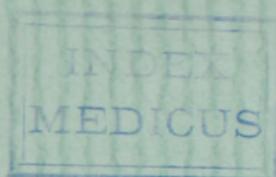


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FOLLICULAR AMYGDALITIS



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A. JACOBI, M.D.

President of the New York Academy of Medicine



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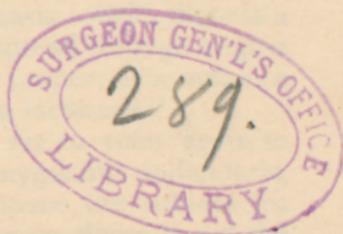
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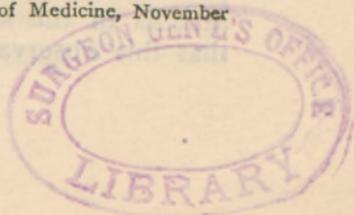
FOLLICULAR AMYGDALITIS.¹

IN Nos. 17 and 18, 1886, of the *Berlin Clinical Weekly*, Professor B. Fraenkel published a paper, read before the Berlin Medical Society, on "Angina Lacunaris and Diphtheritica." In that essay he quoted several times a short paper of mine, which appeared in the *New York Medical Journal*,² of September 24, 1884, under the heading "Diphtheria Spread by Adults." Professor Fraenkel expresses himself as follows: "A. Jacobi asserts that diphtheria is spread by adults suffering from angina lacunaris. As this affection is a very frequent one, and as the patients suffering from it do not stay at home, Jacobi assumes that this affection, while not dangerous to the patients themselves, becomes an urgent danger to the community." Professor Fraenkel then adds: "I do not go so far." Still, he does go so far, for he reports the case of a girl aged twelve, who, while herself suffering from "angina lacunaris," infected her whole family with diphtheria. He then says: "Such cases, however, are so rare that I cannot agree with Jacobi in this, that the spreading of diphtheria is attributable to angina lacunaris. Still, there is a possibility that diphtheria may be spread through angina lacunaris, and, therefore, I deem it proper, as a measure of caution, to isolate cases of angina lacunaris."

These quotations have induced me to refer again to the subject of angina lacunaris, amygdalitis follicularis, "tonsillitis follicularis," and to propose the subject for your consideration. My reason for so doing is not the fact that my opinions and statements have been quoted

¹ Read before the Section of Theory and Practice of Medicine, November 16, 1886.

² Not *THE MEDICAL RECORD*, as quoted by mistake.



rather incompletely or erroneously, but because it still appears necessary to fix the relation of follicular inflammation of the tonsils to tonsillar and general diphtheria beyond a doubt. I have tried to do so repeatedly, but have not been satisfied with the effect of my previous statements and deductions. What I desire to emphasize at once, however, is that I do not—as I am quoted—assert that diphtheria is spread by adults suffering from follicular amygdalitis. On the contrary, what I did say and do say is this, that what, in an individual case, was called by that name and then gave rise to diphtheria, was diphtheria, and, therefore, produced diphtheria. Nor do I say that every case of follicular affection of the tonsils is diphtheria, and that diphtheria in general is spread by follicular amygdalitis in general, but I claim that the name of follicular or lacunar amygdalitis is but a subterfuge for the lack of a correct or complete diagnosis. There are cases of follicular amygdalitis of a catarrhal, purulent, fibrinous, and diphtheritic character, and its name ought to be dropped from our nomenclature, because of its giving rise to mistakes, unless it be complemented with a descriptive adjective.

Professor Fraenkel makes the statement that he has changed his opinion on the relations between follicular amygdalitis and diphtheria since the year 1881. In that year (*Berlin. klin. W.*, No. 47) he published a paper in which he denied the possibility of the former ever being an infectious disease. His denial was based on the fact that an attack of follicular amygdalitis did not protect the patient, but, on the contrary, created a predisposition to relapses. He forgot that a first attack of acute rheumatism, or of erysipelas creates rather than annihilates a predisposition to relapses, and still both are counted among the infectious maladies. He says he forgot that circumstance. But he has forgotten more. He forgets that I have claimed, and do claim, that a previous attack of diphtheria predisposes to future attacks of the same kind, and, what is more important, that this observation and statement have been found to

be correct by many other authors since. In regard to his changed views he refers to Friedreich as the first to count certain cases of lacunar amygdalitis among the infectious diseases. This great author bases his position on the following observations: ¹ Before there are any local symptoms there is *sometimes* a chill. The fever is *often* found to be higher than the local affection appears to justify. Further, the fever is *apt* to exhibit a cyclical curve. *Sometimes* Friedreich noticed a swelling of the spleen, and prostration and debility were *often* too marked for a merely local process.

I have known very long that certain diseases of the throat occurring during the prevalence of an epidemic of diphtheria—though they were not claimed as genuine diphtheria—belong to or are intimately related with this malady, and are, or can be, of an infectious character. Allow me to prove this assertion by quoting a few lines from my first papers on diphtheria which appeared in the *American Medical Times* of August 11 and 18, 1860, under the title "On Diphtheria and Diphtheritic Affections." There I say: "The register of the (German) dispensary shows, for January, 1860, the number of eighteen cases of membranous diphtheritis, and nine cases of affections considered by us to belong to the verge of, and caused by, the epidemic. While the records of our private patients, during the first week of January, gives out of the whole number of seventy-seven, sixteen cases of membranous diphtheria, and thirteen of the second class. This distinction has always been kept up by us. The diagnosis of diphtheria was never considered to be unimpeachable except in such cases as offered well-developed membrane. Among the second class of such diseases as were considered by us to be influenced or brought on by the epidemic genius, we have counted and put down stomatitis, pharyngitis, diphtheritic pharyngitis, cervical adenitis, and diphtheritic fever. Of the 2,577 patients of the children's class, during the last nineteen months, there were 200 cases of diphtheria and 185 of kindred diseases."

¹ Volkman's series of clinical lectures, No. 75.

Permit me to make one more quotation from the same paper: "There is a form of the diphtheritic process in which very little or no fever is perceived, and little or no glandular swelling will take place. The congestion and swelling of the pharynx are not very marked, and the first remarkable appearance is noticed on the follicles of the mucous membrane of the pharynx. They are visible as whitish-gray spots of a twentieth or a twelfth of an inch in diameter. Not long after, however, membranes are formed, and the whole process will run its course in sometimes three or four days, without any great inconvenience to the patient. But there are cases in which the symptoms will increase in severity, fever will set in, and submaxillary and cervical adenitis take place. Such cases have been set apart by some authors as 'mild membranous angina,' 'herpes of the throat,' or 'herpetic angina.' We do not see anything else in these cases but mild diphtheria, mostly without pronounced general symptoms. We have not found any more reason to distinguish this form, of which, however, we have not seen more than a dozen cases, from diphtheria, than we should think of excluding a case of scarlet fever, without fever and with less than the usual eruption, from the record of cases of scarlatina. Moreover, we have pointed to the fact that such apparently simple cases will sometimes be followed by fever and adenitis; and when we add, further, that some of these mild cases of 'herpetic angina' have been followed by diphtheritic paralysis, we ought to lay aside our fondness for classification and subdivision. The clinical conditions of the diphtheritic process are variable in their appearance but alike in their innermost nature." These, Mr. Chairman, are quotations from a paper which I published twenty-six years ago.

The tonsil is a conglomerate of follicles, that means lymph-glands, of the simplest form. They are connected with, or rather separated from, each other by a network of cellular tissue, in the meshes of which colorless and nucleated lymph-cells and fine circular lymph-vessels are contained. The whole surface of the tonsil, composed

(as it has been described) of follicles, is covered with a mucous membrane. Between it and the tonsil there is still a layer of parallel fibres of connective tissue. The mucous membrane has its own muciparous glands, and is covered with several layers of pavement epithelium. These epithelia, however, do not adjoin each other very closely; for, according to the researches of Th. Stoehr, there are interstices between them which permit round cells to escape between them. The surface of mucous membrane is not smooth or unbroken; it has depressions which Luschka called lacunæ, and Virchow, crypts. It is never the entire mass of a tonsil which is affected by a disease. Even malignant maladies start from single localities or tissues. There may be an affection of the superficial mucous membrane or of its epithelial covering, the subjacent connective tissue, or the dense connective tissue situated between the follicles composing the tonsil, or of these follicles themselves with their scanty lymph-ducts, and, finally, the cellular tissue in which the tonsil is imbedded. The character of the disease, whether more or less serious and troublesome, and the changes brought on by it, whether more or less persistent, depend on its nature, location, and extension. The superficial membrane with its lacunæ may be the seat of catarrhal, inflammatory, and diphtheritic processes. There may take place accumulations of mucus, pus, pus and fibrine, and diphtheritic membrane, and mixtures of several of them. In the course of time the mucous membrane itself will undergo changes. Occasionally its muciparous glands exhibit an inflammatory exudation or effusion, and ulceration following the rupture of the vesicles, particularly during a universal attack of follicular stomatitis of infants. Smaller or larger abscesses within the deeper tissue which perforate the surface, destroy part of the tissue and give rise to persistent sinuses, which are found empty or filled with mucus or pus, or pus with fibrine, or cretaceous material, found by E. Gruening to consist mainly of leptothrix and permit of the introduc-

tion of a probe to a depth of from one to two centimetres. The superficial indentations and depressions also may become deeper and assume a more irregular shape, sometimes in consequence of superficial processes, and partly of the breaking down of the deeper tissues. Thus we are not always in a position to determine whether we have to deal with a transformed lacuna or with an incomplete fistula resulting from the destruction of tissue. As a rule, the former are covered with epithelium, the latter are without it.

The lymph-vessels of the tonsils have remained very problematic for a long period. J. Harff wrote an inaugural dissertation in 1876, at Bonn, in which he treated of the anatomical and pathological structure of the tissue of the tonsil. In it he described the circular lymph-vessels, which, as mentioned before, surround the follicles and send very fine ring-shaped nets from within outward. Soon after Sappey published his exact observations in his "Anatomie descriptive," 3 ed., II., p. 892, 1876, and in his great "Atlas," 1882. Injections of the lymph-vessels of the lower surface of the soft palate reach the surface of the right and left tonsils in a newly born child, a foetus, and an infant of from six to seven months. These injections, however, do not succeed in every instance. Whenever they were successful, they went rarely beyond the surrounding cellular tissue; exceptionally only into the follicles themselves. Besides this scanty lymph connection with the velum palati the tonsil has a similar one with the anterior and posterior pillars and the glands adjacent to the common carotid artery. It appears that C. Heitzmann's remark ("Microsc. Morphology," p. 592, 1883), that a large amount of lymph-tissue is stored up in the tonsils, is based on his own observations. These lymph-vessel connections are scanty, as it has been stated. With advancing age they become still more so. They are much less numerous in the adult. It is self-evident, besides, that each hyperplastic proliferation of the connective tissue, which is the direct result of most cases of local amygdalitis, compresses the small array of

lymph-vessels and renders them atrophic. By the same process the surface undergoes changes, inasmuch as the normal mucous membrane and its epithelium are replaced by cicatricial tissue. That can be easily ascertained by the inspection of the throats of those who, while not affected possibly by an acute attack, have suffered from amygdalitis before.

Thus, tonsil and tonsil are not identical at all. When we study an acute attack, or a recent affection, we have always to bear in mind the changes which have been, or may have been, produced by previous diseases in the epithelial layers, in the mucous membrane with its muciparous follicles, and the lymph-vessels.

The surface of the tonsil may be affected, as stated before, with a catarrhal, fibrinous, purulent, or infectious inflammation. The first and the fourth varieties are most frequent at the present time. The first exhibits the usual symptoms of catarrh, viz., hyperæmia and hypersecretion. Actual catarrh of the tonsil produced by cold is not unilateral; it is accompanied with universal hyperæmia of the pharynx. Whenever there is an acute attack with *unilateral amygdalitis*, the latter is the result of either *trauma or infection*. The lacunæ of the surface are, as I said, often changed by previous disease. The new attack is particularly vigorous in their deep recesses, particularly when there are already fistulous diverticles. Then the mucous or purulent secretion is deposited in larger and tougher masses, it is viscid and cohesive, and resembles very much the contents of fistulæ originating from previous purulent inflammation of a part of the tonsil. The more the lacuna is fistulous, or the deeper the original fistula, the more local is the course of the whole process, the less the congestion, the more adhering and the dryer is the secretion. But it never forms a structure intimately adhering and cohering with the subjacent tissue. Occasionally a hard morsel of bread removes a part of the secretion, or a sponge, or a piece of absorbent cotton wrapped round a probe are sufficient to detach, or fetch from nooks the drops, or nodules, or

membrane-like looking points. It is always easy to introduce a blunt probe into the recess of the lacuna or the fistula. This condition may exhibit an acute character, and last but a short time, or it may persist. In that case fibrin is frequently mixed with the purulent mucus. The drop, or nodule, is rapidly replaced by another one. Through weeks and years the same observation and the same procedure may be repeated. Each new attack *may* run its course with or without fever. Sometimes, but rarely indeed, there is some glandular swelling near the lower jaw. It depends less on the local affection, however, than on some accompanying universal pharyngitis or rhino-pharyngitis. Thus the catarrh of the tonsil, of the lacuna, may run an independent course, no matter whether acute, subacute, or chronic, and not attended with any complication. Still, it is self-evident, that some complication is possible, for a throat which is subject to catarrhal or inflammatory disposition offers less resistance to an existing epidemic of diphtheria. A much more frequent complication, however, is nasal catarrh of a subacute or chronic character. It is so frequent, that it is difficult in many cases to decide which of the two, rhinitis or amygdalitis with pharyngitis, was the original disease.

Another variety of disease, the visible elements of which are nodules, deposits of different consistency, either single or numerous, on either one or on both tonsils, is genuine diphtheria. Its deposit, though of small circumference or thickness, is membrane. While in some cases of catarrhal amygdalitis the deposits—being mucous—may change their very location by a change of position on the part of the patient, or are easily removed by brush or probe, in the diphtheritic form the dots do not change their place, they cannot be displaced without some effort, nor will a probe enter a cavity or fistula through them, or alongside. They are spherical or of irregular shape, whitish or whitish-gray; may be thrown off in from four to five or six days; or they get larger within a day; or a number of them become confluent and merge into a membrane.

The space between them, or their neighborhood after confluence has been accomplished, may be pale or congested; fever and glandular swellings in the neighborhood absent or present. The more the morbid process is limited to the tonsils, the more frequently both fever and glandular affection of the neck are absent. But there are cases in which fever precedes the eruption; it may even increase during the presence of the first deposit, and until the completion of the membrane; and recede rapidly in many cases with a favorable result, with or without albuminuria. These severe cases are sometimes accompanied with a moderate amount of glandular tumefaction.

It does not appear difficult to estimate at their full value these cases of punctated diphtheria. But rarely large membranes rise from its basis at once; they are the result of many exudations melting into each other. This process of conglomeration being slow, or incomplete, we have a specimen of what is often called by the general name of follicular amygdalitis. The deposits may form from three different sources: either from the normal interstices of Stoehr, or from interstices formed by previous morbid processes, or directly from the pavement epithelium. It is particularly the persistence of the first which has been called diphtheritic angina, or angina lacunaris diphtheritica. It would be better to drop the name.

Albuminuria is not observed in catarrhal amygdalitis, unless there be a high degree of fever. As a rule, this happens only when there is a complication with intense inflammation, or even suppuration. Nor is albuminuria a frequent occurrence in unquestioned diphtheritic amygdalitis, either punctated or membranous, for the very simple reason that the organism does not participate, or participates but little, unless the amygdalitis is complicated. In uncomplicated amygdalitis, the surrounding cellular tissue being tense, and the lymph-vessel connection between the tonsils and the organism being insufficient, the transmission of the poison, from its original seat to the body, is prohibited. The obstacle is still

more powerful when previous inflammations have resulted in hyperplastic proliferation. Thus the absence of albuminuria militates neither for the catarrhal nor the diphtheritic nature of the inflammation. Its presence is of some account only when its rising from other causes may be excluded ; for nephritis is more frequent than many of us may suppose.

What about fever? Is its absence or presence of any value in the differential diagnosis of the catarrhal or diphtheritic form of amygdalitis? The simple and uncomplicated catarrh of the tonsil yields but few general symptoms, and but little elevation of temperature. However, general pharyngitis and phlegmonous amygdalitis look different. Thus, when there is much fever there is a complication.

The punctated diphtheritic amygdalitis, no matter whether it remains so or becomes membranous, need not be feverish. This fact is sufficiently explained by what I said of the anatomy of the tonsil. To expect fever only because a disease belongs to the class of infectious maladies is a (rather childlike) pathological postulation. Even grave sepsis is apt to run its full course with but little elevation of temperature, and the much boasted-of curves, which look quite picturesque in the books and are sometimes furnished by nature, shine too often by their absence. There are cases of diphtheria with high or little fever ; fever in the beginning ; fever in the advanced stage of the disease, because of more or less absorption of the poison either directly into the blood or through the lymph-vessels, and on account of rapid or slow elimination from the system.

Allow me, in connection with this statement, to return to another one, which does not date from to-day, but which I have often verified and taught, and which will not lose by repetition. Surface diphtheria, without participation on the part of the lymph-vessels, is apt to exhibit no fever, or but little. There is no fever when the affected surface is not connected, or but little so, with the lymph system of the body. Such parts are, besides the tonsil, the vocal

cords. Both are covered with pavement epithelium. Both have but little lymph communication with the neighborhood. What I said of uncomplicated diphtheritic amygdalitis is valid for diphtheria of the vocal cords also. A membranous croup without diphtheritic affection of other parts, or complication with a feverish disease, has no fever. Croup symptoms with high fever, but without complication, do not belong to the membranous form. Catarrhal laryngitis begins with fever. Even in cases of an existing punctated amygdalitis, when symptoms of croup make their appearance, the continuance of low temperature stamps the case as membranous; the appearance of high fever renders the catarrhal character more probable. It is not the place here to enumerate cases of which, however, I have seen many corroborative ones in the course of decades. But the subject is one of great importance both for diagnosis and prognosis and treatment. A single case may be mentioned here. On January 1, 1886, I diagnosticated membranous laryngeal stenosis in a boy aged eighteen months, because of the characteristic respiration and the absence of fever, there being no congestion, inflammation, or exudation in the throat. I had to perform tracheotomy a few hours after. Some membrane was expectorated through the tube on the third and fourth days. There was none in the fauces. On the third day, when the wound became slightly diphtheritic, there was an increase of temperature amounting to $\frac{1}{2}^{\circ}$ F. during a few hours. The tube was removed after a fortnight. The child remained well until he was taken with laryngeal stenosis and a high fever, four weeks afterward. He was attended by Dr. P——, who had assisted me in the operation and heard me speak of the differential diagnosis of these conditions. He diagnosticated the laryngitis as non-diphtheritic and proceeded accordingly. The child recovered in the usual way.

Fraenkel thinks he can diagnosticate some cases of diphtheritic and catarrhal amygdalitis by the absence or presence of peri-amygdalic abscesses. The presence of the latter, he claims, excludes diphtheria, because he

nas, so he says, never seen that combination. That reason is rather negative; his not having seen that complication will not prevent him from meeting it some day, and then he will publish another paper on the subject. I *have* seen the combination of diphtheria and abscess; it is not frequent, but it exists. There is no reason why it should not do so. For diphtheria, perhaps not even those cases excepted in which it enters through Stoehr's interstices, requires a mucous membrane previously affected. No admission to diphtheria through an intact integument. The previous catarrh and inflammation themselves may give rise to abscesses, while they also predispose to diphtheria.

It has been claimed by Fraenkel and others—for instance, by my learned friend, Dr. Holt—that there are so many differences between the course of angina lacunaris and diphtheria that the former is necessarily a special disease. Fraenkel could be right if diphtheria consented to run a typical course, exhibited albuminuria, high fever, paralysis in every instance, and turned out to be fatal in every case. That is, more or less, what has been claimed by some, and the practitioner or author who claims to have seen diphtheria recovering is gently accused of ignorance, or of falsifying his reports on account of ambition or greed. Nothing is more erroneous. Why diphtheria should be observed in the worst form only, when cholera, yellow fever, variola, and scarlatina are permitted to run a mild course oftener than merely occasionally, I cannot understand. If Fraenkel were less particular and less given to schematic differentiation, he would be less troubled about the cases of paralysis of the palate after his cases of alleged follicular amygdalitis. It is true that paralysis is so rare that, “he would fain believe that the case was one of diphtheritic catarrh.” There are, however, besides the paralysis of the facial and trigeminus nerves, from intracranial causes, but two ways in which the soft palate can become paralyzed. It may occur in consequence of a general pharyngitis which results in serous effusion into the soft palate, and secondly by diphtheria

—as a genuine diphtheritic paralysis. Whenever such a paralysis occurs after a punctated membranous amygdalitis, call it what you please, I call it diphtheria.

Such cases as are described by E. Wagner (in *Jahrb. f. Kinderh.*, xxiii., p. 402), in which diphtheria was developed as late as three days after the commencement of an "angina lacunaris," are by no means rare. Cases in which, without fever, half a dozen or a dozen of punctated exudations merge into a membrane after a day or two are frequent. Most of you have also known of families in which one child died of membranous croup, another had nasal diphtheria and sepsis, another pharyngeal diphtheria, another "follicular," pointed, isolated deposits on a tonsil, or both tonsils, with various degrees of fever and constitutional ailment. Nor are the cases infrequent in which the good-natured and well-meaning practitioner diagnosticated a mere "follicular tonsillitis" an "angina lacunaris," and neither isolated nor disinfected, and the malady afterward, starting from the mild case, desolated the family. Whoever has seen that once must not forget it, and whoever has overlooked it once has enough self-reproach to bear to last a lifetime. Thus this "angina lacunaris" has not such an innocent look about it, "behind which," as Fraenkel says, "affections which are not diphtheritic may hide themselves," and in spite of which he advises to isolate the patient; on the contrary, in those cases in which the deposits are firmly attached, and are neither mucous nor purulent, they are diphtheritic, and are to be feared and treated as such.

In the paper published some years ago, and quoted before, I have shown that this variety of punctated diphtheria is mainly seen in adolescents and adults. This fact finds its explanation in my previous remarks on the gradual changes in the tonsillar tissue produced by repeated or chronic inflammations. For this reason the formation of large membranes, and serious constitutional affection, are not frequent among adults. In accordance with this observation is the other fact which has also been stated by Monti, that local and partial diphtheritic angina

occurs mostly in bigger children who are inflicted with chronic pharyngitis and hypertrophic tonsils. Thus we can make the broad statement that pharyngitis produces the disposition to diphtheria and relapses in small children, and chronic pharyngitis of long standing suppresses this tendency in those of more advanced age and creates the disposition to localized punctated exudations. But whether membrane or point, the contagiousness of the disease is the very same. A mild variety begets that which is mild or severe, as the severe form may produce its like, or a mild variety. This mild variety is that from which adults are apt to suffer. It made me proclaim the warning that there is as much diphtheria out-of-doors as in-doors, as much out of bed as in bed. With this variety the adult is in the street, in business, in the school-room, in the railroad car, in the kitchen and nursery. With this variety parents, while complaining of slight throat trouble which is not heeded, kiss their children. It appears there is no escape from this mild, murderous variety. But wherever it is suspected it ought to be looked after; where it is seen it must be isolated and treated, less, perhaps, for the sake of those who are sick, than of those who are in serious danger of being infected.

