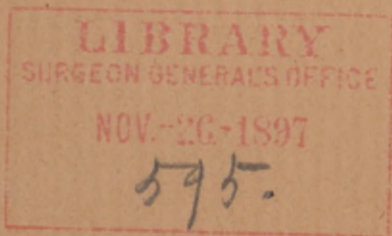


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Tonsils, Pharynx and Larynx.



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**TUBERCULOSIS OF THE TONSILS,
PHARYNX AND LARYNX.**

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The zone of lymphoid tissue encircling the oro-pharynx and in part forming the lingual, faucial and pharyngeal tonsils, is gradually being recognized as a point of infection with the tubercle bacilli. The disease in this locality is usually secondary to pulmonary infection, or is a part of general miliary tuberculosis. Rarely is it primary; but, within the last few years, cases have been seen involving the faucial or pharyngeal tonsils, although not, to my knowledge, the lingual tonsil. The etiology does not differ from that of the pulmonary form as regards the primary condition, but when secondarily implicated, the bacilli gain access to these tissues either through the lymphatics, blood vessels or sputum.

Tubercular ulceration of the lingual tonsil is quite common in advanced cases, especially if the larynx is the seat of much change. Primary involvement of the faucial tonsils occurs very rarely and may resemble simple hypertrophy. The diagnosis can only be made by a microscopic

examination of the removed tonsil, or the rapid spreading of the disease after excision. Secondary involvement is quite common either as miliary tubercles, hypertrophy or ulceration. Kruckmann found, post-mortem, the tonsils affected in twelve of twenty-five tuberculous patients; in two the lesions were primary. In every case in which the tonsils were involved, there was enlargement of the cervical glands, and in sixty per cent. of pulmonary tuberculosis, the tonsils were inflamed, probably from septic absorption of the infected sputa. In some cases the affection of the tonsil is limited to the side on which the lung is involved, the cervical glands being enlarged on the same side. Gross lesions may not be apparent during life, and the organ may be soft, dry and firm, without any macroscopic evidence of tuberculosis. Ulceration may be present, either of the crypts, going on to cheesy changes and the formation of cavities, or may be superficial, the ulcer having an uneven, ovoid, pale, granulating surface, which is shallow and covered with a yellowish-gray mucus. The edges are sharply cut, but there is no undermining nor induration.

Primary tuberculosis of the pharyngeal, or Luschka's tonsil, must be extremely rare, and I would hesitate very

much to make the diagnosis. A few cases have lately been reported where the tonsil was removed, and removal followed by rapid miliary tuberculosis, ending fatally in a few weeks. The microscopic examination of the removed adenoid tissue showed many tubercle bacilli and giant cells. Treatment, being identical when the disease involves the pharynx and larynx, will be discussed further on. In the primary form, localized in the faucial tonsils, however, the diseased area, if small, should be entirely removed, either with the galvano-cautery, or knife.

General miliary tuberculosis, with pharyngeal lesions, presents nothing of special interest. As a rare condition it may be primary, resembling at first a simple acute pharyngitis; the inflammation is severe, the uvula becomes club-shaped and semi-translucent, the cervical glands swell in three or four days from the onset, and proliferation of tissue, with local blood stasis, results. If the systemic disturbance is severe, the symptoms of general miliary tuberculosis rapidly follow, and death ensues in from three to five weeks. Should the disease be confined to the pharynx, tubercles will shortly be seen, gray in color, finally becoming yellow, and the walls will have a worm-eaten appearance. There may be a fringe of small

excrecences along the posterior pillar, resembling adenoid tissue. This form occurs most frequently in children, and the right side of the pharynx seems to be the first to become involved, or, if both sides are affected, the right is usually worse, probably because of unequal distribution of the lymphatics. In addition to the local symptoms mentioned, there are small ecchymoses distributed over the soft palate and posterior pharyngeal wall, with intense pain and difficulty of swallowing, and no constitutional symptoms until the disease becomes well advanced.

Secondary involvement of the pharynx occurs in nearly one-quarter of all cases dying of pulmonary and laryngeal tuberculosis. Dmochowski, in an examination of sixty-four subjects dead of tuberculosis, found the naso-pharynx involved twenty-one times. The symptoms are those of a chronic ulcerative pharyngitis with intense pain on deglutition, and constitutional symptoms of tuberculosis of other parts of the system. On examination of the involved area, superficial, lenticular-shaped ulcers are seen, covered with a whitish-gray exudate, with small nodules and granulation tissue in their immediate neighborhood. The ulcers are indolent in character, and the surrounding mucous membrane is anemic, with little thicken-

ing, although the pillars of the fauces may be infiltrated with yellowish nodules.

Tuberculosis of the larynx may be divided into two general classes, primary and secondary. The primary form is comparatively rare, while the secondary infection is quite common, occurring in about thirty per cent. of all long standing pulmonary cases. The primary form usually follows an attack of simple acute laryngitis from exposure to damp and cold. The morbid changes are similar to those seen when the pharynx is primarily involved, and need no further description. The disease lasts but a few weeks, being rapidly followed by involvement of the pulmonary tissue. The larynx becomes infected during the course of pulmonary tuberculosis through the lymphatic and blood channels, being, therefore, a deep infection, and, according to Solly, the minority only are infected by the sputum. When there is secondary involvement, the affection may be either acute or chronic. In the acute form, the mucous membrane is congested, there is infiltration of the ary-epiglottic folds and epiglottis, while other portions show little change. This form usually begins after softening has taken place in the lungs, the patient, with that hope peculiar to tuberculosis, considering the laryngeal affection as a simple

"cold," delays local treatment until the process becomes chronic, and deep infiltration and ulceration result.

Examination of a case of chronic laryngeal tuberculosis will show the entire interior to be anemic, with here and there, especially over points where there is pressure, a small area of congestion, with fugitive blushing. The arytenoids are grayish-pink in color and swollen, presenting the characteristic club shape, this clubbing being one of the early signs of tubercular involvement. The inter-arytenoid space will be obliterated from infiltration, sometimes forming a small tumor resembling a papilloma, whose base is the seat of a small ulcer. These ulcers are irregularly ovoid in shape, usually single, but apt to coalesce, forming irregular patches, and, becoming infected with pus microbes, discharge a muco-purulent secretion. The normal lustre of the vocal cords is lost, and they have a dull aspect, becoming ragged from ulceration, or may be infiltrated, preventing proper approximation. The epiglottis is frequently involved, at first anemic with some thickening, then ulcerated and finally destroyed or rendered useless in its function as an obturator to the larynx. The ventricular bands may be involved, at first thickened, and then the seat of small, shallow, white

ulcers. The mucous membrane in part is covered with cheesy looking patches, the remains of tubercles which have undergone degeneration. The cartilages next become involved, usually the result of a coincident septic process, and necrosis takes place, the dead tissues being coughed up in part, or even an entire cartilage, as the arytenoid, may be thrown off.

Very rarely a small sessile tumor may form in the inter-arytenoid space, fibrous in character and containing tubercle bacilli and giant cells, no other laryngeal changes being observed. The larynx may be involved and present none of the morbid alterations already mentioned. Instead there will be a slight thickening of the mucous membrane, especially of the arytenoid region, with a thick milky secretion. This may continue without other changes for a long time even when the lungs are extensively implicated. Or the patient complains of laryngeal paresthesia vague in character, and on examination we find slight adductor paralysis, but just as often this will be absent.

Again the tubercular invasion will manifest itself as an ordinary catarrhal laryngitis, resisting treatment until finally the characteristic signs make their appearance. In this connection we often find with pulmonary tuberculosis, an associated laryn-

gitis similar to that just mentioned, existing during the entire course of the pulmonary trouble, but not progressing to actual infiltration or destruction of tissue. As a general rule this condition is non-specific, but it may act as a predisposing cause by diminishing the resistance of the laryngeal tissues, and finally a laryngitis may set up from septic infection non-tubercular in character.

Associated with the well known symptoms of tuberculosis of the lungs, we have, when the larynx becomes involved and varying in degree with amount of destruction present, cough, sensation of a foreign body, dysphonia, dyspnea and dysphagia. Interference with phonation depends upon the location of the inter-laryngeal lesions, extensive ulceration may be present with little alteration in the voice, while a small area of infiltration or a minute ulceration of the vocal cords will produce almost complete loss of voice. The most distressing symptom is dysphagia, in some cases being so intense when even the saliva is swallowed that the patient prefers slow starvation rather than undergo the fearful agony occasioned by eating or drinking. The pain is more intense from swallowing liquids than from solid or semi-solid foods. Very often the intensity of the dysphagia is out

of all proportion to the macroscopic lesions either of the larynx or epiglottis. Examination of the peripheral nerve endings in these cases has disclosed a peripheral neuritis, with degeneration followed by a proliferation of the nerve filaments. Unless we accept the influence of the vagus it will be very difficult, and to my mind impossible, to satisfactorily account for all the phenomena presented when tuberculosis invades this region.

When the larynx becomes implicated in pulmonary tuberculosis the diagnosis is very simple, especially if the typical ulcers and areas of infiltration are present. The disease occurs between the ages of twenty and forty years, but grave changes may be seen at any age. It is only in the primary form and in the premonitory stages of secondary involvement that the diagnosis becomes at all difficult. When we have what is apparently an ordinary simple laryngitis with but one side of the organ affected, or the inflammatory changes most marked on one side, with vague pains or irregular sensations, referred to the laryngeal region but not definitely located, we should be suspicious of tuberculosis.

Syphilis is very apt to manifest itself in the larynx, and at times simulates tubercular infection. It seems as if the larynx was the common meeting ground for

tuberculosis and syphilis, not rarely co-existing, and presenting two distinct affections located in one organ, thus rendering the question of diagnosis most difficult of solution. Syphilis is much more rapid in its course and more active; instead of anemia we see an acute or sub-acute inflammation with gummatous tissue. If syphilis be present the therapeutic test with potassium iodid will aid in clearing up the difficulty. The presence of a tumor in the inter-arytenoid space is very suggestive of tuberculosis, as it is extremely rare to find any other kind of growth located there. Carcinoma also may exist coincident with tuberculosis, having some features in common.

The prognosis of tubercular infection of the upper respiratory tract is very unfavorable. Acute cases last but a few weeks, and secondary infection runs its course in from one to three years. In the light of our present knowledge much may be done to alleviate the suffering of the patient and render him comparatively comfortable. Apparently hopeless cases have been cured, and, rarely, the ulcers have undergone spontaneous resolution, becoming converted into fibrous tissue and relieving the patient of any immediate danger to life.

The outlook for the case, again, is in-

fluenced by the location of the disease. The larynx and pharynx are readily accessible to treatment, yet, as a general rule, the higher in the respiratory tract the tubercular infection is, the graver is the prognosis. Although the case may apparently be cured there is danger of relapse after an interval even of several years.

The treatment may conveniently be classed as local and constitutional. The latter will not here be discussed, as it differs in no respects from the general treatment of pulmonary tuberculosis. In the cases where catarrh is a prominent factor sprays are often efficient, either of steam or of such drugs as belladonna, hyoscyamus, and the various preparations of opium. Menthol and guaiacol are of value used in from fifteen to forty per cent. solutions, either in spray form or applied directly to the affected parts. The latter drug, from its anesthetic effect, may be used in place of cocain. When dysphagia is severe, cocain will have to be exhibited, especially before nourishment is taken. It can be used as a spray or in solution, painted over the most sensitive parts. Iodin tri-chlorid in one-fourth to one per cent. solutions has been recommended in the catarrhal forms before ulceration be-

gins, and in a few cases has given good results.

Insufflation of various powders are useful when ulceration occurs. Iodoform is used probably as much as any, or iodol may take its place, not possessing the unpleasant odor. Protonuclein has seemed of value. After its use the ulcers become cleaner, a sedative effect is observed and the irritating laryngeal cough apparently diminishes. Tannic acid and morphia are used, especially in combination with iodoform, the three drugs forming a very happy combination and giving great temporary relief. When applying powders to the pharynx, and especially to the larynx, the mucous secretions should first be removed, as they prevent the drugs reaching the diseased parts.

The ulcers may be treated by injecting them with minute quantities of potassium cantharidinate or of creosote. Or they may be curetted and various medicaments, such as lactic acid or formic aldehyd, rubbed over the surfaces. The latter drug is suggested by Cohen, and is used in from one-half of one per cent. to four per cent. solutions. Probably the most efficient local treatment at our command is lactic acid in from twenty to eighty per cent. solutions. The parts are first cocainized, as the applications are extremely painful, then with

the curet all diseased material over a circumscribed area is removed, the lactic acid in weak solution is rubbed into the tissues, and is followed by dusting with a powder, such as protonuclein or iodoform. This procedure is repeated at intervals, increasing the strength of the acid, until cicatrization occurs. Formic aldehyd, creosote and a multitude of other drugs may be used in the same manner, but lactic acid has given the best results.

Ice applied over the larynx and around the angles of the jaw when the pharynx is involved, will reduce temperature and allay cough. Electrolysis has been tried to absorb tissue and aid in healing ulceration, but is of practically no value. In the acute cases, where there is excessive infiltration, and in chronic cases with much destruction of tissue, and contraction with grave dyspnea, tracheotomy may be indicated as a temporary measure.

Laryngo-fissure and laryngeal excision have been done in a few cases. The former is indicated when the diseased areas cannot be reached through the superior opening of the larynx. All diseased tissues, so far as possible, are removed. Excision is practised when the disease is localized to the larynx, the entire organ or a larger part of it being removed. It should be remembered that as the result of operation

on the larynx, even so much as light curetment, the disease may be started afresh, the entire system become involved rapidly, ending in death, the result of acute miliary tuberculosis.

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