 223.

nerve, so that there was loss of sight, dilated fixed pupil, and perfect immobility of the eye. She soon afterwards had severe cerebral symptoms, and died suddenly in a comatose condition. There was no examination of the body.

I never met with exophthalmos dependent upon this cause during many years' connection with the New York Eye Infirmary.

Real exostoses may form in the bones of the orbit as the result of syphilis.

AFFECTIONS OF THE LACHRYMAL PASSAGES.

Syphilis not unfrequently gives rise to changes in the lachrymal passages, causing obstruction to the flow of tears, epiphora and lachrymal abscess and fistula. Since these passages are not exposed to direct observation, the exact nature of the changes in their walls is not always apparent. In a few instances the disease appears to be confined to the mucous membrane and submucous tissue, and to consist in catarrhal inflammation, consequent œdema, and ulceration; in the majority of cases, however, it commences in the bony wall or periosteum, and the mucous membrane is affected secondarily; changes which correspond to those met with in other mucous membranes contiguous to bony tissue. The character of the coexistent syphilitic symptoms may afford some idea of the changes in the tear passages, which, however, can only be accurately determined by direct exploration.

The symptoms are sufficiently obvious. The tears, meeting with obstruction to their transit through the lachrymal passages, collect upon the conjunctival surface; if profuse, they flow over upon the cheek, especially when the patient is exposed to the wind, and the eye is evidently more moist than its fellow, whence the name "watery eye" applied to this disease. Soon pressure over the lachrymal sac causes a reflux into the eye of the lachrymal secretion mixed with more or less purulent matter, or the same result takes place spontaneously; the conjunctiva, especially that of the lower lid and inferior portion of the globe, is maintained in a constant state of irritation and inflammation, and the puncta are abnormally red, swollen, and prominent. In extreme cases an abscess forms in the lachrymal sac or neighboring cellular tissue, opens and gives rise to one or more fistulæ.

These affections of the lachrymal passages may occur at any period of the constitutional taint; but here, as elsewhere, the catarrhal inflammation of the mucous membrane coincides, as a rule, with the secondary stage of the disease, while the deeper-seated troubles of the periosteum and the bones are the development of the tertiary period.

Much may be done for the relief and permanent removal of obstructions of the lachrymal passages by the persevering and long-continued use of specific remedies. The bichloride of mercury and

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iodide of potassium may give satisfactory results. Most cases, however, refuse to yield to internal remedies alone, and in all a cure may be expedited by a resort to the improved local treatment for which ophthalmic surgery is so largely indebted to Mr. Bowman of the Moorfields Ophthalmic Hospital.[1]

The treatment consists in slitting up the canaliculi as far as the caruncle, and afterwards dilating the passage into the nose by means of graduated probes, as we would a stricture of the urethra. The first part of the above procedure is often sufficient to afford great relief to the patient by opening a free communication between the conjunctiva and sac, and by preventing collections of matter in the latter or facilitating their evacuation. One or both canaliculi having been slit up, an opportunity is afforded to explore the nasal passages with a full-sized probe (about one-twentieth of an inch in diameter), and to ascertain the nature of the obstruction. If this be due to swelling of the mucous and submucous tissues alone, the passage of a probe, repeated every two or three days for a few weeks, and retained on each occasion for about half an hour, will in most cases suffice to re-establish the patency of the canal; but when denuded bone can be felt, showing that the disease is seated in the periosteal or osseous tissues, Mr. Bowman's method will sometimes prove unsuccessful, and it becomes necessary to resort to the following course of treatment: If, after the canaliculus has been slit up, explorations with a small Bowman's probe show that the seat of the trouble is in the lining membrane or periosteum of the canal, whether this be from simple thickening or from an actual stricture, then the upper canaliculus should also be slit up and the orifice made by the juncture of the two wounds enlarged, and a long slender knife, such as Agnew's[2] lachrymal knife, should be passed the entire length of the canal, and the membrane freely incised down to the bone. After the bleeding which relieves the congestion of the parts has ceased, the largest size of Bowman's probes should be passed so as to fully dilate the canal. This having been once accomplished, it is usually a comparatively easy matter to keep the canal open by the occasional use of a smaller probe.

In long-standing chronic cases, where there is not much active inflammation, instead of a probe, a piece of lead wire of the same size as a probe may be inserted and left for a day or two, or even for a week or more, until the divided stricture and membrane have healed. Weak injections of nitrate of silver through the sac and nasal canal, by means of a small syringe, such as is used for hypodermic injections, may often be used with benefit once or twice a week. These should, however, never be stronger than a grain to the ounce.

[1] See Mr. Bowman's papers in the Medical and Chirurgical Transactions, 1851, and in the Ophthalmic Hospital Reports for October, 1857; also Remarks on Diseases of the Lachrymal Passages by the author in the Report of the N. Y. Eye Infirmary, N. Y. Journal of Med., July, 1859.

[2] For an admirable article on "The Treatment of Lachrymal Diseases," see the American Practitioner, Jan., 1871, p. 1. C. R. Agnew, M.D.

Sometimes cases appear with every appearance of a severe trouble in the sac and canal, showing a large and reddened tumefaction, which is exquisitely painful to the touch, and in which there is a slight sense of fluctuation, with every indication of confined pus. There is, however, little or no epiphora, and no pus escapes when the canaliculi are slit up. Moreover, the probe shows that there is no stricture or even narrowing of the canal. The real seat of the trouble is then not in the sac or canal, but in the periosteum of the nasal process of the superior maxillary bone and contiguous parts. In this case the incision should be made from the outside, and be deep enough to go through the periosteum. The cut should be kept open for a day or two, and small poultices used, for only twenty minutes or so, once or twice a day. Sometimes, though rarely, we see a permanent thickening of the bones in this region, which makes a distressing deformity.

Should this treatment not suffice, it sometimes becomes necessary to resort to obliteration of the sac and canaliculi (which should always be included) by the actual cautery, or to wait for the slow elimination of the carious portions of bone under the internal administration of iodide of potassium. The old-fashioned style has been entirely abandoned. The danger and inconvenience attending its employment far more than counterbalance any benefit that can be derived from it.

Syphilitic Affections of the Lachrymal Gland.

The only recorded case of affection of this gland is, according to Dr. R. W. Taylor,[1] that reported by Chalons[2] of Luxembourg. "This case was that of a person in the first year of his disease, having lesions of an exanthematous character and an iritis. Coincidently, these glands were observed to become swollen, and their increased size was very perceptible, as they pushed the upper lids forwards. The gland on the right side was much more tumefied than its fellow, and caused the eyelid, which was slightly reddened, to droop down over the eye as in the affection named ptosis. There was no pain, and the symptoms were of a mild character. The appearance of the person is described as being very peculiar. The swellings subsided under the influence of a mercurial treatment."

The writer has seen one or two similar cases in which inflammation of the lachrymal gland or surrounding tissue was supposed to exist. In all these cases, however, excepting one, there was no specific history and no concurrent, nor had there been any anterior, manifestations of syphilis. In one case there was a doubtful specific history in a man of forty years, and the trouble, which had lasted a long time, yielded at once to very large doses of iodide of potassium. In all the trouble was one-sided. Dr. Taylor also mentions in the same

[1] American Journal of the Medical Sciences, vol. lxix., 1875, p. 370.

[2] Adenitis Lachrymalis Syphilitica, Preuss. Vereins Zeitung, No. 42, 1859.

paper two unique cases where there was gummy infiltration into the caruncles.

Syphilitic Affections of the Eyelids.

These lesions are very rare, but when they do occur they present the same general appearances and characteristics that the same lesions do in the corresponding tissues elsewhere in the body, and they may for clinical purposes be divided into eruptions, infiltrations, and ulcerations.

An eruption of a pustular syphilide, of ecthyma, of ulcerating rupia, and other forms, may occur on the eyelids, and especially, according to Lancereaux, in the tertiary period, the external surface of the lid may be the seat of ulcerating or even serpiginous syphilides, which, by cicatricial contraction, may cause ectropion or other displacements of the lid. Lawrence states that the lining mucous membrane may share in the eruption, which, as a rule, affects it superficially. He mentions a case of general papular eruption in a man with specific iritis, in whom papules were also seen on the inner surface of the lid. The writer has seen a similar case where the papules, which covered the external surface, extended a little beyond the juncture of the mucous membrane with the edge of the lid.

Syphilitic eruptions of the eyelids are more frequent in infants affected with hereditary syphilis than in adults. The external surface of the lids is the seat of an eruption of pustules, which run into each other, break, and leave the skin excoriated and red.[1] The conjunctiva of the lid and the globe may become involved through extension of the inflammation, and the cornea destroyed by infiltration of pus. This affection may be distinguished from ophthalmia neonatorum by its later development—the latter appearing about the third day and the former several weeks after birth—and by the presence of the eruption upon the external surface of the lids, to which the conjunctivitis is only secondary.

Syphilitic Ulcerations.—These may be either due to a chancroid or to true syphilis, and be either primary or secondary.

Soft chancres upon the lids are of extreme rarity. I have never seen any myself, but Galezowski[2] and Hirscher[3] have each reported a case.

The true syphilitic ulcer is more common, and may occupy any part of the external or internal surface of the lid, and may either continue superficial, or, gradually extending, may involve all the tissues of the lid. It most frequently occurs on the delicate skin on the margin of the lid, or in the cul-de-sac, where it usually begins as a papule, to be followed by the appearance of a superficial or excavated sore, having an indurated base, the induration being, as a usual thing, deeper and more marked here than in other parts of

[1] Figured by Devergie, Clinique de la maladie syphilitique, Pl. 37.
[2] Galezowski, Journal d'ophthalmologie, mai et juin, 1872.
[3] Hirscher, Wiener med. Wochenschrift, No. 72, 73, 74, 1866.

the body. The ulcer is generally accompanied by inflammation and swelling of the pre-auricular and submaxillary glands. This must be considered the most valuable, and sometimes the only, diagnostic mark of the true nature of the trouble. For without this sign, these primary ulcerations may be, as indeed they have been more than once, taken for simple styes, or a discharging tarsal tumor. I have seen two cases of primary ulcers on the inner surface of the lid, which simulated so exactly a tarsal tumor with a small opening, as to render the discrimination between the two at first impossible. The only guide to a certain diagnosis was the rapid development of an adenitis in both the pre-auricular and submaxillary glands, which, according to Zeissl, seldom occurs in any but strumous subjects. In neither of these cases, however, were there the slightest signs of a strumous diathesis. The diagnosis was, however, corroborated in the fullest manner by the successive appearances of secondary, and in one case of tertiary manifestations in other regions.

In the secondary period, syphilitic lesions of the inner surface of the lids appear as small, circumscribed, prominent spots, usually of a moderate degree of vascularity, though not always, as the surrounding tissue sometimes becomes congested, and the congestion may then extend to the ocular conjunctiva. The color of these spots sometimes varies from a grayish-red to a yellow or even copper color. Mucous patches, pure and simple, may occur on the palpebral conjunctiva, and they present the same characteristics as they do elsewhere on the body.

Secondary ulcerations of the eyelids usually begin as gummy tumors or as submucous infiltrations. They are very destructive of tissue and often leave behind them a scar, which, with the destruction of the hair-follicles and the consequent loss of hair, is for some a diagnostic mark. Still the fact should not be lost sight of that the same result may occur from a simple furuncle or an aggravated stye.

Secondary ulcers are almost always situated near the free border, encroaching upon the mucous membrane or upon the skin, and sometimes, as in a number of cases collected by Mackenzie,[1] causing complete destruction of the lid. I have seen but one case, in a lad aged nineteen, affected with syphilitic disease of the lachrymal passages and nodes upon the tibia, and who had several small excavated ulcers upon the mucous membrane of the lower lid bordering upon its free margin. His disease could be traced to a chancre contracted three years previously, and disappeared under iodide of potassium and mercurials. These ulcerations may be mistaken for ophthalmia tarsi, and epithelial cancer, or, when situated near the inner canthus, for disease of the lachrymal passages.

Moreover Zeissl declares that the gross and microscopical appear-

[1] Diseases of the Eye, Phil. ed., 1855, p. 160.

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