THE RELATION OF TONSILLITIS TO RHEUMATISM.*

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One of the first references that I find to the relation of these two diseases was by Desmos, about 40 years ago. He stated that the poison of rheumatism occasionally favored the production of inflammation of the tonsils. The late Sir Morell Mackenzie, in 1880, endorsed this statement and some other authors since that time have accepted this view, but the majority of those writing upon diseases of the throat have not mentioned any connection between the two diseases. I was one of those who several years ago accepted the theory that rheumatism was a frequent cause of tonsillitis and I have seen some well marked cases that tended to confirm that belief; yet, during the past few years, I have unconsciously drifted into the opinion that the relation was only exceptional. In 1901, F. De Haviland Hall and Herbert Tilley wrote: "It is now almost universally agreed that there is an intimate connection between tonsillitis and acute rheumatism." It must be conceded that inflammation of the tonsils and acute rheumatism are sometimes associated and that the same causes occasionally seem to excite the two affections. Some authors go so far as to claim that the rheumatic poison, whatever it may be, practically always enters through the tonsils.

Dr. O. T. Freer, who examined the recent literature for me, has found a number of references to this subject, the most important of which are as follows:

In 1900, Woloshinsky¹ reported a house epidemic of nine cases of lacunar tonsillitis immediately following which three of the patients acquired rheumatism. He regarded polyarthritis as secondary to inflammation of the tonsils, which he thought was produced by pyogenic germs. Frederick A. Packard² writing in 1900, states that during the course of an angina or following it the most important complication is acute articular rheumatism. He thinks rheumatism an infection due possibly to several varieties of bacteria. The rheumatism also, he thinks, may be caused by absorption of toxines. This appears to me the most common cause. He believes infection frequently occurs through the tonsils, more especially in connection with acute rheumatism.

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In 1901, Julius Ullmann,³ expressed the view that the normal tonsil is a protection, but that the diseased tonsil is a source of infection, which may be the place of entrance for acute rheumatism, endocarditis and chorea.

In the same year St. Clair Thomson⁴ states that :“Probably 30 to 80% per cent of the cases of acute rheumatism are preceded by angina; though the relation of the two affections is not yet clear. The tonsil without visible change may be a source of entrance for infection.” An editorial in the *Jour. of the A. M. A.*, Jan 19, of the same year, entitled “The Tonsils as a Portal for Rheumatic Infection,” appeared to express the prevailing opinion on this subject at that time. It states: “Tonsils seem not only to be able to act as places of entrance for articular rheumatism but also for myocardial infection.”

Dr. W. Cheatham⁵ in the same year in an epitome of the subject of rheumatism as a cause and effect in inflammation of the throat, expresses similar views.

Gurich⁶ asserts his belief, founded upon clinical experience, that in many cases articular rheumatism follows chronic desquamative inflammation of the follicles of the tonsils. In supporting this view, he mentions a number of patients who for years suffered from numerous relapses of articular rheumatism that did not recur after treatment of the tonsils.

In 1905, Rottenbiller⁷, mentions 29 cases from his own practice in which polyarthritis followed follicular tonsillitis, and the same year Parmentier⁸ reports one case in a child, where rheumatism promptly followed the cessation of tonsillitis.

The subject is summed up as follows by Isaac Adler,⁹ who emphasizes the frequency of rheumatic infection through the tonsils. This infection need not appear as a follicular angina with fever, swelling of the tonsils, etc. On the contrary, a severe inflammatory reaction seems to act as a preventive of general infection. It is proven (by him) that very virulent bacilli may pass through the tonsils without local changes in them of reactive or inflammatory nature. The thin epithelium of the lacunae is most often injured and germs may pass through it and enter the lymphatic vessels. For this reason, a slight irritation of the tonsils may be the prelude to a more or less severe rheumatic or septic general infection. The author states that muscular rheumatism most often settles in the muscles of the neck, nape of neck and shoulder and that he is convinced that it has a

bacterial source. The acute beginning of these symptoms is nearly always preceded by tonsillitis. He thinks also that the tonsillar source of pneumonia is certain in many cases; and he regards desquamative nephritis, without oedema, vomiting or headache, or other subjective or objective symptoms except the findings in the urine, as in some way related to tonsillitis. He advises the extirpation of tonsils that show the least sign of disease. The most dangerous tonsils he deems the non-hypertrophied ones, with soft permeable tissue and open communication with the lymph passages, especially where there are epithelial changes in the crypts.

I can find no evidence in support of most of his views and certainly they do not agree with my personal observation.

I had gradually grown to think that there was no intimate relation between tonsillitis and rheumatism, but the request of our secretary that I present a paper on the subject caused me to have an examination made of the records in my office of my private patients. Dr. G. W. Mosher has carefully looked over my case books and from these records, which include the histories of 1393 different patients who came to me suffering with acute and chronic tonsillitis, the histories of 100 acute cases have been taken without selection. An analysis of these seems to give a fair idea of the conditions that would obtain in all. Without selection, excepting as to age and sex which seem to be determining factors in many cases, we took 100 other control records of patients coming to me with other diseases for the purpose of ascertaining as nearly as might be the frequency of rheumatism not associated with tonsillitis.

Statistics on the etiology of diseases are frequently misleading on account of the absence of control cases; for example, if in 100 cases suffering from tonsillitis, we should find that there were 50 who had suffered from rheumatism, the customary way would be to conclude that rheumatism was the cause of the disease in 50%; whereas if in the 100 control patients, without tonsillitis, we should find that 50 had suffered from rheumatism, it would appear that 50% of all patients suffer from rheumatism and that, therefore, there is no relation whatever between the angina and the arthritis.

An examination of our histories revealed some other points of interest aside from the question under consideration. For example, nearly all of the patients had indoor occupations and 70% were males. Interesting figures also appear regarding the ages of the patients affected. Only one was less than 10 years of age and only one was over 50; 7% were between the ages of 40 and 50; 11% between 10

and 20; 26% were from 30 to 40 and 54% were between the ages of 20 and 30 years.

An analysis regarding the character of the inflammation shows 48% were follicular, 35% parenchymatous, 11% suppurative and 3% were ulcerative. In 3, the character was not stated. In 35%, there had been no previous attacks. In 11%, the patients were subjects of chronic tonsillitis; 9% had suffered from one or two previous acute attacks and 45% had suffered several or many previous attacks. This analysis yields no definite results regarding exciting causes of the disease, although 30% were attributed to colds.

It was found from this analysis that 45% of my patients who were suffering with acute tonsillitis were having at the same time, or had had previously, or had immediately following, an attack of acute rheumatism; whereas only 16% of the control cases had been similarly affected. This would suggest that 29% of all cases of acute tonsillitis are closely associated with some form of rheumatism and that in this proportion inflammation of the tonsils appears to be due to the same causes as rheumatism. However, as the term "rheumatism," in this analysis, includes muscular rheumatism, there is a possibility that in some of these cases the muscular pain may have been due to other causes.

Of the 45%, in whom rheumatism and tonsillitis had been in some way associated, 26 had muscular rheumatism and 27 had articular rheumatism, some of these having had both varieties of the disease. Some had the rheumatism before the tonsillitis, some at the time, and part following the arthritis; while others had the attack at two or more of these times. This analysis shows that only 5% had acute rheumatism immediately before the tonsillitis, that during or immediately following the attack of tonsillitis 8% had muscular rheumatism, and that 8% at these times had articular rheumatism. Thus only 13% showed any very clear association with the latter disease for what was termed muscular rheumatism was possibly simply the aching due to the angina.

The figures appear to prove that 45% of all cases of acute tonsillitis are in some way associated with rheumatism; that 29% have more than an accidental relation and that at least 13% are so closely associated with the latter disease as to justify the hypothesis of an identical cause. However, we must admit that they do not disprove a like etiological relation in the other cases.

Guerich, already quoted, believed that the removal of diseased tonsils would, in some cases at least, prevent the return of attacks of

rheumatism, and Adler advises the extirpation of tonsils that show the least indication of disease, apparently for the same purpose. In all these cases of acute tonsillitis, my records only show 11% that were affected with chronic disease of these glands, therefore I cannot agree with Adler that all tonsils showing the slightest evidence of disease should be removed; but I do believe that tonsils that frequently become inflamed, or enough enlarged to interfere in any way with the normal functions of the throat, should be excised or cured.

From this analysis I conclude: First, that I have gradually fallen into error regarding the relation of tonsillitis and rheumatism and that what has appeared to me merely casual is in fact due to an identical cause for the two in from 13% to possibly 29% of all cases of acute tonsillitis.

Second, 45% of the cases of tonsillitis have a rheumatic history, but 16% of other affections of the throat and chest also have a rheumatic history, so that not more than 29% of the cases of acute tonsillitis can fairly be attributed in any way to the rheumatic poison, and more than half of these are very doubtful.

Third, among my patients only 19% gave a history of previous attacks of articular rheumatism, and 18% a history of muscular pains that they ascribed to rheumatism.

Fourth, 8% of the cases of acute tonsillitis were attended by or immediately followed by articular rheumatism; the same number claimed to have had muscular rheumatism, while in 5% the rheumatic attack immediately preceded the angina.

Fifth, there is not, as yet, sufficient evidence to prove that the tonsil is the only or even the chief portal of entrance for the rheumatic poison. Considering, however, that, in all probability, acute articular rheumatism represents a mild type of septic hematogenic infection of the joints, there is no reason why the tonsil with its notorious facility for infection with pyogenic germs should not, possibly even frequently, assume the role of an infected wound leading to septic consequences of a systemic nature. These septic conditions vary in degree and location and rheumatism is perhaps one of the phenomena.

Sixth, the evidence does not yet justify the belief that inflammation of the tonsil may prevent (or take the place of) an attack of rheumatism.

Seventh, the statement that the acute beginning of muscular rheumatism is nearly always preceded by tonsillitis is not supported by

the histories of my cases, in only 2% of which did muscular rheumatism follow tonsillitis. However, in 6% muscular pains that were called rheumatism attended the tonsillitis, though they may have been due to the fever attending the inflammation of the tonsils.

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Congenital Atresia Naris. Report of a Case. GEORGE COHN. *Monatschr. f. Ohrenh.*, Berlin, Dec. 1904.

The author reports a case of unilateral bony atresia of the left naris near the choana, in a boy 10 years old. From a critical review of the literature of the subject, he arrives at the following conclusions: Sex has no influence on the frequency of this deformity. Half of the cases are bilateral, but in the unilateral cases the right side is more frequently affected. Seventy-five per cent. of the cases are associated with high-arched palate. Interference with breathing and feeding may cause the death of the patient during infancy, but, if the patient survives, mouth breathing and anosmia are the main symptoms. Operative treatment gives good results, but if the atresia is unilateral the symptoms are so slight that operation is not always necessary. YANKAUER.