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THE ENLARGEMENT OF NORMAL BLIND SPOTS OF MARRIOTTE AND THEIR REACTION UNDER SYNTONICS

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Since Syntonics has been made available as an addition to the regular routine procedure of refraction, it gives us a reliable means of relieving cases with lenticular opacities, amblyopia and other ocular dysfunctions.

In order that we may understand more fully the retinal reactions under light frequencies used in treatment of ocular dysfunction, it is necessary and imperative to keep accurate records and graphs of case progress. With enough of this type data, accurately kept and compared, we may arrive at a justifiable prognosis.

For some time we have found that in treatment for:

1. Constricted Color Fields
2. Some types of Amblyopia.
3. Varied densities of the Crystalline Lens,

The field charts of many cases manifested blind spots of varying degrees of enlargement, and that these same abnormal blind spots, while the treatment for different ocular dysfunctions was in progress, became restricted and in certain instances normal in their dimension, in their reaction to motion, white, blue and red, Heidelberg stimuli, and that months later upon re-charting these fields, the Blind Spots retained the improvement manifested at the dismissal of the patient.

Riley has asked me to set down a few of the known causes of enlargement; also to discuss a few of the cases where there was marked rehabilitation of the Blind Spots under Syntonics.

The following cases may be found fully outlined in:

Diseases of the Eye, Ear, Nose and Throat
By De Schweinitz and Randall

Diseases of the Eye – By May

Fuchs Text Book of Ophthalmology – By Duane

Atkinsons Oculi Refraction Cyclopedia

Principles and Practice of Perimetry by Luther C. Peter

They variously state that an enlargement of the Blind Spot may indicate the existence of the so-called Normal Atrophy of Fuchs – granting that this actually occurs -, or a mill peripheral perineuritis, or some

other affection attacking only the fibres close to the periphery toward the distal extremity of the nerve. A coloboma of the nerve and its sheath is often attended by enlargement.

De Schweinitz states that it is probable that some are enlarged due to congenital defects. Diseases affecting the intraocular end of the optic nerve, such as Papillitis, cause not only a decided change in the visual field, but a much enlarged Blind Spot.

In traumatism with rupture and bleeding into the nerve, there is usually found a sectoral defect along with amblyopic and contraction of the visual fields, and that the relation between the Ophthalmoscopic appearance and visual acuity is frequently not commensurate.

Atrophy of the nerve accompanying Locomotor Ataxia and disseminate sclerosis are often the cause of enlargement of the Blind Spots. In myopia, staphyloma posticum may develop and the Blind Spot be rendered abnormally large and may even extend to the macular area.

Peters states that normal Blind Spots vary within normal limits depending upon anatomical differences, types and physiological variations. Slight irregularity may be due to variation of the distance of the retina from the scleral edge.

An average normal Blind Spot is only 1.5 mm. in width, while perimetrically it appears seven degrees in length and five degrees.

An enlargement of two degrees is considered significant and worthy of careful consideration. There is often a scotomatous area around the absolute area, which should not exceed one degree.

The direction enlargements take is also of much importance as in myopia and toxic amblyopia – two common causes for enlarged spots -, the enlargement is toward the point of fixation, whereas, in glaucoma, the enlargements start from above and below and circle the point of fixation, is more concentric like an iris diaphragm.

An enlarged Blind Spot may be found with syphilitic choroiditis with or without ring scotoma. Other general and constitutional diseases, which produce vascular changes, are found to be associated with this type of Blind Spot. In these diseases in which toxins and arterial hypertensions are the chief etiological factors, the enlargement of the normal blind spot of Mariotte often marks the beginning of a swelling of the nerve head incident to papillitis or choked disc, followed by hemorrhage and atrophy.

Primarily, instead of an absolute enlargement, an indistinct scotomatous area may be found completely or incompletely surrounding a Blind Spot of normal size, in which both form and color perception are uncertain, with an absolute enlargement manifested later, or, enlargement may be manifest with little other perimetric change. In other words, an enlarged spot may or may not appear as an isolated sign of field change. Peters goes on to say that, if the circulatory balance is restored, in many cases the nerve fiber degeneration may be arrested but regeneration of the atrophic nerve fibers does not occur.

We may, therefore, assume that nephritic retinitis, sinus disease, traumatism, papillitis, choked disc, glaucoma, vascular changes, toxins, arterial hypertension and nerve fiber degeneration may be regarded as characteristic causes of an enlargement of the normal Blind Spot. Most authorities agree that enlarged Blind Spots of Mariotte may be due to these causes.

However, since not one of the cases I shall present, has a past history of any of these diseases, I should like to question that these are the only causes for loss of visual perception in central, para-central, peripheral areas or in the area immediately surrounding the disc. My reason for raising this question is that these enlarged spots of Marriotte actually increase under Syntonics.

In charting the following cases, Lloyd's Stereo-Campimeter was used with one-half degree white stimulus under seven foot candles of illumination.

Case A. Mrs. A. S. – Asthenic – Age 64 – Date Aug. 3, 1936.

Vision with former prescription – O.D. 20/20 minus
O.S. 20/25

Visual acuity O. D. 20/40
O.S. 20/30

Transillumination – Both crystalline lenses translucent,
The left being more affected.

Ophthalmoscope – negative except for enlargement of the discs.

Prescription – O.D. Plus 75
O.S. Plus 50 Plus 50 Axis 180
O.U. Addition Plus 225

Vision with Rx – O.D. 20/18
O.S. 20/18

Field Study – Blind Spots were enlarged as seen in chart Number one. The case was dismissed for four months and on Dec. 8, 1936, you will note that Chart Number two manifests some increase in the size of the Blind Spot.

Vision on Feb. 18, 1937 was - O.D. 20/18
O.S. 20/22

Treatment was started on this date. The syntonic prescription used on alternate days was L – μ and NL – αω, one by one combination.

After fourteen visits vision was O.D. 20/18
O.S. 20/16

Field Chart Number three manifests a decrease in the size of both Blind Spots.

Prescription was changed to L – μυ for six more visits and on April 13, 1937, vision was O.D. 20/18
O.S. 20/16
And both spots manifest further improvement. This case will be checked again on September 1st and progress notes.

Case B. Mrs. H.G.C. – Pyknic – Age 63 – September 23, 1936

Eyes have been amblyopic for twelve years to my knowledge.
On the date of latest refraction –

Visual acuity - O.D. 20/640
O.S. 20/640

Prescription - O.D. Plus 4.75 Plus .50 Axis 75
O.S. Plus 3.50 Plus 2.oo Axis 105
O.U. Addition Plus 2.75

Vision - O.D. 20/20 Plus
O.S. 20/30

Ophthalmoscopic examination – Negative, except the disc margins had receded from the nerve head.

Field Chart Number One – Both Blind Spots were enlarged.

History – As the patient had suffered considerable discomfort in left side of head and left eye, I referred the case to an Oculist for corroboration. His report stated that the patient had a slight sinus infection and that there was no apparent pathology manifest in either fundus.

Progress Report of Sept. 25, 1936 - O.D. 20/20 minus
O.S. 20/30 minus
with ocular discomfort about the same.

December 9, 1936, vision was - O.D. 20/20
O.S. 20/30 minus

By May 28, 1937, her Visual Progress Report – Head and eyes painful
And painful and vision was: - O.D. 20/25
O.S. 20/40

Field Chart Number Two was made June 2, 1937, and was about the same as that of Sept. 3, 1936.

Started treatment – after thirteen syntonizations of L – μυ, almost no headache or eye discomfort.

Vision was - O.D. 20/18
O.S. 20/25

In Field Chart Number Three, you will note that the Blind Spots are normal in size. This graph was made July 2, 1937.

Case C. Mrs. D. G. – Syntonic Type – Age 29. –
Chief complaint was that she observed black spots below the line of vision with the left eye.

Vision with her prescription - O.D. 20/16
O.S. 20/18

Visual Acuity O.D. 20/40
O.S. 20/50

Transillumination – Negative

Ophthalmoscope – Negative, except that the disc appeared enlarged.

Phoria at distance with new Rx. Exophoria – 3 degrees.

Phoria unfused cross cyl. Exophoria – 13 degrees.

Telebinocular - Failed both far and near fusion.

Field Study March 30, 1937. – Both blind spots enlarged vertically.

Treatment prescription, Tel-Eye-Trainer, prism base out and L - μυ, for Six visits followed, by more prism base out and L – δ.

Fusion did not show sufficient recovery, but Field Study, May 25, 1937, Number Two, manifested normal blind spots and chromatic fields more nearly normal.

This case was given more training on the Tel-Eye-Trainer until fusion was normal and case dismissed.

Case D. Mrs. LM. M. – Syntonic Type – Age 49 – Date may 27, 1937.

Chief complaint was ache over eyes and nose. Eyes felt dry. This case had a complete hysterectomy in 1927.

Vision with old prescription was - O.D. 20/40
O.S. 20/ 40

Visual Acuity - O.D. 20/200
O.S. 20/200

Transillumination lenses slightly translucent.

Ophthalmoscope – Negative.

Prescription - O.D. Plus 2.00 Plus .50 Axis 180
O.S. Plus 1.75 Plus .50 Axis 180

Vision - O.D. 20/25 Minus 2
O.S. 20/22

Field Chart Number One – All fields restricted and blind spots enlarged.

After six syntonizations of L – μυ was: -
O.D. 20/16
O.S. 20/16

And after four more treatments, Chart Number Two manifests great improvement in all fields and the blind spots are normal.

Chart E. Mr. O.L.D. has been a patient of mine for nine years and May 12, 1936, his Field Study was normal and blind spots normal – Chart Number One -, this being the date of his last refraction before suffering retinal hemorrhage and coloboma in the macular area, which occurred during a violent spell of vomiting, leaving his right eye blind in and around his point of fixation. Mr. D., due to an emergency appendectomy, was unable to call at our office until five weeks after his right eye was nil, though he could distinguish large forms par centrally. Chart Number To manifests a large central scotoma and some enlargement of his blind spot. Mr. D. was then referred to an Ophthalmologist, where he was informed that sight could never b e restored. We proceeded syntonically with NL – δω and L – 5, one by one combination, and in six treatments, vision was 20/400; the ophthalmoscope showed a decrease in the coloboma and Chart Number Three on June 3, 1937, manifest a great improvement in the scotoma and his normal blind spot had

reduced in size.

Treatment was continued. July 23, 1937, Mr. D's vision was 20/114 and Chart Number Four manifests further improvement in the macular area with a disc of normal dimension.

This case is still under treatment.

It is an acknowledged fact that nephritic retinitis, sinus disease, traumatism, papillitis, choked disc, glaucoma, vascular changes, toxins, arterial hypertension and nerve fiber degeneration cause enlarged blind spots, and in view of the fact that the cases just discussed did not have a past history of any of these diseases, Ophthalmoscopic findings were negative, the only positive findings being lowered visual acuity, slight restriction of the color and form fields and enlarged blind spots, did these cases earlier in life undergo ocular changes resulting from any of the causes mentioned, or was some degenerative physiologic change advancing, which was averted by suitable Syntonic ocular procedure.