SUBNORMAL ACCOMMODATION; THE RESULT OF FOCAL INFECTION.

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In the three cases here reported subnormal accommodation was associated with focal infection in the tonsils. Removal of the tonsils in one case was followed by rapid recovery.

Some years ago I had at about the same time three patients with subnormal accommodation. All of these had nasty, infected tonsils, which would get inflamed on the slightest provocation. As these people were perfectly all right every other way, I felt sure that the tonsillar infection was the probable cause of the lack of normal accommodation; but as none of them would have his tonsils removed I could not determine this to my satisfaction. To the most promising one I offered to remove the tonsils without any charge, but without avail. And just at this time some physician published in *The American Medical Journal* an article on focal infections and their relationship to diseases of the eye; and in it was cited a case of a boy whose accommodation was practically abolished, which promptly returned to normal after the removal of diseased tonsils. I read this article to my proposed victim, but it did not interest him enough to have his tonsils removed: so I had to put the idea in the background, awaiting for a suitable occasion to demonstrate to my own satisfaction the relationship between lack of accommodation and infection from chronically diseased tonsils.

In the last two years I have had three other cases of this character, so I should judge that they are not common. Of this group I was able to persuade one to have his tonsils removed; and while he lost his tonsils he got back his accommodative power and I got the data that I had been waiting for these years.

Case I. Mrs. B., age 32. Could not read even for a short period without blurring and exhaustion. Had worn glasses for some time. Subject to sore throats, and had quinsy three or four times. Examination revealed large red tonsils, with enlarged crypts filled with plugs; foul secretion exuded on

pressure. She was refracted under drops, and with the correction the near point for both eyes was 8 inches = age 37. After three weeks the near point was 10-11 inches = age 42. We had to add plus one sphere to the static refraction to enable her to read with comfort. About one year ago examination revealed the near point at 9 inches, with this correction.

Case II. Mrs. A., age 37. Complains she cannot see to sew, and eyes blur. Wears glasses constantly. Distance correction given under drops, but had to add plus one sphere to this to enable her to sew with comfort. The near point with this addition was then 10 inches = 41 years of age, with a presbyopic correction for the average person of 45 years of age. Examination here revealed badly diseased tonsils, with pus in the crypts.

Case III. Mr. P., age 24. Complains of headaches; gets drowsy in the afternoons, and when he tries to read in the evenings he usually falls asleep—the typical history of a presbyope. Has been wearing glasses fitted by an oculist for a year; but these have not helped him at all. After the drops had worn away and with the correction the near point was 6 inches = age 31: one week later the near point was 8 to 8½ inches = age 38.

History revealed he has been subject to colds, which usually settled in his throat. The examination revealed large, chronically inflamed tonsils and a large adenoid. About three weeks after I gave him his glasses he had an attack of tonsillitis; and when this had subsided he had the tonsils and adenoids removed under local anesthesia by Dr. McNaught, who also remarked on their diseased condition. Three weeks after the removal of the tonsils the near point had advanced to 5½ to 6 inches; and two weeks later than this the p.p. was 4 to 4½ inches, the av-

erage range for a man of his age. He reported that he felt fine and was able to use his eyes with perfect comfort and with none of the distressing symptoms that he had previously experienced. In this case it is quite interesting to note that the converging power is 40 degrees plus, showing that the unusual effort expended to get accommodation had stimulated the twin function of convergence.

After the use of homatropin some eyes are slow to regain their normal tone. The use of pilocarpin at night for a week is very useful here; but if there is any complaint for a longer period than this the cause is apt to be reduction of the accommodative power of the sphincter.

Whenever one encounters a case of subnormal accommodation it is well to bear in mind, however, that there is another cause for this symptom. Neurasthenics are frequently troubled this way; but their complaint is usually quite different from the tonsillar type. They report that their eyes are tired and ache in the mornings and that it is quite an effort to use them at first, but as the day wears on they get limbered up and this discomfort passes away; and after dinner they usually feel quite fit. These are the people "who hate to get up in the morning and to go to bed at night."

On the contrary, the infectious type have a history similar to presbyopia,—the eyes begin to tire as the day proceeds; they get drowsy in the afternoon and are apt to go to sleep trying to read at night. These facts are quite interesting, for if the accommodation of the first type were examined late in the afternoon it might appear normal; while in the latter, an examination early in the day would give an incorrect idea of the accommodative power. Just as the patient who has reached the presbyopic age, it is often necessary to measure the accommodation after the eyes have been used all day, to get the right estimate of the cause of the eye discomforts.

The preceding paragraph has just been read to a student in the University. He is a neurasthenic and he stated that the description of that type

fitted his case exactly. Mr. M., age 19, has been wearing glasses for 18 months, but has frequent headaches. The near point with his old correction (which was fitted by another man) is $6\frac{1}{2}$ inches = age 33. His tonsils have been removed, but there is still a large piece remaining in the right apex; and this piece is inflamed and red. This may have some influence on his accommodation; but in addition to this he is of the neurotic type. With the new correction, determined under drops, his near point is $5\frac{1}{2}$ inches, the range of a man of 29.

Focal infections from the teeth and nasal sinuses have not in my experience caused weakness of accommodation. Infected teeth have usually caused a spasm and where excessive spasm exists, under drops, I inquire into the condition of the teeth. Chronic inflammation of the nose may cause an upset of the nervous equilibrium, and thus indirectly be responsible for such cases.

Of course any general disease sufficient to cause intoxication of the whole muscular system would naturally affect the ocular sphincters, as a part of that system; and it is more than probable that in cases of infection from tonsils observations on the behavior of the general muscular system would also show evidences of weakness.

This paper has been presented simply to emphasize the fact that there are cases of eye distress the direct result of insufficient accommodative power; and in these cases of discomfort after the eyes have been carefully refracted it would be well to investigate the accommodation and if that be impaired then look farther for the cause of it.

Civilization demands greater use for the eyes, both in business and in pleasure; and therefore a function that is so constantly used must needs be carefully guarded and preserved. And every examination of the eyes should include an investigation of the range of the accommodation.

The question of glaucoma, of which diminution in the power of accommodation is a prominent symptom, has not been considered here; the cases cited having no symptoms of that disease.