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Diminished Visual Acuity as a Problem of Visual Geriatrics

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Regarding the various eye conditions resulting from general systemic conditions, time does not permit a full consideration of all the headings so an attempt will be made to discuss the first three only. They are: Diseases of the Nervous System, Diseases of Metabolism, Diseases of Urinary Organs.

The eye signs by which attention is directed to certain diseases of the nervous system are to be found in the pupil as well as chromographic and fundus diagnosis. First it is necessary to ascertain whether or not the patient is suffering from a functional or structural nervous disorder. In younger people, especially women, it is wise to think first of a functional difficulty, while in senescence, the emphasis rests more heavily on structural disorders.

The recognition and interpretation of the various pupillary reactions are too well known and need not be repeated here. In passing, I have noticed an increasing number of convergence insufficiency cases. The patient complains of much more discomfort, all out of proportion to the refractive condition, low plus findings, dilated pupils and fusion usually below 30%. Corrective technique or a little prism does wonders for these cases.

The value of chromographic diagnosis is known to all but not perhaps as fully as it should be. There are cases when the entire neurological diagnosis will center around the ocular chromograph.

Perhaps the most common of all eye cases that come into our offices with a nervous system involvement, are the neurasthenics. In addition to a few other symptoms, such as fibrillary tremor of the muscles, eye symptoms are among the most important objective signs in neurasthenia. In a large number of cases, we find the often-mentioned bilateral concentric narrowing of the field of vision with or without impairment of central vision. In these days of speed, nervous tension and pressure, this narrowing of the field of vision is of greatest importance in the field of traffic safety and industrial hazards. There is much that the visual diagnostician has to offer the biological chemist, psychologist and neurologist in the study of fatigue.

It is difficult at times to distinguish between neurasthenia and mild degrees of hysteria. Like all other neurasthenic phenomena, the eye symptoms are due to either general weakness and rapid exhaustion of muscular innervations - orbicularis, internal recti, ciliary muscle – or to increased sympathetic reflexes – contraction with or without subsequent relaxation. The latter cause probably explains the imperfect closure of the lids, the pupillary symptoms, and probably the disturbance of vision. The coincident occurrence of both kinds of symptoms, the irritable weakness, is the characteristic feature. Perhaps the sympathetic symptoms also include the conjunctival hyperemia and dry catarrh. In cities of any size, this dry catarrh is further aggravated by the smoke and fume problem.

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Retinal asthenopia is abnormally rapid exhaustion of the eyes similar to that found in weakness of accommodation or insufficiency of the internal recti. Retinal asthenopia is usually a symptom of a general debility condition or a neurasthenic condition. It is the most striking symptom simply because of the patients inability to follow any occupation without great difficulty and they feel the giving away of the eyes with special severity. Recovery will result only from the appropriate general treatment which is often long drawn out.

A few words regarding tumors of the brain may not be out of place at this time. Tumors of the brain may run a long latent course if they develop in a part whose destruction causes no noticeable local symptoms, and if their growth is slow so that he adjacent parts may yield. This may even happen in the immediate vicinity of those parts whose irritation or destruction causes the most striking local symptoms, for example, in the region of muscle nuclei. In such cases, we must assume that the tumor simply displaces the adjacent tissues abut does not destroy them nor even interferes materially with their functions. It is evident that pressure alone causes no very great disturbance if the parts can escape to one side and there is not an increase in intracranial pressure. A tumor may also grow mainly in one direction while it advances very little or not at all in the opposite direction.

Typically choked disc – papillitis optic neuritis – is almost the most important symptom in the diagnosis of brain tumor of whatever kind or wherever situated. Sooner or later, often shortly before death, it is added to the other symptoms in a very high percentage of cases – two thirds or more. Choked disc does not occur with equal frequency in tumors of the different parts of the brain. It is said to be somewhat less frequent in tumors of the frontal lobes, more frequent in those of the cerebellum, and adjacent parts. It also occurs in tumors of the spinal cord, but less constantly. Another point to remember is that the Ophthalmologist or brain specialist is not always right in his diagnosis of brain tumor but we should always be on our guard should one of these unfortunate patients come into our office. A choked disc should always be considered serious, and if there is associated with the choked disc a history of vomiting, headaches, slow pulse, and disturbances of speech, the diagnosis is fairly conclusive. The vomiting is of the expulsive or spasmodic type. There may also be associated the other symptoms: anisocoria, tremors, from rapid spasms to seizures, unilateral affections slow in developing, serious disturbances in ocular rotations, strabismus, the eyes tend to turn toward the affected side, nystagmus, and wide variations from normal in the chromograph charts. In any event our duty to the patient is to refer as quickly as possible to competent medical authority.

An entire paper might well be devoted to the physiological activity of metabolism and its relationship with normal, functional and pathological eye conditions. In a single short sentence, Metabolism means the ingestion of food, utilization thereof, and the elimination of unwanted and poisonous by products. Quite often a patient is told by his doctor that his liver is sluggish or out of order, but few doctors are able to define with a degree of accuracy the symptoms that are referable to a disordered liver. Functional derangement of the liver and renal insufficiency are intimately associated and are mutually responsible for occurrence of many eye symptoms as well as those that are attributed to defective elimination of waste products. Cathartics, laxatives, and enemas are given to clear the lower bowel, and usually some relief is experienced by the patient, but unless the proper steps are taken, this

relief is only of a temporary nature. The treatment must be directed elsewhere for the retention of waste products in the bowel may be a symptom of something else and not a cause in itself. It is common experience that if the liver is sluggish and not doing its work efficiently, a greater burden is thrown on the kidneys, which must overwork in their efforts to eliminate an excessive quantity of waste material.

Let us quote a bit from Dr. A. Ramsy on this all important subject: "If health is to be maintained, there must be not only a proper supply of suitable food and fresh air, but also a thorough elimination of waste products. Arrangements for that purpose exist in every organ of the body, all of which are mutually dependent, so that if the physiological function of one be impaired, the others suffer with it. The kidney is not only the chief elimination organ of the body; it also maintains a proper water balance in the tissues and exercises a controlling or regulating influence over all other organs concerned in the excretion of waste products; by that means it ensures a standard quality of blood. The subject of renal inadequacy is therefore of great interest to every general practitioner and Visual Geriatrician, because a very high percentage of the symptoms of ill-health are due to the retention of toxins in the blood. It must be admitted, however, that renal inadequacy presents neither signs or symptoms that are pathognomonic, and it is very unlikely that in the first instance the patient will make any complaints referable to the kidney. The truth is that renal inadequacy must be looked for as the probable cause of symptoms referable to organs other than the kidneys,"

"The first question to be answered is: How can the functional activity of the kidney be determined? The only person who can supply the information necessary for the answer to that question is the patient himself. He finds that he cannot now do many of the things he has been in the habit of doing. He consults his doctor to find out the cause of his difficulties. He states that until a few months ago, he was able to eat and drink to his heart's content without feeling the slightest discomfort, even after occasions when he knew he had exceeded. He says he never knew what it was to have a headache – to that we may add eye-ache and – and considered that he had excellent health, but now many of his favorite foods disagree; his digestion is easily upset. Of his own accord he has given up smoking and drinking and any form of alcohol upsets him. Not only is he unable to take certain articles of diet but the foods he is allowed must be taken in small quantity. He complains of this handicap. Life had lost many of its pleasures because of restrictions which hamper him on every hand, his work costs more effort, and he finds his strength is easily exhausted,"

All tissues of the body are bathed in lymph, which reaches them through the walls of the capillaries, and each individual cell takes from the fluid surrounding it the nourishment which it needs and casts into it the effete products of its metabolism. In health there is a delicate physiological balance between assimilation and excretion, and a breakdown in that arrangement is one of the earliest departures from health.

When it is found there is a renal inadequacy every organ of the body may be implicated. The eye, owing to the transparency of its structures, is often a mirror in which is reflected much of what is going o in other parts of the body, and in the study of diseases of the kidneys the Ophthalmoscopic examination and diagnosis is frequently of great value. Also defective elimination may play an important role in the etiology of a large number of inflammatory diseases affecting the eyes and their appendages.

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There has been very little work done in this field by the medical men and it is a field productive of immeasurable benefit both to the patient and to the practitioner. The wisest procedure for the Optometric Visual Geriatrician is to work his cases with some good medical internist retaining at all times the full control of the patient. The difficulty of vision first caused the patient to seek the assistance of a professional man. And that therefore is the end object in view. Any other benefits or discoveries made are secondary and should be considered as such.