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Tuberculosis of the Iris, the Suspensory Ligament and the Retina.

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Case of tuberculosis of the iris, the suspensory ligament, and the retina.

By R. Lawford Knaggs, M.C.

The following case of tuberculosis of the iris is worthy of record for pathological rather than clinical reasons.

Fred B—, æt. 9 months, was sent to me on October 18th, 1890, by Drs. Winder and Dyson, of Honley. His parents had noticed the right eye to alter in colour two months before, and since then it had watered a good deal.

On examining the R. eye the aqueous was found to be turbid, the iris cloudy and of a greyish-pink tint, and projecting from its anterior surface were from fourteen to twenty white nodules as big as pins' heads. Except for a faint ring of ciliary injection the eye was not inflamed. The iris in the L. E. was bluish grey. The child was teething. It had not been weaned, and was subject to profuse head sweats and bronchial attacks, but when examined there was no sign of mischief either in the chest or in the abdomen.

There was no external sign of syphilis, and nothing in the history to suggest it. Though no history of tubercle could be obtained at the time, Dr. Winder has kindly ascertained for me the following facts:—Four sisters, a paternal aunt, and a cousin of the child's mother all died of phthisis.

Atropine drops (gr. iv ad ℥j) were prescribed for the eye, and Hydrarg. c̄ Cretâ with soda and rhubarb (āā gr. j t. d.) for internal use.

On October 29th the spots were noted to be increasing in size, and one or two in the *lowest part* of the anterior chamber had coalesced, and formed an irregularly shaped mass, which was growing rapidly. The diagnosis of

tubercle was now made, and cod-liver oil substituted for the mercury.

On November 7th the mass already alluded to was of a yellow colour, and caused an outgrowth as big as a pea on the sclero-corneal junction, but involving the sclera more than the cornea.

On the 15th the outgrowth was half as large again, and had a yellowish appearance suggestive of pus. The other nodules in the iris were slowly enlarging. The child was beginning to suffer a good deal of pain, and the continuance of this at last led the parents to consent to the removal of the eye on the 27th.

Mr. Dyson subsequently wrote to me that the child died on January 8th, 1891, from (i) teething; (ii) tubercular meningitis.

The eye was hardened in Müller's fluid, and sections were kindly prepared for me by Dr. Jacob. The sections are vertical, and in the upper part show the iris up to the pupillary margin transformed into a tubercular nodule, which contains one large caseating mass and numerous smaller tubercles in various stages of development. Close to the pupil the uveal pigment layer has been invaded, broken up, and in part altogether removed, whilst the pupil itself is filled with false membrane, which is adherent to the lens capsule.

In the lower half of the section is the large mass which arose from the coalescence of several separate nodules. In it are many tubercles more or less advanced.

It is situated at the sclero-corneal junction in front of the ciliary body, and has involved the greater part of the periphery of the iris in this region. It has led to thinning and absorption of the sclerotic and the cornea, which are bulged outwards at this spot, and form a considerable excrescence. The continuity of the external tunic can still be traced, but it is permeated with inflammatory cells which extend into the conjunctival tissue beyond.

The pigment layer covering the ciliary body is com-

plete, but just in front it is broken up, and the new formation penetrates here through the uveal tract, and invading the suspensory ligament, has filled up the space of Petit, where there are several tubercles. The giant-cells are better marked in Petit's space than in any other portion of the section.

In the enlarged sketch the artist has not been successful in representing the exact position of the inflammatory material with regard to the suspensory ligament. It reaches above the level of the lowest point of the capsule, and is in close apposition to the whole of the anterior membranous (?) layer of the ligament. The specimen leaves hardly any doubt that access to the space of Petit has been obtained through the suspensory ligament; indeed, cells can be seen not only on either side of the anterior layer of the ligament, but on careful focussing either above or below the strands which are formed by its cross section. It is possible that these cells may have been displaced during the manipulation of the section.

The suspensory ligament is fairly complete, though the insertion of its anterior layer into the lens capsule is not so distinct as in the upper portion of the section.

The extension of the inflammatory process has been abruptly limited by the hyaloid at the posterior boundary of Petit's space, but the various layers of the suspensory ligament have evidently constituted no impediment, for the cell-growth has invaded and become embedded in them without altering their anatomical relations. Appearances suggest that gravity was the determining cause of this interesting disposition of tubercular inflammation, for, as already stated, the section is a vertical one, and the inflammatory material attains the same level in the space of Petit and in the posterior aqueous chamber, though this point is not accurately represented in the enlarged drawing.

Where the lens is in close contact or proximity to the tubercular growth its substance is broken up into spaces formed between the fibres, and in most instances these

spaces are filled with inflammatory cells, but no giant-cells or definite tubercle formation can be detected.

There is a focus of inflammatory tissue in the retina, also probably of tubercular origin, but there are no definite tubercles in this section. It involves all the structures between the nerve-fibre layer and the pigmentary layer, but the latter tissue has not been affected.

This evidently late implication of the nervous tissue within the eye is of considerable interest in connection with the probable termination of the case, seven weeks later, from tubercular meningitis.

Tuberculosis of the iris has been so recently reviewed by Dr. Hill Griffith in vol. x, p. 84, of the 'Ophthalmological Society's Transactions,' that it is only desired to draw attention to the bearing which the present case has upon certain points in connection with the suspensory ligament.

If it leaves unsettled the doubts that prevail about the existence of a membrane formed by the anterior fibrils of the suspensory ligament, it certainly would appear to dispose of any that may remain as to the permeability of that structure by organised products.

In vol. vii, p. 137, of the 'Ophthalmological Society's Transactions,' Dr. Hill Griffith has dealt with this latter point, and has recorded some interesting cases of descemetitis, associated with inflammatory changes in the choroid, to prove it.

The present case strongly supports his views, for here the cells have been caught in the act; and though the direction of the passage is the opposite of that supposed in Dr. Griffith's cases, it is a detail dependent upon altered conditions.

It may be objected that leucocytes are not organised particles, and that there is nothing remarkable in their disposition here; but it may be pointed out, as bearing upon the subject under discussion, that whilst they have passed the suspensory ligament they have been abruptly stopped at the hyaloid. (*January 28th*, 1892.)

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