LONDON JOURNAL OF MEDICINE,

A MONTHLY

Record of the Medical Sciences.

SEPTEMBER 1852.—No. XLV.

ORIGINAL COMMUNICATIONS.

ON CYSTS IN THE INTERIOR OF THE EYE.

By WHITE COOPER, Esq., F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital, and Senior Surgeon to the North London Eye Infirmary.

GROWTHS in the interior of the eye are of various descriptions, and vary in the mode and extent to which they interfere with the integrity of the organ. My object in this communication is to describe two cases of cysts, the first being of an exceedingly rare description. The narrative is that furnished by the patient.

CASE I. On Friday, February 16, 1849, M. M., a young gentleman, eleven years of age, of strumous diathesis and excitable temperament, was in a garden, pulling out a piece of wire from an old box, when the wire suddenly gave way, and his hand struck his right eye with great force. The pain overpowered him for a time; he went into the house and laid down on a window-seat, sick and stupified as if stunned. As he was going home from school the following day, he said nothing about the accident, but he expected a black eye. The drive home was about three miles, during which he felt sick and poorly, and wore a handkerchief tied over the eye. In the afternoon, he rode a pony for an hour or two; but the eye being still painful, he bathed it with warm water on his return, and covered it with a shade. The pain increasing and inflammation coming on, he did not return to school; and on the 20th, the inflammation still continuing, a surgeon was called in, who discovered a wound across the cornea, apparently made by the thumb nail. Leeches were applied, and other judicious treatment adopted, but in spite of this, he was detained at home five weeks. By the month of April he was able to use the eye again, but there remained a seam, like a hair, where the wound had been; in other respects the eye was well. It was a question whether nitrate of silver drops should be employed to remove this seam-like opacity; but Mr. John Soden, of Bath, who was consulted, did not recommend them. From that time, Master M. experienced some dimness of sight, but no other

inconvenience, and pursued the usual routine of education. In April 1851, a minute speck, like a small seed pearl, was first perceived, the eye having been irritable and uncomfortable for some weeks previously. Mr. Morgan, of Lichfield, was, I am informed, at once consulted; and, as the young gentleman was soon to be placed at Westminster School, he advised that some one in London, well acquainted with the eye, should see the case. In the middle of June an opinion was taken, and it was advised that, as the speck did not obstruct the sight, it was safest to let it alone, unless it increased in size, as the inflammation which might ensue from any attempt to puncture it might endanger both eyes. Shortly after this, Master M. underwent operations for club-feet. The eye continued in much the same state; but in September, inflammation and irritation appeared, caused by weeping in consequence of a heavy domestic calamity; he was also restless, and for some weeks could sleep but little. In November, as the speck had slightly enlarged, another opinion was taken, and both gentlemen decided that the disease was a cyst containing fluid. Soon after, a consultation was held between these two gentlemen and the late Mr. Dalrymple; all agreed as to the singularity of the case, and that the cyst should be punctured, should it increase so as to interfere with sight. It was not, however, interfered with at that time, and Master M. went on with his education, though through the winter the eye occasionally became inflamed of an evening. Slowly but steadily did the cyst increase, and by the 8th of April he could not see at all in bright light, from the cyst completely obstructing the pupil. In the beginning of May, the patient got wet through, and from that time he had much pain and inflammation in the eye. It was arranged that he was to have gone to Mr. Dalrymple on the 5th May, but unhappily the lamented death of that gentleman took place on the 2nd. Master M. meanwhile became exposed to the infection of measles; and as it was uncertain whether he had taken them or not, it was considered proper that operative proceedings should stand over for a time, and on the 15th of May he returned to Torquay, where he had been previously staying. From that time, the inflammation and the pain and the size of the tumour all rapidly increased. Dr. B. Toogood considered the inflammation and pain to be caused by the growth of the tumour, and advised that no time should be lost in removing it. Four leeches were applied to the brow, and he was otherwise prepared for the operation. On the 28th he came up to London, and on the 30th he was placed under my care to undergo the necessary operation. On the following day, I saw him

Fig. 1.

for the first time. There was difficulty in obtaining a view of the eye, from the excessive intolerance of light; but I saw enough to satisfy me that there was, projecting into the anterior chamber, a tumour or cyst about the size of a pea, lustrous and iridescent, like pearl, which indeed it closely resembled. (Fig. 1.) It filled up the pupil and pressed upon the iris, from which it appeared to have its origin. The eye was intensely inflamed, and so sensitive that it could scarcely bear the slightest touch. There could be no doubt that the growth was the cause of this inflammation and suffering; and, judging

from cases of foreign bodies related in this Journal, I had little doubt that the removal of the tumour would be followed by much relief.

At three P.M. on June 1st, the operation was performed by me, with the kind assistance of Mr. James Lane, Dr. Toogood, and Mr. Walker, the patient being chloroformed by Dr. Snow.

When he was apparently under the full influence of the chloroform, I made an incision near the outer margin of the cornea with Jäger's knife; I then attempted to grasp the tumour with canula forceps, but at that moment the patient partially recovered consciousness and struggled, so that I was obliged to withdraw the forceps and desist: by the spasm of the muscles of the eye, considerable prolapse of the iris took place. When the patient was again insensible, I attempted to grasp the base of the tumour with the fine forceps, but so hard and tough was it, that the instrument slid off without any impression being made: the wound in the cornea was therefore enlarged, and with a pair of strong iris forceps I succeeded in breaking up a portion of the cyst, which was as tough as cartilage. An endeavour was then made to cut it away with scissors, but on the iris separating from its ciliary attachment on the nasal side, it became apparent that the real attachment of the tumour was to the ciliary ligament; from that body it had arisen, had pushed between the lens and iris, and at last had made its appearance in the anterior chamber through the pupil. Although I succeeded in detaching the mass from this part, it had contracted such firm adhesions to the iris, that I found it impossible to draw the whole out without most seriously detaching the iris, and, indeed, destroying the eye, and as a portion of vitreous humour now appeared, I contented myself with removing piecemeal as much of the growth as possible, trusting to the powers of absorption to get rid of the remainder. The large portion of prolapsed iris was gently and carefully replaced, the edges of the wound brought into apposition, and the lid firmly secured with sticking plaster, in case vomiting should arise.

He recovered after a time from the chloroform, but remained upon the couch till the evening, when he was removed to bed. The plaster was then removed, and cold wet rags applied to the eye, which was carefully bandaged.

When examined under the microscope, the cyst appeared to be made up of epithelial cells, so closely agglutinated together, that it was only after maceration that they could be separated.

The progress of the patient during the eight days after the operation was all that could be desired. The eye gradually lost its soreness and sensibility, and at no time did he suffer anything amounting to positive pain; on the contrary, the operation, severe though it was, decidedly relieved the suffering which had distressed him so much previously. On Monday, the 7th of June, the eye was opened, and the cornea found bright, the wound well united, and the inflammation decidedly less than when I saw him first. On the 8th, Master M. went down stairs, and was placed on meat diet.

On the 10th, there was a return of lachrymation and some intolerance of light, and a dark zone of congested vessels which surrounded the cornea, and did not after some days give way to the counterirritation of a small blister on the temple, led me to try the effect of a mild mercurial course. On the 12th, he had begun to take a drachm of the

syrup of iodide of iron twice a day, but on the 19th this was omitted, and he was directed to substitute ten drops of the tinct. ferri acetatis in water, after breakfast and dinner, and to take the following pill every night: *R Hydr. c. cretâ gr. iij, extract. conii gr. jss, extract. opii gr. ½. M.*

On the 22nd, two grains of extract of poppies was substituted for the conium, which rather disagreed. The happiest effect was produced by this treatment; on the 26th, his mouth showed symptoms of mercurial action, and a marked amendment was visible in the eye. The zone speedily vanished; the intolerance was felt no more; and, by the 30th, he was able to face a moderately strong light without inconvenience. There were a few turgid vessels still lingering, and for these a drop of a solution of nitrate of silver, one grain to the ounce, was ordered. The eye was speedily relieved by this; and when I took my leave on the 3rd of July, there was not the slightest appearance of inflammation; he bore the light well, and expressed himself as feeling more comfortable in all respects than he had done for many months. The cornea was bright, but towards the outer part of the pupil, which was much disfigured from detachment of the iris from its inner margin at the time of the operation, there was visible a small portion of the tumour, torn from its attachment, and apparently undergoing absorption. He had sight with the eye, principally, I believe, through the artificial pupil thus made. On the following day he returned to Torquay.

My friend, Dr. Toogood, thus wrote on the 14th July: "I have just seen your patient Master M., whose health appears to be improved since his return to this place. His eye looks well, and he is quite free from all pain or uneasiness, and he assures me that he can see better and more distinctly." This satisfactory report has been confirmed by a still more recent letter from the patient's mother.

CASE II. Ellen Matthews, aged 22, accidentally struck her right eye against the sharp corner of a chest in October 1850. The eyelids were blackened by the blow, and a rather considerable effusion of blood took place beneath the conjunctiva, discolouring for three weeks the outer half of the eye, but without causing inconvenience to vision after the swelling had subsided. In the following February, the eye became irritable and intolerant of light, with increased lachrymation. There was a red patch at the outer margin of the cornea, which was at times

Fig. 2.

blended in a general inflammation. In April, a substance appeared in the anterior chamber, for which she underwent a course of mercury without benefit; the substance was in fact a cyst, which appears to have steadily increased in size. In September 1851, I saw the patient for the first time, and the appearances were as follows. The outer half of the anterior chamber was nearly filled by a delicate semitransparent cyst, which pushed back the iris and encroached upon the pupil. (Fig. 2.¹)

¹ The wood-cut fails to convey an idea of the delicate texture of the cyst, which was nearly transparent.

It appeared to originate from the junction of the iris with the ciliary ligament, and to have bulged forward from thence into the anterior chamber. There was still redness around the cornea, and the patient complained of a feeling of distension and aching increased by exposure to light.

The following day, September 5th, the cyst was punctured through the cornea with a broad needle; the transparent contents immediately escaped, and the cyst collapsed, a mere white fold indicating its position. The following day the patient expressed herself much relieved, and the irritation which had so long annoyed her subsided within a week. I did not see her again for three weeks, when she again called, complaining that her eye had become inflamed and painful, and on looking at it, I saw the cyst distended, about one-half its former size. I again used the needle, but this time not only punctured the cyst, but cut and tore it in several directions: relief was again afforded, and this time it was permanent, for the shreds of the cyst gradually shrank and disappeared, the eye becoming strong and able to bear the light, after the expiration of three weeks.¹

REMARKS. The nearest approach to the case of Master M. with which I have met, is recorded by Mr. Tyrrell, the outline being as follows. A fair and beautiful girl, about nine years of age, was brought to him for his opinion respecting a tumour connected with the iris of the right eye. It was about the size of a small pea, glistening like tendon, of a rounded figure, and attached near the margin of the pupil on the anterior surface of the membrane. It had been observed for several months, and had increased very gradually. The iris was otherwise healthy, and the vision good; but the motions of the pupil were somewhat interfered with. Mr. Tyrrell advised its removal, but his advice was for a time negatived. A few months afterwards, the tumour still increasing, gave rise to inflammation, principally affecting the iris. Mr. Tyrrell now removed the tumour and part of the iris. The patient went on well for three days; but at the end of that time she caught cold, and active iritis followed. For many weeks, this bade defiance to the mercurial treatment adopted; but at length the inflammation gave way, and the eye recovered, though with a very contracted pupil, admitting only of the perception of large objects. This tumour was attributed to the eye having been struck, some months before its appearance, by a bearded head of barley.

The aspect of the more delicate cysts, such as has been described in Case II, is very much that of an hydatid, except that there is always a definite base of attachment. The irritation excited by them is mainly the result of their being enclosed within the unyielding tunics of the eye; consequently, as they grow larger and require more space, painful tension is excited, and the iris, yielding more easily than the cornea, is pushed back or to one side. The treatment required is very simple; they may be simply punctured twice or thrice, or the delicate parietes may be lacerated with a needle, although the latter proceeding requires caution, in order that the iris may not suffer.

¹ Professor Wharton Jones has described (in a recent number of the *Lancet*) a well marked case of a cyst of a similar description.

Immediate relief is afforded by the escape of the pent-up fluid, and little, if any, irritation follows.

It has been suggested by Mr. Bowman, that the cause of these cysts is the formation of transparent fluid between the iris and uvea, which bulges forward the extensile fibres of the iris. That this takes place in some instances can hardly be doubted, as in a case related by the late Mr. Dalrymple, where a fissure appeared in the iris after such a cyst had been cured: still, I do not think this explanation applies to all the semi-transparent cysts found in the anterior chamber. In Case 11, the seat of origin of the sac corresponded to the seat of the injury, and was at the ciliary margin, rather than the posterior surface of the iris; moreover, after its disappearance, there was neither breach in the iris, nor perceptible alteration in its fibres, such as would have been apparent had they undergone much stretching.

The dense cysts are happily very rare, and are far less manageable than the preceding. If it can be ascertained that a cyst of this description is a growth from the iris, the neatest proceeding is to make a free incision in the cornea, then to grasp the cyst with forceps, or fix it with a fine hook, and, drawing it through the wound, it may, together with the portion of iris forming its base, be snipped off with a pair of iris scissors. It is well to make the incision in the cornea free: if this be too small, it embarrasses every stage of the proceeding, and renders much unnecessary bruising of the iris indispensable; and there is nothing more to be deprecated than this. During the traction of the cyst through the wound, it must be borne in mind that the iris easily separates from its ciliary attachment; therefore, the utmost gentleness is requisite.

Should the tumour originate from the ciliary body, and work its way behind the iris, the removal becomes one of the most difficult proceedings in surgery. I may safely aver that, of the numerous operations for extraction, removal of foreign bodies, or artificial pupil, which it has fallen to my lot to perform, not one even approached in perplexity to that related in Case 1. Before commencing an operation on one of these deep-seated cysts, the surgeon should weigh well all possible contingencies, so that he may be prepared to overcome every difficulty that may arise.

A congenital malformation may be mistaken for a tumour of the iris. A young lady was sent to me from the country, to have a tumour, growing from the front of the iris, removed. I was informed that it had existed from childhood; but as it bore a suspicious appearance, it was thought best to have it taken away whilst small, for which purpose she came to town. On cursory inspection, there appeared to be a small dark brown mass springing from the anterior surface of the iris: it was convex, and about the size of the head of a fly. Careful examination proved, however, that the supposed tumour was neither more nor less than a hernia of the uvea. There was a congenital gap between the bright hazel fibres of the true iris, and through this a little pouch of uvea protruded. Of course, no interference was recommended.

10, Berkeley Square, August 1852.