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CONGENITAL CATARACT,

WITH

IMPERFECT DEVELOPMENT OF THE LENSES.

BY

WILLIAM WALKER,

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[FROM THE MONTHLY JOURNAL OF MEDICAL SCIENCE, APRIL 1850.]

CONGENITAL cataract is a disease not unfrequently met with ; but congenital cataract, presenting the peculiar condition of the lenses, which I am about to describe in the following cases, is, I think, rare ; at least, in the course of my reading, I do not recollect to have seen it mentioned ; and I have, in my practice, met with only two cases of it.

CASE I.—Mr F. Q. W., æt. 20, tall, thin, and delicate-looking, consulted me in January 1849 for an affection of his eyes. His general health had never been robust, and he had been subject for several years to frequent pains in his chest. On examination, I found that there was a large prominence on the left side of the sternum, distinct hypertrophy of the heart, some trace of former pericarditis, and a phosphatic deposit in some of the joints.

When eight years of age, he received, on the left supra-orbital region, a severe blow from a stone, which cut through the upper eyelid. When twelve, some gunpowder exploded in his face, but merely singed his hair and eyebrows. At ten years of age, his sight, with both eyes, was observed to be very much impaired,—as much so, indeed, as it was when I saw him ; at the same time, both irides were discovered to be very tremulous. He could read with comparative ease at a distance of five inches ; but with the left eye he frequently saw two objects at the same time, the false object being always towards the left side ; and when the object looked at was a book, it was the false page which he read. Black spots and wavy lines appeared to be constantly floating in the field of vision, accompanied at times with dull red, orange, and greyish-white spots ; when the sun was bright, he saw all the prismatic colours as if falling from it in short curved lines ; when reading, there appeared to be a constant dull mist between his eyes and the book, and in a short time the eyes became much fatigued. Convex glasses rendered the vision worse ; but with a No. 10 concave, he saw a little clearer with the left eye ; while, to produce the same effect on the right eye, he required a No. 12 ; neither, however, improved vision very much.

On examining the eyes, the first thing which attracted my attention, was the tremulous state of the iris in both ; this gave them exactly the appearance which the eyes of those have, who have been operated on for cataract, and made me think, at first sight, that the lenses might be wanting. On exposing them to the influence of light, the iris in both was found to be lively and active in its movements, and the pupillary margin sharp and clear. The colour of the iris was grey. The anterior chambers were of their natural size, and there did not seem to be any opacity, either in the lens or deeper seated, at least that could be detected when the pupils were in a quiescent state. The globes were of their usual shape and firmness.

When the eyes were examined catoptrically with a lighted candle, only the corneal image could be seen ; there was neither deep upright nor inverted image.

On dilating the pupils fully with atropine, and then examining the eyes with the aid of a powerful condenser, a very slight greyish mist or opacity was seen to occupy the position of the lenses. In colour this opacity resembled a drop of very slightly turbid water on a black ground ; it was evidently seated in the lenses themselves, and occupied their whole extent. The lenses, however, did not as usual fill up the whole space behind the pupils. They appeared to be fixed to the ciliary processes above and towards the outer sides ; while towards the inner and lower sides, they were free, and had this free edge turned a little backwards, so that it was at a greater distance from the posterior surface of the iris, than the centre or upper edge which lay close to it—in fact almost touching it. Through the clear portion of the pupil below, and on the inner side of the opaque lenses, he could see a very little better. Both lenses had a very slightly tremulous motion when the eye was moved rapidly about. The appearance of both eyes is represented in Fig. I., the pupils being under the influence of atropine. No treatment was adopted.

CASE II.—J. K., *æt.* 25, a stout, healthy young woman, came under my care in November 1849. Ever since her infancy she has had imperfect sight ; and although able to work at both in and out-door occupations, she could never read when the book was held at a greater distance from the eyes than eight inches. She could always see best when looking directly forwards. Six months ago the vision with both eyes became so much worse, that she could neither work nor read, and was in consequence obliged to leave her situation. She could, however, manage to go about tolerably well when using the right eye, but very imperfectly when the left was employed. Glasses did no good.

As in the former case, the first thing which arrested attention, was the very tremulous state of the iris in both eyes, which looked as if it had no support behind. The eyes themselves were of their usual size and shape, and of their natural firmness. The irides were of a waxy brown colour, and they acted well. The left pupil dilated rather more fully than the right, but even when a strong solution of atropine was used, neither dilated so fully as they generally do. On looking very carefully into the pupils, a very slight greyish opacity could be seen, but indistinctly, unless a considerable body of light was thrown upon the eyes. The opacity resembled in colour a drop of turbid water, having a slightly greenish hue. On holding a lighted candle before the eyes, no inverted image could be seen, and the deep upright image was very faint and indistinct.

When the pupils were dilated as much as possible with atropine, the lenses were brought fully into view, and instead of their being of their natural form and size, they presented the appearance represented in Fig. II., with a clear space at their inner and lower edges, and through which she saw considerably better. Both lenses looked as if they had been arrested in their development, the left being rather larger, and also rather more opaque than the right, which accounted for her less perfect vision with that eye. The opacity of both was uniform throughout, and not very dense. They were apparently adherent at their upper and outer edges to the ciliary processes ; their centres

lay in close contact with the posterior surface of the iris, while their inner and lower edges, which were quite free and sharp, were turned backwards away from the iris. They moved backwards and forwards a little when the globe was moved like a flap or valve.

An operation for the removal of the lens, which was performed on the left eye of this patient at two different times, proved quite unsuccessful. This however, I will again refer to in the sequel.

On a review of the foregoing cases, several points present themselves for consideration.

In the first place, Was the disease congenital? We have no distinct evidence that it was; but I believe that it did exist from infancy, for in both vision was very imperfect from a very early age: in the first, the imperfection was discovered when he was only ten years old, or at that time when the eyes were more particularly occupied in the contemplation of minute objects, in the course of his education; in the second case, vision was very imperfect from infancy; and the opacity in both was so slight and so difficult of detection, that it might easily have existed from birth, without attention being directed to it, both patients being able to go about with comparative ease; and it is, I think, very rarely that we see the lenses becoming opaque in early life, unless they have been so congenitally.

In the second place, How was it that the lenses did not occupy their natural position, and fill up the whole of the space behind the pupil? This, I confess, is a difficult question, and can only be answered on the supposition, that from some cause or other, with which we are unacquainted, they had been arrested in their development,—at least I can give no other explanation of it.

One peculiarity, which was better seen in the second case than in the first, was, that the lenses in both eyes did not seem to be contained in any capsule; they presented exactly the appearance which the lens does when it is removed altogether from the eye, and the most careful examination failed in detecting any appearance of capsule. Had the capsule been present, we would have had it almost certainly opaque at one point or other, probably throughout; for in congenital cataract, both lens and capsule are usually opaque. No opacity, however, existed.

In the third place, Were the lenses, at their upper and outer edges, adherent to the ciliary processes or not? This question cannot easily be answered, as the pupils could not in either case be dilated so fully as to bring the whole body of the lens into view. That they were adherent to some part or other behind the iris, and that part pretty near the junction of that membrane with the ciliary body, was proved by the first operation which I performed on the left eye of the second patient, in which I introduced a needle through the sclerotic in the usual way, brought it in front of the lens, and then tried to depress it. This I utterly failed in accomplishing; the lens could not be moved from its situation; it could be pushed backwards, exactly like a valve, but it could not be made to descend.

In the fourth place, What was the state of the lens itself? On attempting to break up the lens at my second operation, the sensation communicated, when the needle passed into its substance, was, that it was of the consistence of firm curd; and here another peculiarity manifested itself,—not the smallest portion could be separated from the body of the lens; and the lacerations which were made in it by the point of the needle closed up again completely as soon as the instrument was withdrawn from the eye; and the day following the operation no trace of a wound in the lens could be discovered; the eye was exactly in the same state that it had been in previous to the operation. This shows a state of the lens quite different from what we meet with in cases of ordinary cataract.

In the fifth place, the tremulous state of the iris may, I think, easily be accounted for by the lenses not occupying their usual situation, and so giving support to the iris behind. We generally find that the iris becomes tremulous when the lenses have been removed either by accident or by operation; here neither of these occurrences had taken place, but the lens was small and drawn away to one side,—consequently the iris, particularly at its lower and inner side, had a much larger space to move in than it ought to have had; and it was at this part that the tremor was principally observed.

Lastly, these cases show the importance of making a very careful and minute diagnosis in affections of the lens, as they may easily be passed over or mistaken for other diseases. In the first case, from the imperfection of vision, the tremulous state of the iris, the want of the deep upright and the inverted images, and there being no appearance of any opacity behind the pupil, I had almost come to the conclusion that the lenses were wanting; it was only on dilating the pupil as fully as was possible with atropine, and then throwing in a strong body of light with a powerful condenser, and examining the eyes in various lights that the opacity became visible. In the second patient the diagnosis was not so difficult, as, from the history of the case, the greater opacity of the lenses, and from having seen the former case, I was in a manner prepared for it, at least for an opacity, but certainly not for the peculiar state of the lenses which was brought into view when the pupils were dilated.

47, Northumberland Street, February 1850.