

The physical examination shows a girl, fairly well nourished, who does not appear acutely or severely ill. Some difficulty in breathing and talking, inspiratory efforts labored. Articulation of words good. When asleep has a noisy respiratory stridor. Eyes, ears, mouth and neck are normal; lungs—resonance good. Inspiration prolonged and accompanied at times by an inspiratory moan. Abdomen and extremities negative. Laryngeal examination—vocal cords appear reddened, and separate slightly on inspiration, but the rest of breathing is in close apposition. There is no voluntary motion of the muscles supplied by the recurrent laryngeal. Blood, urine, blood-pressure, Wassermann and x-ray all negative. Pulse 56, respiration 44.

Three days after admission we were compelled to isolate the patient, as her crowing while asleep kept the rest of the patients awake. We resorted to intubation at bedtime; this relieved the dispnea and stopped the crowing. Electricity, both galvanic and foradic, were administered, but without effect. On March 27, she was brought to the operating room, the larynx cocaineized and a Jackson pharyngoscope introduced and with a cordes punch the left vocal cord excised. For several days subsequently she was intubated and after the wound healed discharged from the hospital. The breathing was much easier, there was improvement in talking and the crowing was replaced with an ordinary snore. At the present time, there is a white band of scar tissue where the left cord excised, and, strange to say, the right cord and the band approximate.

New Test for Labyrinthine Disease. DR. EMERSON, of Boston. (By invitation.)

The best classification of specific disease of the labyrinth with which the writer is acquainted is that given by Kerrison in his late text-book. Here the clinical manifestations of syphilis of the labyrinth are divided into four classes. First, is a congenital type, seen in its most characteristic and easily recognized form in children exhibiting other stigmata of the disease. The aural lesion is usually bilateral, though one ear may be, and usually is, more seriously impaired than the other. Examination of the ears may reveal physically normal drum membranes, or the physical signs of middle-ear suppuration may render the syphilitic character of the labyrinthine affection less easy to recognize. The deafness is of distinctly labyrinth type and usually of advanced grade. Examination of the child shows in a certain percentage of cases the characteristic notched condition of the teeth (Hutchinson's). According to Fraser, this defect occurs in 50 per cent of cases. Interstitial keratitis is a defect occasionally found, as also are destructive lesions (defects) of the soft and hard palate. With or without these defects, the child not infrequently presents a stunted, prematurely old appearance which is more or less characteristic of these little unfortunates. The above abnormalities mark the most pronounced and, therefore, conspicuous form of congenital syphilis. There are many cases, however, in which the child does not exhibit such obvious stigmata, in which case a thorough physical examination, a careful analysis of the family history, and resort to the Wassermann test may be necessary to establish a correct diagnosis. The prognosis, as far as the auditory function is concerned, is hopeless.

The second variety of syphilitic labyrinthitis is that which occasionally complicates the acquired form of the disease in adults. It develops most frequently in the late secondary or in the tertiary stage, rarely in the primary stage of the disease. It is characterized clinically by very sudden and usually very extreme deafness in one or both ears. That the vestibular apparatus is also involved in a very large percentage of cases is shown by the frequent evidences of disturbed equilibrium, e. g., nystagmus, vertigo, static ataxia, etc. When the lesion is unilateral and completely annuls the function of the affected vestibular mechanism, the onset is necessarily characterized by all the usual phenomena of vestibular irritation or excitation. When both labyrinths are simultaneously paralyzed, the patient exhibits the type of vertigo and ataxia characteristic of vestibular paralysis. The writer has recorded the history of such a case in which the patient was absolutely deaf in both ears and both vestibular mechanisms were absolutely non-irritable by either rotation or the caloric test.

The clinical features of these cases usually leave in doubt the question as to whether the membranous labyrinth or the eighth nerve is the structure primarily attacked. Involvement of other cranial nerves and simultaneous and equal disturbances of both cochlear and vestibular functions would point to the nerve as the structure primarily attacked; while the escape of other cranial nerves plus unequal disturbances of the two branches of the eighth nerve would point rather strongly to a direct invasion of the labyrinth.

Aside from the very characteristic onset of the attack in a person whose drum membrane may show no morbid changes, there are usually other evidences of the disease in cuticular eruptions, mucous patches, etc., which, in conjunction with the history of an initial lesion, may leave no doubt as to the syphilitic origin of the labyrinthine disorder.

Though necessarily causing great anxiety, the prognosis is more favorable than any other form of syphilitic labyrinthitis.

Another clinical variety of the disease, the pathologic basis of which is not always so easily determined, is found in adults who have suffered from chronic constitutional syphilis over a period of years. The drum membranes may or may not show evidences of tympanic disease, which, if present, may represent an intercurrent and pathological independent lesion. Such a patient frequently gives a history of occasional attacks of vertigo of more or less pronounced type, or such attacks, having belonged to an earlier stage of the disease, may have ceased to annoy him. The diagnosis depends chiefly upon the labyrinthine character of the deafness, i. e., diminished bone-conduction, negative Rinné, loss of hearing for the highest musical tone, plus constitutional evidences of the disease. Very frequently the pharynx and nasal cavities show the cicatrices and perforations representing the typical lesions of an earlier stage.

Naturally the history of such a patient may be expected to furnish data of considerable diagnostic significance. To other manifestations of the disease, the Wassermann test contributes the strongest corroborative evidence.

The lesion from which it is in some cases most difficult to differentiate chronic syphilitic labyrinthitis is that form of otosclerosis which involves

not only the labyrinthine capsule but also the membranous cochlea. Between these two conditions a positive differentiation is not in all cases possible. The history of a very sudden development of the deafness, coming on in the late secondary or in the tertiary stage of acquired syphilis, would go far toward establishing the syphilitic character of the labyrinthine lesion.

The treatment in these cases is the treatment of chronic syphilis. The prognosis, so far as any marked improvement of hearing is concerned, is unfavorable.

The fourth clinical type may be dealt with briefly. It is found in patients who are victims of constitutional syphilis of long standing, and whose ears exhibit the physical characteristics of a middle-ear suppuration (usually of offensive type) and the functional reactions of labyrinthine disease. The syphilitic nature of the labyrinthine lesion is usually an hypothesis not susceptible of definite proof. It is, however, an hypothesis of very practical importance, for the reason that improvement, either functional or of the concomitant suppurative lesion of the middle ear, is not likely to result from any plan of local treatment not reinforced by active measures to eradicate the constitutional disease.

Treatment: There is no manifestation of syphilis which calls more urgently for vigorous efforts to eradicate the systematic poison than syphilitic labyrinthitis. The question of treatment resolves itself into a comparison of the few drugs of known value and the best methods of administering them. The more important phases of this subject are discussed in the chapter devoted to the use of salvarsan in aural therapy.

This classification coincides with the previous experience of the writer. The use of the Wassermann, Nogouchi and provocative tests, however, have shown us that many more chronic morbid processes involving bone and nerve tissue, have syphilis as the underlying cause, than we have supposed. While in the past we have in some cases of labyrinthitis suspected that specific disease was the underlying cause, yet these cases were, for the most part, accompanied by pronounced and sudden deafness. A careful history usually elicited the fact that vertigo, nystagmus, rheumatism, or characteristic headaches—either one or all, had at some time existed. This suspicion of venereal infection was often further confirmed by physical examination.

It is to the laboratory that we are indebted for the means to determine definitely that many cases of specific labyrinthitis may develop slowly without the stormy clinical phenomena usually associated with our previous conception of involvement of the inner ear from lues and presumably vestibular irritation. It is the purpose of this short paper to submit a hearing test which the writer has found useful as a diagnostic guide to specific labyrinthitis. At the time of the study of ten cases of labyrinthitis (of which only one will be given as typical) the writer had never seen the following statements advanced as of significance in determining this specific origin.

Given a bilateral affection with marked lowering of the upper notes, a positive Rinné and normal low limits for the Dench fork, and the cause is usually syphilis. Eight cases out of ten so studied showed the Wassermann test either double or triple positive. The upper limits, as shown

by the whispered voice, were reduced to 1.25, or 1.35, by the low voice. These cases would confirm in this clinical manifestation to Kerrison's third classification. He, however, depends for his diagnosis upon the diminished bone-conduction, negative Rinné, loss of hearing for the highest musical tone, plus constitutional evidences of that disease. In the writer's case the air and bone-conductions were both lowered, but their normal ration remained the same. The Rinné was positive in every case. On looking up the literature, the writer ran across a note in which Urban makes the same statement. This, with a line in Politzer quoting Rohrer to the same effect, was all the reference obtainable. Politzer lays stress, however, upon a previous history of vertigo, nystagmus, headaches, or rheumatism, which was not obtainable in these cases, the history being one of slowly progressive loss of hearing with only the hearing test to suggest a specific origin.

A typical case is the following: James M., 31 years, widower, two children, venereal disease nineteen years. Under treatment two years on two different occasions. The specific history was denied at the time, but obtained later. History of deafness with tinnitus twelve months. No history of headaches or rheumatism. On examination, the septum showed marked deviation to the right. Large posterior ends of the turbinates both inferior and middle. There was also an active epipharyngitis. The tympanic membranes were indrawn and thickened and the luster diminished. The hearing test was as follows: Right ear 1/35 V.; left ear 2/25 V. Right ear, air conduction 25", bone condition 15"; left ear air conduction, 40", bone conduction 15". Weber to the right. Right ear, D. 64; left ear D. 64.

There was sufficient cause in the nose and throat to account for the trouble in the middle ear, but here the loss was markedly in the highest musical tone. The duration was only a year; the affection bilateral; the Rinne positive and the lowest notes unchanged. A Wassermann was triple positive.

Vaccines in Nose, Throat and Sinus Infections. DR. G. H. SIEMAN (by invitation).

The therapeutic application of bacterial vaccines in nose, throat and sinus infections involves the same fundamental principles which obtain in vaccine therapy as applied to localized infections in other parts of the body. It is now well known that acquired resistance to infecting organisms is the most important factor in avoiding and overcoming disease, and from our present knowledge concerning infections it is also apparent that these immunizing activities are essentially developed by the tissue actively involved in the process of infection.

When we have localized infection usually but a comparatively small portion of the body is involved. This is particularly the case in nose, throat and sinus infections. Not much tissue being involved in these cases, sufficient immunizing substances to bring about adequate constitutional resistance—thus properly backing up the involved tissue cells in their fight to overcome the infection—is slowly developed. The natural result is that in many cases these infections become chronic.

Let us consider the nasal mucous membrane one thirty-second of an inch thick. This would require thirty-two square inches to make one inch