pharyngeal mucosa becomes swollen and injected, the fever is high, the constitutional symptoms are severe, and the inflammation passes on rapidly to suppuration. The symptoms are very intense. The swelling of the pharyngeal tissues early reaches such a grade as to impede respiration. Very similar symptoms may be produced by the lodgment of foreign bodies in the pharynx.

(6) **Retro-pharyngeal Abscess.**—This may occur as a sequel to one of the fevers, but more commonly results from caries of the cervical vertebræ. It is accompanied with pain in swallowing, sometimes with cough, dyspnœa, and alterations in the character of the voice.

The diagnosis is readily made, as the projecting tumor can be seen, and felt with the finger on the posterior wall of the pharynx.

(7) **Angina Ludovici** (*Ludwig's Angina; Cellulitis of the Neck*).—In medical practice this is seen as a secondary inflammation in the specific fevers, particularly diphtheria and scarlet fever. It may, however, occur idiopathically or result from trauma. It is probably always a streptococcus infection which spreads rapidly from the glands. The swelling at first is most marked in the submaxillary region of one side. The symptoms are, as a rule, intense, and, unless early and thorough surgical measures are employed, there is great risk of systemic infection.

IV. DISEASES OF THE TONSILS.

Apart from the affection of these glands already described in connection with diphtheria, scarlet fever, and syphilis, an acute and a chronic tonsillitis may be recognized.

ACUTE TONSILLITIS.

(1) **Follicular or Lacunar Tonsillitis.**—For practical purposes, under this name may be described the various forms which have been called catarrhal, erythematous, ulcero-membranous, and herpetic.

Etiology.—The disease is met with most frequently in young persons, but in children under ten it is less common than the chronic form. It is rare in infants. Sex has no special influence. Exposure to wet and cold, and bad hygienic surroundings appear to have a direct etiological connection with the disease. In so many instances defective drainage has been found associated with outbreaks of follicular tonsillitis that sewer-gas is regarded as a common exciting cause. One attack renders a patient more liable to subsequent infection. Special stress is laid by some writers upon the coexistence of tonsillitis with rheumatism. Cheadle describes it as one of the phases of rheumatism in childhood with which articular attacks may alternate. I cannot say that, in my experience, the connection

between the two affections has been very striking, except in one point, viz., that an attack of acute rheumatism is not infrequently preceded by inflammation of the tonsils. The existence of pains in the limbs is no evidence of the connection of the affection with rheumatism. A disease so common and wide-spread as acute tonsillitis necessarily attacks many persons in whose families rheumatism prevails or who may themselves have had acute attacks.

Mackenzie gives a table showing that in four successive years more cases occurred in September than in any other month; in October nearly as many; with July, August, and November next. In this country it seems more prevalent in the spring. So many cases develop within a short time that the disease may be almost epidemic. It spreads through a family in such a way that it must be regarded as contagious.

An old notion prevails that there is a definite relation between the tonsils and the testes and ovaries. F. J. Shepherd has called attention to the circumstance that acute tonsillitis is a very common affection in newly married persons. That view is probably correct which regards tonsillitis as a local disease with severe constitutional manifestations, although the fever is often high in proportion to the local symptoms. The commonest organism found in tonsillitis is a streptococcus. Staphylococci also occur. In some cases organisms closely resembling the *bacillus diphtheriæ* of Loeffler have been found, but they do not seem to possess the same malignancy.

Morbid Anatomy.—The lacunæ of the tonsils become filled with exudation products, which form cheesy-looking masses, projecting from the orifices of the crypts. Not infrequently the exudations of contiguous lacunæ coalesce. The intervening mucosa is usually swollen, deep-red in color, and may present herpetic vesicles or, in some instances, even membranous exudation, in which case it may be difficult to distinguish the condition from diphtheria. The creamy contents of the crypt are made up of micrococci and epithelial *débris*.

Symptoms.—Chilly feelings, or even a definite chill, and aching pains in the back and limbs may precede the onset. The fever rises rapidly, and in the case of a young child may reach 105° on the evening of the first day. The patient complains of soreness of the throat and difficulty in swallowing. On examination, the tonsils are seen to be swollen and the crypts present the characteristic creamy exudate. The tongue is furred, the breath is heavy and foul, and the urine is highly colored and loaded with urates. In children the respirations are usually very hurried, and the pulse is greatly increased in rapidity. Swallowing is painful, and the voice often becomes nasal. Slight swelling of the cervical glands is present. In severe cases the symptoms increase and the tonsils become still more swollen. The inflammation gradually subsides, and, as a rule, within a week the fever departs and the local symptoms greatly improve. The tonsils, however, remain somewhat swollen. The prostration and

constitutional disturbance are often out of proportion to the intensity of the local disease.

There are complications which occasionally excite uneasiness. Febrile albuminuria is not uncommon, as Haig-Brown has pointed out. Cases of endocarditis or pericarditis have been found. It is to be borne in mind that in children an apex systolic murmur is by no means uncommon at the height of any fever. The disease may extend to the middle ear. The development of paralytic symptoms, local or general, after an attack which has been regarded as follicular tonsillitis indicates an error in diagnosis.

Diagnosis.—It may be difficult to distinguish follicular tonsillitis from diphtheria. It would seem, indeed, as if there were intermediate forms between the mildest lacunar and the severer pseudo-membranous tonsillitis. In the follicular form the individual yellowish-gray masses, separated by the reddish tonsillar tissue, are very characteristic; whereas in diphtheria the membrane is of ashy gray, and uniform, not patchy. A point of the greatest importance in diphtheria is that the membrane is not limited to the tonsils, but creeps up the pillars of the fauces or appears on the uvula. The diphtheritic membrane when removed leaves a bleeding, eroded surface; whereas the exudation of lacunar tonsillitis is easily separated, and there is no erosion beneath it. In all doubtful cases cultures should, if possible, be made to determine the presence of Loeffler's bacillus.

(2) **Suppurative Tonsillitis.**

Etiology.—This arises under conditions very similar to those mentioned in the lacunar form. It may follow exposure to cold or wet, and is particularly liable to recur. It is most common in adolescence. The inflammation is here more deeply seated. It involves the stroma, and tends to go on to suppuration.

Symptoms.—The constitutional disturbance is very great. The temperature rises to 104° or 105°, and the pulse ranges from 110 to 130. Nocturnal delirium is not uncommon. The prostration may be extreme. There is no local disease of similar extent which so rapidly exhausts the strength of a patient. Soreness and dryness of the throat, with pain in swallowing, are the symptoms of which the patient first complains. One or both tonsils may be involved. They are enlarged, firm to the touch, dusky red and œdematous, and the contiguous parts are also much swollen. The swelling of the glands may be so great that they meet in the middle line, or one tonsil may even push the uvula aside and almost touch the other gland. The salivary and buccal secretions are increased. The glands of the neck enlarge, the lower jaw is fixed, and the patient is unable to open his mouth. In from two to four days the enlarged gland becomes softer, and fluctuation can be distinctly felt by placing one finger on the tonsil and the other at the angle of the jaw. The abscess usually points toward the mouth, but it may point toward the pharynx. It may burst spontaneously, affording instant and great relief. Suffocation has

followed the rupture of a large abscess and the entrance of the pus into the larynx. When the suppuration is peritonsillar and extensive, the internal carotid artery may be opened; but these are, fortunately, very rare accidents.

Treatment.—In the follicular form aconite may be given in full doses. It acts very beneficially in children. The salicylates, given freely at the outset, are regarded by some as specific, but I have seen no evidence of such prompt and decisive action. At night, a full dose of Dover's powder may be given. The use of guaiacum, in the form of two-grain lozenges, is warmly recommended. Iron and quinine should be reserved until the fever has subsided. A pad of spongio-piline or thick flannel dipped in ice-cold water may be applied around the neck and covered with oiled silk. More convenient still is a small ice-bag. Locally the tonsils may be treated with the dry sodium bicarbonate. The moistened finger-tip is dipped into the soda, which is then rubbed gently on the gland and repeated every hour. Astringent preparations, such as iron and glycerine, alum, zinc, and nitrate of silver, may be tried. To cleanse and disinfect the throat, solutions of borax or thymol in glycerine and water may be used.

In suppurative tonsillitis hot applications in the form of poultices and fomentations are more comfortable and better than the ice-bag. The gland should be felt—it cannot always be seen—from time to time, and should be opened when fluctuation is distinct. The progress of the disease may be shortened and the patient spared several days of great suffering if the gland is scarified early. The curved bistoury, guarded nearly to the point with plaster or cotton, is the most satisfactory instrument. The incision should be made from above downward, parallel with the anterior pillar. There are cases in which, before suppuration takes place, the parenchymatous swelling is so great that the patient is threatened with suffocation. In such instances the tonsil must either be excised or tracheotomy or, possibly, intubation performed. Delavan refers to two cases in which he states that tracheotomy would, under these circumstances, have saved life. Patients with this affection require a nourishing liquid diet, and during convalescence iron in full doses.

CHRONIC TONSILLITIS.

(*Chronic Naso-pharyngeal Obstruction; Mouth-Breathing; Aprosexia.*)

Under this heading will be considered also hypertrophy of the adenoid tissue in the vault of the pharynx, sometimes known as the pharyngeal tonsil, as the affection usually involves both the tonsils proper and this tissue, and the symptoms are not to be differentiated.

Chronic enlargement of the tonsillar tissues is an affection of great importance, and may influence in an extraordinary way the mental and bodily development of children.