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TABLE OF CONTENTS

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ORIGINAL ARTICLES

- THE CLOSE RELATIONSHIP EXISTING BETWEEN THE GENERAL PRACTITIONER AND THE OPHTHALMOLOGIST AND OTO-LARYNGOLOGIST. *By T. H. Odeneal, M.D., Beverly, Mass.* 459
- POST-INFLUENZAL ALOPECIA. *By Samuel Ayres, Jr., A.B., M.D., (Kansas City) Boston.* 464
- FOCAL INFECTION AND ITS RELATION TO TOXEMIA OF PREGNANCY WITH OR WITHOUT CONVULSIONS. *By John E. Talbot, M.D., Worcester, Mass.* 469
- NOTES ON TREATMENT OF LOW BACK STRAINS. *By Herman W. Marshall, M.D., Boston.* 473
- PNEUMONIA AND EMPYEMA. *By First Lieut. Horace Gray, Medical Corps, U. S. Army (concluded).* 475

BOOK REVIEWS

- Treasury Department, United States Public Health Service Hygienic Laboratory Bulletin No. 112. 477
- Surgery of the Spine and Spinal Cord. *By Charles H. Frazier, M.D., Sc.D., and Alfred Reginald Allen, M.D.* 478
- Forced Movements, Tropism and Animal Conduct. *By Jacques Loeb, M.D., Ph.D., Sc.D.* 478

EDITORIALS

- TERMINATION OF WAR ACTIVITIES OF THE GENERAL MEDICAL BOARD AND ITS COMMITTEES. 479
- SUPPRESSION OF PROSTITUTION IN PORTO RICO. 480
- ROCKEFELLER FOUNDATION APPROPRIATIONS FOR 1919. 481
- CLINICAL OBSERVATIONS IN MILITARY ROENTGENOLOGY. 481
- LIEUTENANT-COLONEL JOHN MCCRAE, POET AND PHYSICIAN. 482
- MEDICAL NOTES. 482

CORRESPONDENCE

- THE WRONG KIND OF GROUP MEDICINE IN SMOLLETT'S TIME
William Pearce Coues, M.D. 486

MISCELLANY

- RÉSUMÉ OF COMMUNICABLE DISEASES FOR FEBRUARY, 1919. 484
- RED CROSS CONFERENCE AT CANNES. 484
- NOTICES, RECENT DEATHS, ETC. 486

Original Articles.

THE CLOSE RELATIONSHIP EXISTING BETWEEN THE GENERAL PRACTITIONER AND THE OPHTHALMOLOGIST AND OTO-LARYNGOLOGIST.

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ALTHOUGH the general physician of today is, as a rule, well read, it is a physical impossibility for him to read all the journals published, first, because it would be a financial load of no mean proportions; secondly, because of the infrequent appearance in the journals for which he is subscribing of the subjects on which my paper is based; and thirdly, because of the paucity of information and references to these subjects in the text books on the practice of medicine, he is often in ignorance of the relations existing between certain general symptoms and the diseases of the anatomy of eye, ear, nose, and throat.

It seems, therefore, that a paper dealing with those symptoms (in concrete form) which oftentimes have their origin in the eye, ear, nose, or throat, will be of value both to the physician and the patient, and indeed it is at the instigation of a well-known physician that I offer this article.

Certain symptoms ordinarily looked on by the physician as some general disturbance of the metabolic, systemic, or nervous function of the body, may be traced to an affection of the particular anatomical point dealt with by the ophthalmologist and oto-laryngologist.

In consideration of the particular parts involved, I will take them up in consecutive order.

THE EYE.

Refractive and Muscular Errors—Due to complex anastomoses of the sensory and sympathetic nerves of the eye, reflex disturbances originating in the eye are very common.

Gastric and Intestinal Disorders: A patient visits the doctor complaining of nausea and vomiting, constipation, dizzy spells, seeing double at times, loss of appetite, headaches, with consequent malnutrition. Various remedies are prescribed, lavage practised, test meals given, diet, tonics, and fresh air prescribed, with some improvement, but of short duration. A diagnosis of nervous indigestion is perhaps made, and the patient allowed to drift, until seen by a more advanced physician, who orders the eyes examined, when a muscular or refractive error is perhaps disclosed, glasses or muscular exercises prescribed with relief of the symptoms.

Lack of proper digestion and a flatulent

condition of the intestine are often present from eye strain.

Nervous System: Extreme degrees of nervousness bordering on insanity are sometimes present. Hysteria in children is often relieved by correction of refractive errors. School children with only slight errors sometimes are very nervous, cannot remain long seated, are constantly moving about or wishing to play, and cannot concentrate long on one thing, for example, their studies. Convulsive attacks occasionally occur. There is pain in the eyes or reflexive pains in remote parts of the body, nervous twitchings of eyes, fingers, or lips, and squinting. Masturbation in children, in my opinion, is occasionally caused by refractive errors. Various habits, which the mother attempts to correct in the child, such as snuffling, sucking the thumbs, picking the nose, etc., can often be laid to the eye. Neuralgia, unilateral, of orbit or temporal region, may be complained of by adults. Painful spots on the head, tender to the touch, are met with. Headaches are common, but may be absent, generally localized in the frontal or occipital region, usually worse as the day advances, but often present on arising in the morning. Close work (reading, embroidering) aggravates or brings it on. Dizzy spells are complained of frequently and may come on while in the act of stooping or arising suddenly, or when observing something closely, as, for example, attempting to read the name of a street on an approaching car. A person will be attacked suddenly while walking on the street. Entering a lighted room from a dark one may bring on an attack of dizziness.

In the cases of muscular imbalance the vision may be perfect, also in a great many of the refractive error cases the patients may aver that they see perfectly. Children, previously healthy, may gradually become morose, disinterested in all children's pastimes, lose their appetite and fall off in weight, a physical examination producing nothing abnormal, tonics being prescribed, and the child withheld from school, without any improvement, a simple refractive error being the fault.

Glaucoma: In this disease (increased intraocular tension) the patient complains of headaches which are often violent, commonly called "migraine" (some oculists even go so far as to say that all cases of migraine are due to an increased intraocular tension), but may be very slight or absent. Usually the headache

is very frequent or constant and generally deep seated behind the eyes. Seeing spots or flashes of light before the eyes is often complained of, or a halo about a light is noticed with a ring of colors. The vision gradually diminishes, a film appearing before the eyes. Passing acquaintances without recognizing them (due to the narrowed fields of vision) is complained of. This disease results in blindness, if allowed to continue, and should be recognized at the earliest possible moment.

Miscellaneous: Disease of the endocrinous glands is closely allied with the eye, especially the disease known as goitre. The ophthalmologist is in a position to recognize goitre long before any general diagnostic symptoms are manifested. In this disease such eye symptoms as Stellwag's, Moebius', Gifford's, Kocher's, von Graefe's, Mueller's, Joffroy's, and exophthalmos may be present, some of them presenting the earliest symptoms. Hemianopsia and optic atrophy are sometimes present. Many of the cases of choroiditis seen by the ophthalmologist are early signs of goitre before other manifestations present themselves.

Paralysis of the ocular muscles and changes in the fields of vision (perimetric examination) are of particular assistance in localizing brain tumors or abscesses, and often are the only indications of the disease. Pupillary reactions and fundus changes are sources of great help as well.

Affections of optic thalamus with the consequent symptoms such as sensory disturbances, hemiataxia, etc., are well nigh impossible of diagnosis without the aid of the ophthalmologist.

The diagnosis of disease of the hypophysis is aided very much by the examination of the eye grounds, whether of the hypo- or hyper-pituitarism type or a mixture of the two (the most common). Symptoms such as acromegaly, gigantism, asexual development, headaches, stupor, lack of mental development are usually present.

In tabes, palsies of the various eye muscles may occur (20% of cases) temporarily, to disappear and return again at a later date. Eye examination should be advised on suspicion of tabes. Diminution or loss of color perception are early signs of optic atrophy which accompanies about 10% of these cases. The Argyll-Robertson pupil occurs in about 80% of cases. Irregularity and inequality of the pupil are early signs.

THE NOSE.

Maxillary Sinus: Disease of this sinus is generally easily recognized, and therefore I will dismiss it with a few remarks. An acute attack is often mistaken for an abscessed tooth. The pain is sometimes referred to the ear, which may be the only sign of pain; tenderness over the infraorbital area is present. In chronic cases the pain is negligible except when the drainage is prevented from any cause. A febrile rise in temperature may occur in the evenings, resembling hectic fever, this being due to absorption of toxins from the pus present; this type of sinusitis often remains unrecognized. A discharge of pus from the nose is usually present. A neuritis of the side of the face may be complained of, no other symptoms manifesting themselves, the second branch of the fifth nerve being the one affected. A vacuum disease of this sinus is described, causing reflex pains or neuralgia in the teeth, orbit, or throat, etc., or a hacking cough.

Frontal Sinus: Headache, unilateral or bilateral, usually appearing about 10 o'clock in the morning, is complained of, aggravated by stooping. Pus is discharged from nose at intervals if in the purulent stage. In acute cases the pain is severe, sometimes resembling the incipient stage of herpes ophthalmicus and the bone is tender to pressure over the supraorbital area. Vision may be disturbed. In the chronic cases the patient becomes anemic and neurotic, of an irritable temperament and complains of a bad taste in the mouth, and the digestion is disturbed. These chronic cases sometimes lead to suicidal mania.

Ethmoids: In disease of these cells a chronic cold is present, pus is discharged from the nose (except in the hyperplastic cases). Reflex disturbances are common. Pain may be present in the eye of that side, and visual disturbances with their consequent train of symptoms as explained under refractive errors, headaches, or neuritis occur. A case is reported of violent colicky pains resembling appendicitis as having occurred due to the retention of pus in the cells. Absorption of toxins from the pus may cause disease in remote parts of the body, as rheumatism, nephritis, and bronchitis. Nervous disturbances, in children especially, may occasionally be laid to this disease. Stomach disturbances are common, due to swallowing the discharge from the nose. Hay-fever and cutaneous rashes

may have their cause in diseases of these structures.

Disease from focal infections is caused in one of three ways: First, by metastasis of pathogenic germs from infected foci; second, by absorption into the circulation of bacterial toxins; and third, by disturbance of vasomotor balance, either through mechanical irritation or toxic action of bacterial poisons.

Sphenoidal Sinus: This sinus is situated in the body of the sphenoid with openings into the superior meatus of the nose. The roof of the sinus is very thin and has coursing along and internal to it the cavernous sinus enclosing the internal carotid artery, the third, fourth, and sixth cranial nerves, with the first and second branches of the fifth in close relation to the side of the sinus. The third branch of the fifth and the vidian are also sometimes closely related to it, due to the malposition of the sinus. The sphenoid is variable in size, one of the sinuses being almost absent occasionally, the other encroaching upon it due to its extraordinary size, being twice the normal at times. Again the sphenoid may be replaced by an enlarged ethmoid cell. The optic nerve is closely related to the sphenoid as is also the hypophysis. The sympathetic nerves supplying the upper part of the head are in close relation to this sinus, irritation of which causes vasomotor disturbances of the eye, nasal mucosa, etc. This sinus has been gaining in importance as the years go by, due, principally, to the untiring efforts of Dr. Sluder. The important part it plays in medicine should be known to the general physician. There may or may not be a suppurative condition of this sinus, a hyperplastic condition only being present at times without a discharge, which makes a diagnosis of disease of the sinus very difficult in such cases. Through erosions of the wall or roof of the sinus the various nerves mentioned above may be attacked, causing diminution of sight or blindness, partial or complete paralysis of certain eye muscles, neuralgia of the parts (teeth, upper and lower jaw, orbit, palate and side of nose or pharynx) supplied by the sensory nerves mentioned or the typical douloureux may be present. Headache, usually occipital or temporal, is generally present. The patient becomes extremely neurotic and the health is impaired. Absorption of the toxins or bacteria from the pus into the system may cause disease in other parts of the body

the same as from any other focus of infection, rheumatism, arthritis, etc., being the result. Anaphylactic reactions are often met with, causing skin rashes or other forms of irritation, as hay-fever, bronchitis, etc. Asthma, contrary to past belief as being of nervous origin, is now thought to originate from toxic reactions, thus forming the nervous condition found in asthma. These toxins are frequently of nasal origin—the anaphylactic reaction being produced by the proteid constituents of the bacteria or toxin present. This reaction is identical with that of the anaphylactic reaction obtained from the proteids of food, and just in the same way that we have to withhold the especial food causing the anaphylaxis, so do we have to eradicate the focus from which these organisms and their toxins are generated.

Meckel's Ganglion (spheno-palatine): There are two classes of symptoms met with from disease of the spheno-palatine ganglion: First, the facial and associated neuralgias of which the tic douloureux is the acme of the height to which neuralgias reach; and second, the hemicranias and deep occipital pains. The tic is a most dreadful disease, causing untold suffering, so much so that the patient is willing that any procedure be tried for relief of the attacks. I have seen as many as 15 injections made without the aid of anesthesia, the patient ever ready for more, notwithstanding the fact that the needle is introduced 4 to 5 cm. through the side of the face (where the fifth is injected). Twenty or thirty attacks may occur in a day, lasting from a few seconds to as many minutes or longer, the slightest jar or opening the mouth producing an attack. Meckel's ganglion, often the seat of the trouble, is situated in the spheno-maxillary fossa, is about the size of a pea, and is reached most easily through the nose for purposes of treatment. The pains or neuralgia may be present in the palate, throat, teeth, gums, or run from side of the face into the ear, neck, or orbit. Injections of carbolic alcohol give relief.

Deviations and Spurs of Septum of Nose: Frequently the cause of unilateral neuralgia and headaches are due to irritation of the mucous membrane of the nose from contact with consequent reflexive nervous irritation. This may manifest itself in hay-fever attacks or asthma, or in children of extreme nervous irritability. I have known cases with pain in eye running into the supraorbital area with congestion of the con-

junctiva of the eye, especially on accommodating, to be relieved by resection of a spur pressing into the mucous membrane of the opposite side of the nose, these cases having sought relief from various oculists, with consequent frequent changes of lenses without benefit.

Vagotonia Relating to the Nasal Sinuses: (Drawn freely from Hess and Eppinger, Fetterolf and Barke.) The fibres of the spinal nerves are divided into the animal and vegetative groups, the animal consisting of the sensory and motor fibers and supplying the organs of sensation and voluntary muscles; the vegetative, all the glands having ducts and all involuntary muscle tissue. The vegetative system consists of two divisions, the autonomic and sympathetic systems. The autonomic system arises from the brain and sacral region of the cord, the sympathetic from the cord alone. The fibres of the sympathetic have no names, but their supply is well known. The fibres of the autonomic, which arise from the brain, are contained in the third, seventh, ninth, tenth, and eleventh cranial nerves. Those from the cord are distributed through the sacral plexus. The action of these two systems is antagonistic, and they supply all glands with ducts and all involuntary muscles; therefore a normal functioning of the structures is dependent on the proper balance of the two systems. Irritation of the autonomic supply will cause hypersecretion and spasm; of the sympathetic,—hyposecretion and relaxation. These systems are controlled by the cerebro-spinal axis and the endocrinous glands. Adrenin stimulates the sympathetic system, and pilocarpin a part of the autonomic. Atropin acts as a sedative on the autonomic system. Where there is an excitation or irritability of the autonomic system pilocarpin injected in a small dose causes marked salivation, sweating, hyperistalsis of the intestine, etc. In suppurative conditions of the sinuses the toxins absorbed from the discharge may affect these systems as well as the animal system. In the animal system we get our palsies and sensory disturbances, as, for example, neuralgia of one of the branches of the fifth nerve. In the vegetative, we get spasm (of accommodation, for instance), or relaxation (dilatation of pupil) of the involuntary muscles and hyper (salivation, sweating) or hypo (dryness of skin, etc.) secretion of the glands supplied by the nerves already mentioned. In vagotonia the entrance to the

pharynx is anesthetic, according to Hess and Eppinger. A case is reported of abdominal pains, hypersecretion, nausea, and vomiting, and marked nervous irritability caused by supuration of the ethmoids, a typical case of vagotonia.

THROAT.

Faucial Tonsils: The tonsils are frequently the source of focal infection causing such diseases as rheumatism, nephritis, and arthritis (acute inflammatory, chronic, arthritis deformans). Pulling the anterior pillars forward may disclose inflammation when the tonsil appears normal. The lymphatic chain running from the epipharynx down behind the tonsils is often the seat of inflammation with consequent chronic sore throat. It is by this chain that infection is often carried to the ear. An enlarged tonsil does not always mean a diseased tonsil. The small, imbedded tonsil, which is the seat of frequent inflammatory changes, is the most dangerous tonsil. The best criterion for the removal of tonsils is frequent tonsillitis and I always advise against removal of the tonsils if they appear normal and if there have been no previous attacks, unless there is some disease of the system present which has followed a present attack of tonsillitis for which there is no accounting and which disease is known to follow tonsillitis. The typical infectious tonsil, which is always to be watched, is the small, submerged tonsil of a light purplish hue, cut up by adhesions and inflammatory bands, or the large oedematous, congested tonsil, with an irregular surface and hyperplastic bands of connective tissue dividing it, found in adults. The tonsil may contain cheesy material of a foul odor. Such tonsils cause malaise, and a feeling resembling what is called spring fever; also the stomach may be upset, with constipation present. In children, where there is a history free from attacks of tonsillitis or sore throat, the health of the children may be much benefited by removal, although no definite indication for such removal is present, a thorough physical examination having disclosed no ailment to account for the symptoms present. A tonsil which looks to be perfectly normal may contain a small fistulous tract leading to an abscessed cavity within the tonsil, which is found on incising the tonsil on removal. But, first of all, a clear dissection of the tonsil must be made in order to remove foci of infection in these cases, a small tag left behind causing

as much absorption as the whole tonsil sometimes.

Who has not seen the post operative adhesions of the tonsil bed from imperfect enucleation, with a collection of foul detritus, food particles decayed, absorption from which is as great a source of danger as from the tonsil itself? The percentage of valvular heart lesions met with in the adult, having their origin in the tonsils, is much greater than supposed, and recognition in time will prevent a permanent lesion.

The connection between the thyroid gland and the lymphoid ring is not understood, but it is known that the thyroid and the lingual tonsils spring from the same bronchial arch, and that in Graves' disease the lingual tonsils, as well as the faucial tonsils, should always be examined; for it is definitely determined that in diseased condition of either their removal often benefits or cures the thyroid gland disease. I will say that the sinuses should also always be examined in Graves' disease. The question is asked, does the thyroid enlarge to combat some infection? If this be true, then the explanation is clear why the disease is benefited by removal of diseased tonsils. Cases of meningitis and cerebral abscess have been traced to the tonsil. A history is often obtained of frequent attacks of tonsillitis with, finally, all the symptoms of an acute attack of nephritis, following the last attack, disappearing, to follow another attack of tonsillitis. Deafness is caused by diseased tonsils, the infection entering by contiguity or through the blood supply and lymphatics. Various nervous disorders occur, such as esophageal spasm, recurrent cough, spasm of glottis, neuralgia of tongue, and blepharospasm. I think that it is an accepted opinion that normal tonsils in children act as barriers to infection; but a tonsil once diseased is never of any service to the human mechanism, for the character of the tissue is changed. the epithelium of the crypts is replaced by a degenerated form, the original type never reappearing.

Lingual Tonsils: Are frequently the cause of chronic sore throat, hacking cough, with tickling in the throat, or tickling referred to side of the throat or neck.

Oesophagus: Pouches in the oesophagus cause food eructation, with sense of foreign body in food passage, pressure symptoms or fullness in that region, with sour stomach.

THE EAR.

As is well known, cerumen in the canal of the ear has been known to cause convulsions or semi-epileptic attacks in children; any irritation of the ear is just as liable to do this. A chronic cough through reflex irritation may have its origin in the ear from an eczematous condition or cerumen in the canal. After an attack of acute otitis media or during a chronic otitis media suppurativa on appearance of acute articular rheumatism, an infection of the lateral sinus must be looked for, the symptoms of the joint affection often overshadowing the ear condition and the ear being neglected to the danger of the patient, the patient succumbing to an intercurrent infectious endocarditis presumably, the sinus having been lost sight of. Thrombosis of the sinus is often overlooked because the symptoms in many cases are mild and the sinus escapes suspicion on the appearance of a pyogenic process in some other part of the body. Acute inflammatory joints are now thought to have their origin in metabolic changes and it is therefore possible to have such an inflammation from non-infectious sinus thrombosis where the symptoms are necessarily mild and easily escape detection by the family physician.

Vertigo often has its origin in the labyrinth, acute labyrinthitis causes marked vertigo, ataxia, nystagmus nausea, and vomiting. In the chronic cases, the vertigo is the prominent symptom, that and the deafness; the nystagmus usually can be elicited by having the patient turn the eyes toward the normal side, but it may be absent and the function of the labyrinth found to be impaired by turning, the caloric reaction, etc. The semi-circular canals may be destroyed and the hearing remain intact, although the hearing is generally involved at the same time as the semi-circular canals. Cerebellar abscess will cause vertigo and nystagmus with ataxia. Cysts of the dura (cerebellar-pontine angle) will do the same, giving us a picture of labyrinthitis. Here we have headaches complained of, as noises in the ear are complained of in labyrinthitis. In cerebellar abscess or tumor, the patient may fall unconscious on the street, these attacks occurring with greater frequency as time progresses. The cerebellum is the center for coördination of joint movement (stabilizer), disease of one lobe allowing overproduction of movement of the joint (controlled by the center involved) of that side toward the

side involved. Separate centers exist in the cerebellum for the wrist, elbow, ankle, etc., and the location of the cerebellar disease can be fairly definitely determined through the joints involved. This is determined by pointing tests and coincident caloric reaction, the cerebellar disease being distinguished from labyrinth disease by this method also.

In this paper I have mentioned only those subjects with few exceptions which are not immediately apparent and with which the general practitioner does not concern himself especially but which should ever be before him in order that he may give his patient every chance to recover from an affection, the cause of which it has been impossible for him to determine by a thorough and painstaking examination.

POST-INFLUENZAL ALOPECIA.

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IN view of the almost daily occurrence of cases of alopecia following influenza it would seem pertinent to sum up our knowledge of the subject. The general medical practitioner is just as likely to be called upon to treat this disorder as the dermatologist; in fact, in the smaller localities he is the only one to whom the patient can go. And the patient deserves due consideration and rational treatment. Baldness may not be serious from the point of view of life and death, but it is extremely serious to the young man or woman who is rapidly losing a good head of hair, and it must be remembered that during the recent epidemic, the incidence of disease was much more common among young people than among people past middle life.

In Massachusetts the height of the epidemic was reached in October. The first cases of post-influenzal alopecia which were seen at the Massachusetts General Hospital came for treatment on December 10, or about two months later. Between December 10, 1918, and January 18, 1919, 24 patients have been treated, all of them under 36 years of age, and all but three females. Just why there should be such a predominance of females is not clear. There are several possible explanations: (1) Males may