NOTES ON OPHTHALMIC DISEASES.

By J. VOSE SOLOMON, Esq., Surgeon to the Birmingham and Midland Counties Eye Infirmary; lately Honorary Surgeon to the Birmingham General Dispensary.

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EXTRANEOUS BODIES UPON THE EYEBALLS AND LIDS.

Of ninety cases recorded in the tabular report (*JOURNAL*, pp. 148-9), eighty-four were observed in males, and six in females. In eighty-two, the cornea was the seat of the foreign body; in five, the conjunctiva of the superior eyelid; in two, the sclerotic conjunctiva; and in one, the surface of the corneo-sclerotic union.

The symptoms denoting the presence of a foreign body within the eyelids, but which has not penetrated within the globe, do not need description here. In my *Ophthalmic Sketches*, published in the *Provincial Medical and Surgical Journal* (1852), I have treated of them, and of the more usual results following the intrusion of a foreign body, also of the proper mode of making search for it.

The peculiar tough and inelastic structure of the cornea often renders the removal of bodies sticking in it extremely difficult, even to those who are in the habit of treating such cases: hence their greater frequency in eye infirmary practice. From other parts of the eye and its appendages, the natural eliminative processes, with or without the assistance of unprofessional friends, are generally sufficient for the clearing away of the foreign body; consequently, although the cornea appears by the table to have been the most frequent seat of a foreign body, it by no means follows that it is so among the large number of persons who suffer from "something in the eye".

A foreign body may be retained for a considerable time by mere adhesion to the corneal epithelium.

CASE IV.* A miller came to me in the summer of 1853, from Leicester, with a densely white defined opacity in the centre of his left cornea, which he said had been in that situation four months, much puzzling him as to its nature, but never occasioning any inconvenience or anomaly, excepting an obstruction to vision. Immediately that he entered my room, I recognised it as a foreign body. It was a scale of stone, which was readily removed, its site presenting an even surface of natural appearance. There was no indentation of the cornea.

In a few cases, where the extraneous body has been retained sufficiently long to induce ulcerative corneitis, it has proved, on removal, to be an exceedingly small iron ring, yet of sufficient capacity to be held on the point of a curette.

The instruments recommended for removing foreign bodies imbedded in the cornea are many and various: they include slitless quill pens, steel spuds, gouges, etc. I have found a delicately fine pair of eye forceps, set in a bone handle, useful in picking out pieces of lance-shaped metal, otherwise immovable. Sometimes, however, use what means we may, the foreign body being very minute, and impacted in the anterior elastic lamina, or more deeply, and the patient impatient, it defies our manipulations. Under these circumstances, when the body is of iron, we have been recommended by Dr. Jeanneret to bathe the eye in a solution of sulphate of copper (four grains to an ounce). In no instance have I found it of any benefit. But a two grain solution of nitrate of silver, by its sedative action on the conjunctival nerves, has had the effect of relieving pain, and so acting as a palliative. I prescribe it in those cases, which are rare, that do not admit of immediate extraction.

Of a solution of iodine as a solvent, I have no experience. The proper treatment is, as a rule, strictly surgical.

Dr. Mackenzie, in his learned and comprehensive ophthalmic treatise, mentions having seen destructive inflammation of the cornea to result from rude and unskilled attempts to remove foreign bodies from the cornea. I am inclined to believe that such an event seldom, if ever, occurs amongst

English mechanics, who are particularly healthy. No case of the kind has come within my experience, nor have I heard of such from other ophthalmic practitioners; yet many eyes have come before me with which great liberties had been taken.

Diagnosis. Within a few hours after the intrusion of a foreign body, symptoms resembling incipient *catarrhal conjunctivitis* are developed. The sensation as of sand in the eye is, in idiopathic conjunctivitis, most distressing in the morning; in the traumatic form, it is persistent, or nearly so. A foreign body may, however, excite much local disturbance, without giving rise to a feeling of roughness in the eye.

CASE V. A healthy herdsman came to the Eye Infirmary with acute inflammation of the conjunctiva, which was confined to the inner angle of the eye. The membrane was elevated and thickened by inflammatory exudation. Upon the cornea of the same eye, and near its inner circle, was a minute, whitish, rough opacity, which I conceived to be a slough. The patient said his eye had been struck twelve days before by a thrust of the horn of a cow which he was tying up. He made no complaints that were indicative of the presence of a foreign body. Having doubts of the nature of the case, I removed with a curette the sloughy-looking material, which turned out to be conjunctival froth, lodged upon an exceedingly minute seed-husk, imbedded in a transparent indentation of the cornea. So small was the foreign body, that its characters could only be made out with the aid of a powerful magnifying-glass.

The formation of a small pustule upon the palpebral conjunctiva of the upper lid acts as a foreign body: eversion of the lid, which should never be omitted in cases of doubt, will reveal the case.

Complete removal of a foreign body is generally followed by entire subsidence of irritation in the course of twelve hours, but not always. In September and October 1852, I observed, both at the Eye Infirmary and in private practice, several instances where catarrhal and pustular conjunctivitis were excited by the presence of a foreign body, notwithstanding its early removal after intrusion. Dr. Mackenzie has noticed the same fact.

It is much to be regretted that the practice is still prevalent, and considered excellent, of allowing foreign bodies, such as stone and iron, even when of size, and the occasion of much irritation, to remain unremoved until rendered loose by ulcerative corneitis. This application of an expectant practice entails not only severe suffering, and, in exceptional instances, permanent injury to vision; but to mechanics, stone-breakers, and others of the labouring poor amongst whom these accidents are of frequent occurrence, considerable pecuniary loss, and consequent privations to their families, by disabling them for work.

With the aid of chloroform in cases where the eye is very irritable, and a firm persuasion, on the part of the surgeon, of his own ability to treat the case, I am sure that very few need be left to nature.

Amongst the grinders in Sheffield, I am told, the mode of extracting particles of metal from the cornea is as follows. The patient stands upright, with his back to a wall; then one of his fellow-workmen separates the eyelids, and maintains the eyeball in a fixed and favourable position, by placing the bow (loop) of a pair of scissors upon the front of the globe, with the other hand, he removes the foreign body by means of a spud-shaped needle, or the point of a pen-knife blade.

It remains for me now to illustrate by cases some of the more serious and less common results of allowing a foreign body to remain unremoved from the surface of the eyeball. One or two of the cases will be found to present points of pathological interest, independently of the subject of which they are specially illustrative.

CASE VI. GENERAL INFLAMMATION OF THE INNER STRUCTURES OF THE EYE, AND DISORGANISATION OF THE IRIS, EXCITED BY A FOREIGN BODY. A blacksmith's apprentice, aged 17, while in the act of paring a horse's hoof, received

* For Cases I, II, and III, see "Ophthalmic Sketches", in *Prov. Med. and Surg. Journal*, 1852.

a piece of the horn beneath the upper eyelid of his left eye. He applied to a druggist, who gave him a lotion. Seven days after the accident, the foreign body was removed. On the fifth week from the accident, Dec. 17th, 1852, he came to the Eye Infirmary, suffering much pain in the eye and head. The affected organ presented at that time acute venous congestion of the conjunctiva. Its iris nearly touched the cornea, which was transparent. The structure of the former was inflamed and disorganised; numerous triangular shaped slits being observed near to its ciliary border, their apices pointing towards the pupil. Behind the slits was black pigment. To the outer side of the pupil, and upon the front of the iris, lay a broad mass of yellowish green lymph. The lens appeared to lie close to the back of the iris; its capsule was red with vessels (*irido-capsulitis*). The patient's constitutional power, reduced by five weeks' severe suffering, was feeble. I directed small doses of grey powder and conium to be taken at bedtime; quinine three times a day; and strong beef-tea.

After twelve days of this treatment, the iris had begun to resume its natural blue colour, and had receded somewhat from the cornea: the lymph on its surface was nearly all absorbed. The slits in its structure were more defined, and crossed longitudinally by what appeared to be greyish fibrils of lymph. The pupil was closed by lymph cataract. I saw the patient six days afterwards. He was then free from pain, and incapable of distinguishing night from day with the affected eye, which was somewhat sunken from disorganisation of the vitreous body. The vision of the other eye was perfect.

That the immediate removal of the hoof-shaving, and adoption of appropriate after treatment, would in this case have preserved the integrity of the organ, is an opinion which few would be inclined to oppose.

In a pathological point of view, the condition of the iris is of interest. The following *rationale* is suggested. In the course of the general inflammatory excitement that pervaded the internal structures of the eyeball, the entire pupillary margin of the iris became agglutinated to the capsule of the lens, and blocked up the natural communication between the anterior and posterior aqueous chamber; copious inflammatory exudation, and augmented aqueous secretion into the posterior aqueous chamber, displaced the lens and iris, forcing them close to the concave of the cornea: the fibres of the iris, thus tensely stretched, and softened by structural inflammation, gave way in several places, allowing of the pigment to become visible. Upon subsidence of the internal ophthalmia, and absorption of the effused contents of the posterior chamber, the iris, and the uvea that appeared in the apertures already noticed, receded; the colour of the one became natural, or nearly so; and the place of the other was occupied by grey fibrils.

The reader is referred to the works of Mackenzie and Wharton Jones for a statement of the views of Jäger and Klemmer upon "Staphyloma Uvæ"; the technical term for the state of iris observed in the young blacksmith.

There is a form of chronic parenchymatous inflammation of the iris, in which the membrane loses its naturally beautiful structure; it is bolstered forwards in irregular bosses of a dark and dull green or slate colour, patched with pigment. In this condition, treatment has, with me, always failed in restoring the membrane to its natural colour. Effusion of blood upon the ciliary border of the iris I have known to result in dark brown and sometimes black lunated marks, which continued unaltered for several months—in fact, as long as the patients remained under observation.

The retention of a foreign body beneath the sclerotic conjunctiva may give rise to the formation of a tumour, as in the following examples.

CASE VII. SMALL SESSILE TUMOUR ON THE SCLEROTICA: EXTIRPATION: A PIECE OF IRON ENCYSTED IN ITS BASE. A woman, twenty-two years of age, came to me Nov. 29th, 1852, for advice respecting a tumour of the size and shape of a large hemp-seed, situated on the scleroticæ of the left eye, half an inch from the external margin of the

cornea, and about a quarter of an inch below the equator of the eyeball. It was covered by conjunctiva, of rusty brown colour, unvascular, of tense and shiny appearance, and of sessile attachment. (With exception of the colour and size, it much resembled a hernia of the iris protruding through a corneal ulcer.) In other respects, the eye and its appendages were healthy.

History. The patient said that eighteen months ago, while working at a nail-cutting machine, a piece of iron flew up against the eye, in the situation now occupied by the tumour. Some particles of iron were at once extracted by a fellow-workman, and she continued to perform her usual duties up to four days ago, when the eye became watery, and consequently dim. On the day of the accident, the eye was blood-shot, and, on the third day following, "a small blood red lump, of the size of a large pin's head", made its appearance upon "the white of the eye", which gradually increased in size, its growth having been particularly rapid the last three months; and a month ago it began to interfere with the closure of the lids, or, as the patient expressed herself, "it used to catch in the corner, and I often tried to get it off with my finger nail, but never could". No treatment had been adopted.

I excised the tumour, which contained, within a well defined cyst at its base, a piece of flat iron of inconsiderable thickness, seven-fiftieths of an inch long, its widest part being three-fiftieths of an inch. After maceration in water, the tumour closely resembled the section of a thick globular staphyloma of the cornea.

It seems probable that in this instance the following series of changes took place: first, an effusion of a small quantity of blood, then the organisation of its fibrinous part into a cyst around the foreign body, and subsequently the growth of the cyst into a tumour by thickening of its walls. Mr. Abernethy believed that all tumours had their origin in effused blood—a theory which more modern investigators have shown to be untenable.

CASE VIII. TUMOUR OF FLESHY APPEARANCE COVERING AND ADHERENT TO THE GREATER PART OF THE CORNEA. A healthy looking farm labourer, seventy years of age, came to the Eye Infirmary on Oct. 12th, 1852, with a tumour in the situation mentioned above. About twelve months previously, while he was reaping some wheat, a piece of the straw entered the corner of his right eye, and passed beneath the upper lid. It did not give him much pain, nor did he think that the eye then suffered any important injury. About six months after this occurrence, the vision of the eye became impaired; the lids closed with some difficulty, as if there was a swelling upon the ball of the eye, which was painful occasionally. His sight became gradually worse, and was when I saw him lost, excepting at the outer corner of the eye. The cornea of the right eye was now covered, with the exception of about its outer fourth, by a pink fleshy-looking tumour (not unlike *epulis*), which extended over the upper and towards the inner margin of the cornea, on to the scleroticæ for about a quarter of an inch. The growth was closely adherent to the parts beneath; it was smooth, and covered by mucous membrane.

Its surface was not uniformly convex, but divided by a slight depression into two or three lobes. The upper lobe, placed upon the scleroticæ, presented deeply in its substance a yellowish diffused spot. The tumour, when manipulated, exhibited about the same sensibility as healthy conjunctiva. Its external margin intersected the cornea at a perpendicular, and appeared to be almost precisely opposite the outer pupillary border of the iris, which was dilated.

The uncovered portion of the cornea was normal, as was the iris as far as it could be scrutinised, and the anterior aqueous chamber. The conjunctiva covering the lower lid was more red than natural; in other parts, it was healthy. The patient was sometimes troubled by a copious flow of tears, which were not scalding; also with occasional brow headache. The left eye was quite well. His appetite was impaired.

An operation for the removal of the tumour was proposed, but declined by the patient; and I lost sight of him. If he had consented, the eye, which was certain, as the tumour increased, to be destroyed by inflammation, etc., the results of pressure, would have been saved, and useful vision regained. Tumours occupying a like situation have been removed successfully by V. Stöber* and Rau.† They require careful dissection by the knife, and the application of escharotics to parts which do not admit, from their close union to the cornea, of removal by cutting; also to any after reproductions of the tumour. When their connexions with the surface of the cornea are particularly intimate, the surgeon must endeavour to cut off their vascular supply by excision of portions of conjunctiva in their immediate vicinity, or by application of a stick of pointed lunar caustic to their main feeding trunks. A combination of these means may be needed. Tumours the seats of which are limited to the epithelium of the cornea present generally either a granulated or a warty appearance. Of the one, Mr. Wardrop, in his *Morbid Anatomy*, has given a good drawing; of the other, Mr. Bowman has recorded an interesting case in his *Lectures on the Eye*. But when they originate from the sclerotic conjunctiva and its subareolar tissue, they more frequently assume a lobed or lobulated form. In a case that I had an opportunity of examining, the disease ensued in a youth, from an attack of purulent ophthalmia, that had been at its onset inefficiently treated; the tumour appeared to contain, within a lobe that extended over the cornea, fat.

The grounds for believing that, in the case detailed by me, a piece of straw was retained under the sclerotic conjunctiva, and gave rise to the formation of tumour, may be briefly stated as follows:—The history of the case shows a close relationship between the morbid growth and the accident, for in six months afterwards it had attained size sufficient to obstruct the lid and the vision of the eye by covering the cornea: an hypertrophied and fungous condition of the conjunctiva has been proved, by dissection in other cases, to follow the impaction of a foreign body beneath the superior conjunctival fold: and, had the conjunctiva been simply wounded, and no foreign body left behind, a pedunculated tumour, if one of any kind, and not a sessile growth, would have been the consequence, as, for example, after the operation of strabismus.

CASE IX. DESTRUCTION OF THE LEFT EYE FROM INJURY; NEURALGIC AMAUROSIS OF THE RIGHT OF FOURTEEN WEEKS DURATION, SIMULATING SYMPATHETIC INFLAMMATION OF THE RETINA AND CHOROID, CURED BY REMOVAL OF A FOREIGN BODY FROM THE CORNEA. A young man, weak and emaciated, and affected with frequent dry cough, presented himself at the Eye Infirmary for advice, July 1st, 1853. The *right* eye was unable to bear the light of day, which was clouded; the *left* was blind, tolerant of light, and collapsed in its anterior chamber. Of the latter, the following account was obtained:—Fourteen weeks previously, a chisel broke in his hand, and a portion of it wounded the left eye severely, then and for ever destroying its vision. He was immediately taken as in-patient to a medical charity, and in five weeks the eye was comfortable, with the exception of occasional pains. The right eye, three days after the accident, became dim—for a day or two he could see nothing whatever with it; after which red flashes continually played before it; and at this time objects were seen more distinctly at the distance of a yard and a half than at any other range. It was examined, water

dressing applied, and an encouraging prognosis given. The eye gradually grew worse.

Present State. There were oculodinia, intolerance of light, and epiphora. Suspecting from the history, that I had to deal with a case of sympathetic traumatic ophthalmia, as a preliminary to the investigation of the internal structures of the eye, I directed him to sit with his back to the window, and to endeavour to read some printed capital letters of more than an inch in height. With considerable hesitation, he named five of them, when his visual power became exhausted. He said that the first letter appeared dim, which strengthened my impression of the case being one of chronic posterior internal ophthalmia. An examination, however, of the eye in profile, and in a subdued light, discovered upon the cornea a small dark foreign body opposite the superior circle of the iris, which was brown, and of normal appearance; not a shade of opacity dimmed the former membrane. The foreign body—a particle of stone—of the size of a very small pin's head—was firmly set in the cornea, and required much force to displace it, indicating that ulcerative action, which is usual in such cases, had not taken place. The patient was ordered a blister to the temple, and to take five grains of cinchona three times a day. Good diet. In less than a week, his eye was tolerant of light, and its vision perfect; the cough had nearly left him, and his general health had improved much.

This case is illustrative of the difficulty of discovering a dark foreign body when placed opposite an iris of brown colour, unless the organ be viewed in profile; a precaution which, I am almost sure, was not observed prior to my seeing the case, otherwise the particle of stone would not have escaped notice from the able surgeon who had care of the patient before his admission at the Eye Infirmary.

Birmingham, May, 1854.

CASES ILLUSTRATING THE DIAGNOSIS OF DISEASES OF THE HEART.

By W. O. MARKHAM, M.D., Assistant Physician to St. Mary's Hospital.

THE subject of Diseases of the Heart has been of late perhaps more extensively handled than any other of medical investigation; but that much still remains to be investigated, in the matter of their diagnosis, pathology, and treatment, is proved by the experience of those who have carefully studied this class of diseases. With respect to their diagnosis, we have the latest and a most high authority assuring us that physicians have in general gone much further in a minute and accurate discrimination of the various maladies which affect the heart, than a wise and cautious experience justifies. "I cannot," says Dr. Stokes, "even at the risk of being charged with understating the position of physical investigation at the present day, avoid expressing my opinion that a too great positiveness marks some of the statements in our standard works, and that the difficulties of special diagnosis are still infinitely greater than many might be led to believe." Some persons who peruse Dr. Stokes's pages will doubtless think that he often carries his caution too far, and that he sometimes halts in his judgment where the facts would seem not to warrant hesitation; but every wise observer will thank him for the wholesome lessons of "prudence and modesty" which are inculcated throughout his work.

That we have much to learn yet concerning the diagnosis of diseases of the heart, any one may readily discover by even a superficial investigation of the subject; he may arrive at the fact simply by comparing the discrepant statements of various authorities, and will obtain the positive demonstration of it when he comes to test his book-learning by the touchstone of clinical experiment. Hence further observation is required; and from the results of well-recorded observation alone can our stock of knowledge in this matter be increased. I have ventured to offer here some cases of diseases of the heart, which have been faith-

* Annales d'Oculistique, 1852, p. 182.
† Wharton Jones' Manual, p. 459.