An uncommon congenital anomaly in the vitreous chamber and the inner membranes of both eyes / by Charles J. Kipp.

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AN UNCOMMON CONGENITAL ANOMALY IN THE VITREOUS CHAMBER AND THE INNER MEMBRANES OF BOTH EYES.

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(With three colored drawings.)

The drawings shown here are taken from both eyes of a boy ten years of age. He was born in this country; both parents are natives of Italy. He has eight brothers and sisters, all of whom, as well as the parents, have normal eyes and are in good health. The boy is well developed, and apparently without other defect. Intellectually he is decidedly deficient. The right eye is of normal form, and the eye socket seems to be of normal size. He can move the eye in all directions without difficulty, but forced abduction causes violent nystagmatic oscillations in the horizontal meridian. Horizontal nystagmus is also produced by attempts at examination of the eye, and by almost anything that excites him. His vision is greatly impaired. He counts figures at about ten feet with either eye. The visual field can not be made out on account of the boy's mental deficiency. His parents tell me that his vision has never been better than it is now, and that he has had at no time an inflammation of either eye, or that the eyes have ever been injured accidentally. He came to the hospital at the request of his teacher, who found out that he was partially blind.

The anterior part of the eye is normal in every respect. There is no injection of the conjunctiva; the cornea is perfectly clear and of normal form. The anterior chamber is of normal dimensions and the aqueous of normal clearness. The iris is normal, the pupil of medium size and reacts normally. It is dilated ad maximum by atropin. The lens is of normal form and clearness. The vitreous is perfectly clear except in the outer third of the chamber, where there is a bluish-white mass, somewhat conical in shape, with its apex near or at the retina. This mass appears to be composed of almost transparent membranes, in the nasal portion of which, anteriorly, there is seen a tubular formation, the outer extremity of which flares, seems to be turned up all around, and from which project numerous thin processes pointing in all directions. (See Fig. I.) This tubular formation is of a dark color, almost black, as seen with the ophthalmoscope. Its diameter is about that of the largest retinal vessel. Its inner termination is somewhat broadened, but its end gradually fades away in the bluish-white mass. The whole mass, including the tubular formation, is stationary and does not float. The anterior part is best seen with a +12D glass. It can also be seen with oblique illumination. It then appears very white and opaque, and of the shape of a distaff. The optic disk is best seen with a —2D glass. The disk is very white, it seems small, somewhat irregular in shape, and on its nasal side it is bounded by a crescent of very dark pigment. (See Fig. II.) On its temporal side its boundary can not be made out. The central vessels emerge near its supposed temporal edge. Adjoining the outer part of the disk there is apparently a cleft in the choroid, which continues outward for a distance of about two diameters of the disk. From here on outward, almost to the limit of the ophthalmoscopic field, there is in the retina, or the same is covered by, an intensely white mass, at the temporal end of which are several bright red patches, in appearance not unlike fresh extravasations of blood. Beginning at the disk the cleft is about the width of two-thirds of the disk's diameter, and its middle is on a line with the center of the disk. It continues to be of this width for a distance of about

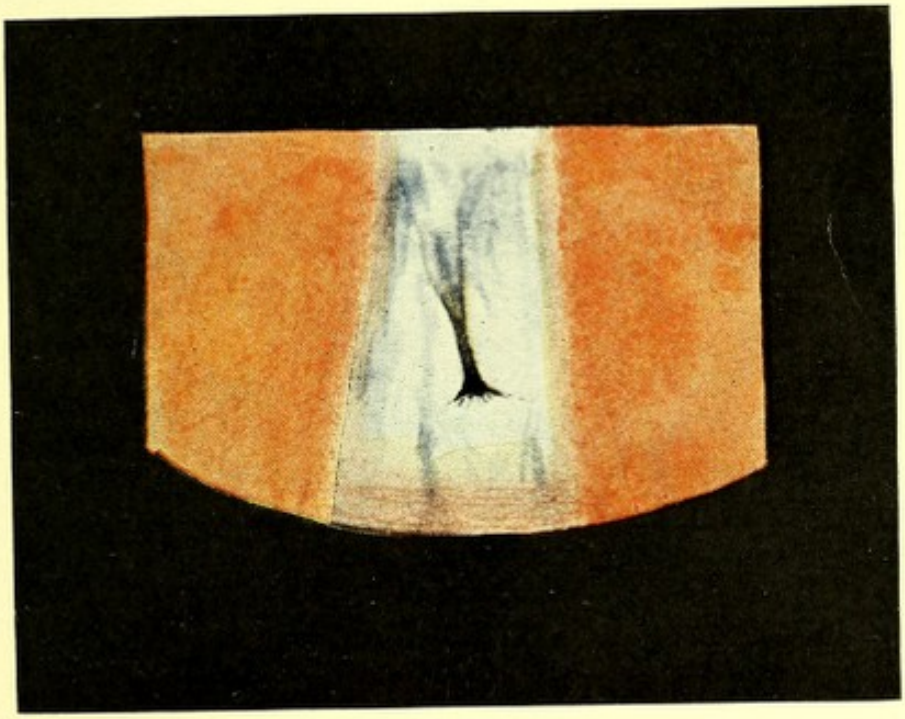

Fig. I.

two diameters of the disk. Up to this point its color has been whitish-blue. From here on it is somewhat narrower, and of a grayish-white color. Further out it becomes again much wider, and of a distinct white color. Near the disk the margin of the supposed cleft is lined by pigment, and further on, adjoining its lower margin, are several very white patches, bounded by and upon which are masses of pigment. Of the vessels emerging from the disk, the largest pass on to the coloboma, and continue on the same for a distance of two diameters of the disk. Here the main trunks pass off above and below on to retina, and turn backwards and upwards. Some small vessels are, however, continued on the whitish-gray band. I can distinctly make out both an artery and a vein, both in the upper and lower portions, and smaller retinal vessels in the middle of the supposed cleft. No choroidal vessels are visible. A little beyond the point where the large vessels leave the cleft, there seems to spring from the grayish band a whitish membranous mass, which seems to be connected with the bluish-white mass in the outer third of the vitreous chamber. Through this membranous mass it is seen that the white mass is on the retina, extends almost to the limit of the ophthalmoscopic field; it becomes broader beyond the place from which the membrane springs into the vitreous chamber, and is bounded by a silvery, shining mass above. At several places above and below this band there are also small shining white dots in the retina. Beyond its outer end the normal choroid is visible for a short distance.

The left eye (see Fig. III) presents almost the same appearance, except that at the outer end of the whitish band, in or on the retina, there are vast disturbances in the arrangement of the pigment. Here are large plaques of choroidal atrophy, with patches of pigment on same, and all more or less fringed with pigment. The mass in the outer third of the vitreous chamber does not extend forward as far as in the right eye, but otherwise it is like it, and has the same tubular formation in it.

There can be no doubt, I think, that the anomaly above described is congenital. Its symmetrical presence in both eyes,

as well as the coloboma in the choroid, and the arrangement of the retinal vessels, would seem to make this certain. I have been unable to find a description of a nearly similar condition in the literature at hand. As regards the tubular sheath and the membranous formation surrounding it, seen in the outer third of the vitreous chamber, I think that Hirschberg (Einführung in die Augenheilkunde, 2te Hälfte, I Abtheilung, p. 206) is right in his belief that it must be regarded as the persistence and condensation of the connective tissue surrounding the foetal artery of the vitreous body. In most of the cases in which this was seen it appeared as a bluish tube, extending from the region of the optic papilla, in which there was always an irregular distribution of pigment of the eye ground, through the vitreous chamber forward; it was fixed to the background by tent-shaped membranes composed of threads; from its body it sent out winged-shaped processes to the retina, and from its outer extremity radiated fine fibres and membranes diverging towards the posterior surface of the lens. Amblyopia, with central scotoma and convergent strabismus, was always present. In the case here reported it seems probable that the tubular body became detached from the posterior surface of the lens, and was pushed into the outer third of the vitreous chamber, where it became fixed, at some time during the development of the vitreous body. Posteriorly it was fastened to the coloboma of the choroid, at some distance outward of the optic papilla. I have described a somewhat similar case under the title "A Case of Persistent Hyaloid Artery in Both Eyes," in the Archives of Ophthalmology and Otology, Vol. III, Part I.