Abstract of Original Papers

STUDIES ON TONSILLAR FOCAL INFECTION, ESPECIALLY ON ITS DIAGNOSIS

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One important subject in our studies on the clinical medicine seems to be a focal infection that causes the various kinds of systemic diseases.

It is a medical common sense from the etiological standpoint of view to associate an original focus with the developments of the systemic diseases. In the case of systemic diseases caused by the original focus, the removal of the focus leads to convalescence and healing, and vice versa, the local intercurrent relapses bring about the developments of the systemic diseases.

The focal infection theory, however, stands on a weak validity which has not satisfactory experimental pathogenic bases and the developments of its mechanism. So by far our diagnosis depends only upon the "Diagnosis ex juvantibus" because of no satisfactory diagnostic methods. These are scientific weak points in the theory.

The so-called head foci, such as chronic tonsillitis, dental disease, sinusitis, etc. are known to be the main foci, of these cases, chronic tonsillitis has obvious weight. However, these foci do not always bring about systemic diseases; when a patient has chronic tonsillitis together with systemic disorders suspected of focal infection, the most important problem is to prove whether the tonsillitis is really connected with focal infection or not as to the decision of the treatment principles, nevertheless, as for the diagnosis in most of the cases the situation is not always readily discernible.

The relationship between chronic tonsillitis and systemic diseases can be traced by the history of disease and the results of the operations may be said to be the most reliable method, in this respect, Diagnosis ex juvantibus. It is however, not enough to apply directly to the diseases such as; the original focus develops beyond the limit of operations so as to form a secondary focus, or the systemic disease which make its changes old and irreversible.

On deciding whether the tonsil is the focus, abnormal signs in the local findings are noticed, but these can not always be concluded as to be the characteristics of focal chronic tonsillitis. In this respect, many kinds of examinations are to be performed, but general reactions of the body do not necessarily reveal the direct relation with the tonsillar focus and the systemic diseases, the results of the tests being greatly influenced by the conditions of the systemic diseases. Therefore, nowadays a provocation method, stimulating the suspicious original focus or annulation method, isolating in turn the impulses from the focus has come to be used and then not only the changes of the original focus or the systemic disease but also of the temperature, blood, E.C.G. urine etc. has come to be examined. Moreover, a combination method assorting these two is now in use.

That is to say, various stimuli to the focus send out into the humoral fluid the bacteria or the produced toxines, destroyed materials of lymphocytes or antigenic substances contained in the focus. These stimulations bring out the disorders of the autonomic nervous system. So the changes of the bodily reaction as a defense reaction or the transformations of the symptoms are observed in the systemic diseases. Many kinds of impulses from the focus are annulated and isolated. The results of
annulation and isolation to distant symptoms are observed and the possibility of the development is determined.

Gutzeit summarized these basic theoretical facts as a noxine theory of focal infection.

These focus tests are classified as follows, the objective and subjective method of classification, pathogenetical method of classification and the general or local focal reaction method of classification.

Besides them, mechanical, medicamental, or seroimmunological method or such can be mentioned too.

This is the report on the results of the investigations the author performed by his own method of classification.

Results

I General Diagnosis

1) Anamnensis diagnosis

The anamnensis is determined when the comparative studies are performed on the focus and systemic disease. It is based on the Diagnosis ex juvantibus or the results of many other tests.

The results are as follows, 59.8% of chronic tonsillitis associated with systemic diseases were presumed to have historically some connection with each other and this went up high to 77.9% in the strictly determined tonsillar focal group and down low to 22.1% in the suspected tonsillar group. This illustrates the significance of recording the precise history as Parade pointed out.

2) Blood findings

There is a little tendency of pleocytosis of more than 1000 leucocytes in focal chronic tonsillitis, but when compared with the simple chronic tonsillitis it seems to be found more frequently, in the former lymphocytosis is a little more noticeable and the appearance and increase of plasmacytes that cannot be estimated in the latter is observed.

The positivity of the cases in which the difference in the local leucocyte count between the lateral cervical part and the ear lobe is more than 1000, is only 11.8% in the patients with simple chronic tonsillitis and 28.6% in those with focal chronic tonsillitis.

Three hours after the indirect inducements by the irradiation of ultra-short wave in the latter cases, the difference increases to 50% and it is five times greater than that with simple chronic tonsillitis. This result has a diagnostic significance, as the efficiency of tonsillectomy in those positive cases is high, being useful as a indication of tonsillectomy.

The increase of erythrocytes sedimentation rate is observed in 18.4% of the patients with simple chronic tonsillitis, while in 56.9% of the patients with focal infection, especially at a higher percentage in those with nephritis or rheumatism.

3) Electrocardiogram

The exercise test was made on 109 patients with chronic tonsillitis, including 36 cases with simple chronic tonsillitis and 73 cases with systemic diseases; 30.3% of all the cases were found to be abnormal.

Items; ST abnormalities mostly observed and 17 cases, in decreasing order, P abnormalities 5 cases, flat T waves, Q.R.S. prolongations, low voltages, ventricular extrasystoles each 2 cases contained, etc.

The abnormalities were found in 5.6% of the patients with simple chronic tonsillitis, on the other hand 43.1% of the patients with focal chronic tonsillitis, and precisely speaking, most frequent in the patients with heart disease, and slight fever in decreasing order. The abnormalities were improved in 55% of those patients after tonsillectomy, especially remarkably noticed in nephritis and slight fever.
But 2 cases of simple chronic tonsillitis remained unchanged.

The improvements were noticeable particularly as to the abnormal low T wave, the low voltage and the abnormality of ST.

Out of the 25 cases with focal chronic tonsillitis provoked by induction tests, in 3 cases by ultrashort wave irradiation and 2 cases by the hyaluronidase massage test i.e. in 20% in all abnormalities appeared, especially noticeable in cases with heart diseases. These changes such as ST abnormalities and T flattening appeared 3 hours after the treatments and that of P after 3 days. Therefore examinations of both times were desirable. By rinsing of the crypts the E.C.G. was improved in some cases of heart diseases. The mere record of E.C.G. is important itself, but its changes by induction and negation are more significant.

4) Function-test of the autonomic nervous system

In view of the results by the pharmacodynamic test, all the 10 patients with simple chronic tonsillitis have autonomic hypertonia, while the patients with focal chronic tonsillitis have the same type of 55%, in addition to it, parasympathetic instability (25%), autonomic instability and parasympathetic hypertonia, and thus contained the disorders of the autonomic nervous system. These facts suggest playing a role in the completing mechanism of focal infection.

5) Thorn's reaction

In the patients with chronic tonsillitis accompanied by systemic diseases, the positive cases are found in 54.2% and the figures increase to 75% in the manifestly tonsillar focal infection, so higher than those with simple chronic tonsillitis or soft tonsillar hypertrophy, the positive cases turn out to be in the negative by tonsillectomy. There is a presumption of more adrenocortico hypofunctions in focal infection.

6) Weltmann's reaction

Focal chronic tonsillitis shows a twice higher positive rate, 54.3% of the reactions in which all the cases are prolonged, than that of simple chronic tonsillitis. From these facts that the reaction is negative in all the cases with simple chronic tonsillitis even after the hyaluronidase-massage inducement, by which 33.3% of those with focal chronic tonsillitis turn to be positive, and that in the positive cases the effective rate of tonsillectomy is high, significance is attributed to the positivity after the inducement.

7) Plasma protein fraction

In the measurement by Tiselius' electrophoresis, the focal chronic tonsillitis except nephritis shows a decrease of A1 and an increase of \( \gamma\)-G1, comparing with those of simple chronic tonsillitis.

The changes induced by the ultra-short wave provocation develop the similar tendencies in the focal groups, and then these tests are of some value for focal diagnosis. By tonsillectomy, A1 is shown slightly above its fluctuation limit of simple chronic tonsillitis and \( \gamma\)-G1 decreases.

As for the serum muco-proteins, besides the fraction of protein is merely higher in the tonsillar systemic diseases.

II Diagnostic tests by induced symptoms and signs

1) Muscle fibrillation reaction and Achilles' tendon pressing test

In comparison with 13.4% of normal tonsils, 23.5% of the simple chronic tonsillitis, the positivity of the focal chronic tonsillitis shows a rather higher percentage of 42.0%.

The feature of this method is that though there is no positive case after the massage of tonsil in the
cases with simple chronic tonsillitis, 50%, are positive of the cases with focal chronic tonsillitis, especially at a high percentage in rheumatism. By this fact, the positive conversion after massage seems to be ascribed to focal chronic tonsillitis.

As for the Achilles' tendon pressing test, there are more positive cases in focal chronic tonsillitis, particularly in rheumatic group, but the positivity is as much as that in non-tonsilligenic group. Therefore the diagnostic significance is not great.

2) Capillary resistance and petechial test

The average value of the dermal capillary resistances in simple chronic tonsillitis is $-158\text{mmHg}$, and out of the focal chronic tonsillitis, $-146\text{mmHg}$ in slight fever, $-127\text{mmHg}$ in rheumatism and $-119\text{mmHg}$ in nephritis. The values in all of them increase after operation. The petechial test shows similarly a rather higher positivity in focal chronic tonsillitis and equilibrates in 88% with the capillary resistances. Both of the tests are of little diagnostic value in focal infection.

3) Sludge phenomenon and sludge test

Sludge phenomena in the bulbar conjunctiva are shown positive in 32.4% and sludge tests on a slide glass are positive in 27.9% of the patients with simple chronic tonsillitis, on the other hand, 79.2% are for the former and 78.2% for the latter positive in those with focal chronic tonsillitis. The contingency between sludge phenomena and sludge tests is 81% high. But from the fact that even in the patients associated with otitis media or sinusitis these reactions are frequently positive, these two are of less diagnostic importance. Through electron microscopic investigation, marked coatings were observed by Bloch’s method on the surfaces of sludged erythrocytes that were uneven and villously ragged and not observed in the sludge negative erythrocytes. By ultra-thin slice method, certain string-like shadows instead of the coatings were more frequently observed in sludged blood.

4) Remky’s reaction

The instillation method is exploitable by using a drop of the histamine solution diluted to 1:10000. There are only 3.8% of the positive cases with simple chronic tonsillitis and no case of those is positive by using the histamine solution diluted to more than 1:20000. There are 41.3% of the positive cases with focal chronic tonsillitis, where the efficiency of tonsillectomy is as high as 89.5% and the test has a certain degree of diagnostic significance.

III Local diagnostic methods for the focus

1) Local findings, morphological and electromicroscopical findings of the tonsils.

Most of the crypts in the tonsils with focal chronic tonsillitis are smaller and obscurer comparing with those of simple chronic tonsillitis, on the other hand, more scars are observed and tendernesses on pressure of the cervical lymphnodes and jugular vein regions are mostly found by palpation. Regarding the tonsils in the heart disease or rheumatism, comparing with those in simple chronic tonsillitis, there are observed fewer spherical forms and mostly in the flat or suspension forms, and the degree of prominence (of their exposure) is smaller. The tonsils in nephritis are the largest, while those in rheumatism are the smallest of all those in focal infection.

As for the microorganisms in the crypts, hemolytic streptococci were demonstrated at a rather high percentage of 69.3% and hemolytic staphylococci, diplococci, and leptothrix were also highly observed. According to the classification of the cells punctured out of the tonsils, it is characteristic that neutrophils, eosinophils, and phagocyted reticular cells are fewer in the tonsillar soft hypertrophy than in simple chronic tonsillitis, on the other hand eosinophils and plasmacytes are apt to be greater in number in focal chronic tonsillitis.
Electromicroscopic observations

The epithelial layer of the mucous membrane in the tonsillar rheumatism is consisting of 1~2 strata of basilar cells, and collagen fibers are running in all directions under the basal membrane. In the tonsillogenic nephritis, the spaces between the epithelium cells are wider and the fine villi are more irregular and greater, on the points of which, electronically dense substances are observed, in some of the upper epithelial cells vacuole being formed. More detail observations were investigated concerning each of the cells in the tonsil parenchymas.

2) Radioisotope test

A solid material of inorganic phosphate, with lactose consolidated and containing $^{32}$P $50\mu$C, is inserted to the superior lacuna or into another crypt, and then the radiations were measured in the tonsil itself, blood and urine.

The absorption level of tonsils shows the maximum 1~2 hours later after the insertion, and 22% in the normal tonsils, 36.3% in the simple chronic tonsillitis, and out of the focal chronic tonsillitis, 65.6% in nephritis, 40.6% in slight fever, 18.4% rather lower in rheumatism. The blood radiation shows the maximum level 3 hours later, when the radiation level in simple chronic tonsillitis is a little higher than that in the normal tonsils, while that in the focal chronic tonsillitis shows the maximum 4 hours later especially in rheumatism because of the slower absorption from the tonsils and normal excretion into the urine, and C.P.M. is not so great. In nephritis the radiation level is higher and shows a long lasting duration because of a rapid absorption and disturbed excretion into the urine.

3) Decolorization reaction of the pigments in tonsils

Two-tenthml of a 0.8% methylen-blue solution or of 1% 2,6-dichlorphenol indophenol solution was injected to the tonsil parenchyma, decolorization time of the pigments being measured. Both examination are useful for discrimination between the soft tonsil hypertrophy and simple chronic tonsillitis, and decolorization time is much longer in focal chronic tonsillitis than in simple chronic tonsillitis.

4) Electrical diagnostic method

No definite tendency can be found in the measurement of the potential differences on the tonsils. IV Local provocation method of the focus

1) Tonsil massage method

By using Nosaka's massage appliance, right and left tonsils were alternately stimulated for 5 minutes. When 3 hours after the massage, the increase in leucocyte count and the mediate value of erythrocytes sedimentation rate is, respectively, more than 1200 and more than 12mm and the temperature rise, 15 minutes later, more than 0.55°C, the test is defined as to be significant and positive. The values are within the limits above mentioned in simple chronic tonsillitis. The positivity for leucocyte count is 53.3% in focal chronic tonsillitis and its increase of more than 2000 is 40%. The positivity for E.S.R. is 30.8%, particularly in rheumatism the values are markedly changeable. The urinary changes in nephritis are markedly noticable and the increases of albumin and red blood cells are of invariable occurrence.

2) Ultra-short wave provocation method

By the indirect stimulation through the lateral cervical regions of both sides for five minutes, the reaction is too weak for the test to be proper, but each reactions stimulated for ten or fifteen minutes make no difference. So the 10 minutes rate will be enough. And to decide the positive standard for this test, it is adequate to be in the same way as in massage. The changes of temperature are appreciable 15 minutes later and the positivity (above 0.55°C) is 52% in focal chronic tonsillitis. The posi-
tivity for leucocyte count is about 58.6% and the increases of plasmacytes and neutrophils are shown. The positivity for E.S.R. is 45% and the increases in the amount of protein and in red blood corpuscles in the urine are of significance. Regarding focal chronic tonsillitis proved more than two positive out of the body temperature, leucocytes, and E.S.R., all cases turned to be in the negative by the provocations after tonsillectomy and the systemic diseases were all improved or cured; so in this case diagnostic significance is so great as that in massage. In the case of the author’s method using the direct stimulation with oral electrode for five minutes on each sides, it is profitable to determine the positive standard as follows; above 0.45°C for temperature, above 1000 for leucocyte count and above 10 mm for E.S.R. This method showed 75% positive in both of the temperature and leucocyte count and 59.4% positive in E.S.R.. This direct method is better than the indirect method, because the former has higher positivities and can distinguish apparently between simple chronic tonsillitis and focal chronic tonsillitis.

3) Roentgen ray provocation method

The dose of X-ray for each side was 30r. The positivity for leucocyte count of more than 1000 showed 71.4% and the acceleration of more than 5mm for E.S.R. was 63% in focal chronic tonsillitis. The urinary changes in nephritis were 78% and the increase or improvements of pain in rheumatism were significant.

4) Galvanic current stimulation

The stimulation at 5mA for 5 minutes had no appreciable effect except the case of tonsillogenic nephritis.

5) Super low frequency provocation

By the author’s method (30 cycles, 3mA and for 5 minutes on each sides), it is negative in simple chronic tonsillitis, while it is proved in 38.7% of the tonsillar systemic diseases that are positive for both leucocyte count and E.S.R.. The reaction is not so remarkable as in the ultra-short wave provocation and the patients complains of pain in the tonsils at the time of inducement. The ultra-sonic inducement is not suitable.

6) Hyaluronidase test

Two thousand V.U.C. is dissolved in 1ml of the physiological saline solution, 0.5cc of it being injected to both tonsils. The oral temperature shows no changes in the normal tonsil patients but the rise of 0.15°C at maximum one hour after the injection in simple chronic tonsillitis, while on the other hand the rise of 0.20°C as early as 30 minutes later continue for 4 hours and the temperature is influenced till 8 hours later, particularly in slight fever a degree of 0.35°C used to rise. There is no case in which the temperature rises more than 0.3°C from the 30 minutes later to one hour later after the injection both in the normal tonsils and in the simple chronic tonsillitis, while there appears those cases in 68.3% of the focal chronic tonsillitis, especially in slight fever 81.1% high. Both the increase of leucocyte count more than 1000 and acceleration of B.S.R. more than 10mm after 1 hour are determined to be the positive standards. The positivity for leucocyte count is 10% in simple chronic tonsillitis, 70.7% in focal chronic tonsillitis and the positivity for B.S.R. is all negative in normal tonsils too, 10% in simple chronic tonsillitis and 65.9% in focal chronic tonsillitis. The changes in urine can be observed in 85.7% of the patients with nephritis and the increase of pain in 80% of those with rheumatism.

The cases with conspicuous increases of the major symptoms of the systemic diseases and with more than one of the positivities of the above tests are found in 10% of simple chronic tonsillitis, but
In 85.3% of the manifest focal chronic tonsillitis. The efficiency of tonsillectomy for these positive cases is 94% high, and this shows the excellency of this test.

The author's aim is that this method to be combined with a mechanical action of massage to reinforce the reaction; so appearance of the reaction is quick and remarkable. As for both the temperature and B.S.R. are 78% positive of focal chronic tonsillitis, leucocyte count 78.4%, urinary changes 85.7%, increases of pain reaction 81.8% and the efficiency of tonsillectomy especially in nephritis and rheumatism are 100%. In general, the test is positive 20% in simple chronic tonsillitis, 86.5% in focal chronic tonsillitis. The hyaluronidase test can be operated briefly and is applicable to the diagnosis of not only the slight fever but other systemic diseases, being so reliable.

V Immunoserological test (Antigen-antibody reaction)

1) Intracutaneous reaction by the tonsil extract

The removed tonsils of focal infection were extracted, aseptically, with a physiological saline solution, the extract being adjusted to contain 1% of protein and 0.1ml of it was injected intracutaneously. Redness on the skin was found in 33.3% of the patients with simple chronic tonsillitis, the average of its diameter being 3.4mm. On the other hand, the positivity was 72.4% in tonsillogenic focal infection and the diameter was 10.6mm. The positivity is of significance, considering that the systemic diseases are all improved after tonsillectomy.

In the reaction of Prausnitz-küstner, the size of redness of the skin is larger in the group of focal chronic tonsillitis, but its appearance is to a degree only a little more frequently proved.

2) Spenglersan's test

The reactions such as a sore throat and a drying feeling will appear within 2 and 8 hours after the embrocation.

In the patients with simple chronic tonsillitis, the positivity is 20.0% and in those with focal chronic tonsillitis, 70.6%.

The percentage is especially high in those with nephritis or rheumatism. The efficiency of tonsillectomy for the positive cases for this test is 83.3%. As the efficiency for slight fever is 100%, this test is reliable. By-effects of this test are more frequently observed in focal chronic tonsillitis, half of them being slight headaches or burning feelings or light arthralgies in rheumatism.

3) Ganslmayer's test

This test shows 21.4% of positivity in simple chronic tonsillitis, which makes little difference with that in focal chronic tonsillitis but the positivity in tonsillogenic rheumatism is 77.8% high and so important. The efficiency by tonsillectomy of the positive cases is not great, so diagnostic value can not be highly estimated.

The reaction appears between 2 and 8 hours later after the injection. The harmful by-effects of this test are less than those of Spenglersan's test, however in one-fifth or in one-fourth out of these cases some harmless redness and induration being observed during 3 or 4 days.

4) Pyrifer test

By the dose of 0.3ml, as in the original method, the general reaction is so strong that 0.1ml, 5 units for a male, 4 units for a female is suitable for injection. In simple chronic tonsillitis, the positivity is 21.4% and in focal chronic tonsillitis, 73.1%. The temperature begins to rise about 2 hours after the injection, comes to the maximum about 12 hours later, and falls down to the normal about 30 hours later. As a harmful by-effect, headache invariably comes out with emergence of fever. Arthralgies and low back pains are found in half of the cases.
Judging from the efficiency of tonsillectomy, Pyrifer-, Spenglersan- and Antisepton-tests are reliable in this decreasing order.

5) Antistreptolysin reaction

A.S.T. of the serum in simple chronic tonsillitis is 194 u. in average, and higher than that in the normal tonsil (98 u.) and in the case other foci are not found it becomes to be suspected of. On the basis of positivity standard of more than 250 u., 35.5% in simple chronic tonsillitis and 57.1% in focal chronic tonsillitis. This relationship coincides with the degrees of detectability of hemolytic streptococci in the tonsils.

By the inducements as ultra-short wave or hyaluronidase-massage provocation, the effects are greater and make difference between 17% of simple chronic tonsillitis and 69.2% of focal chronic tonsillitis. The tonsillectomy efficiency of the positive cases induced is near 90% high, which is higher than 74.1% of the original, not induced positive cases and therefore importance should be attached to the potency increase by inducement.

6) Antistaphylolysin reaction

Almost all in simple chronic tonsillitis shows below 0.5 units in this test. Some in focal chronic tonsillitis contains 4 units. The test is, however, not so significant as A.S.T.

Penicillin focal test is all negative in focal chronic tonsillitis.

Latex fixatio-test is all negative in simple chronic tonsillitis, but its positivity, 31.6% in focal chronic tonsillitis. The increase and positive conversion of the reaction by inducement is about 88%, especially high in rheumatism and so the diagnostic value is not great. In the C.R.P. test the positive are found only in focal chronic tonsillitis, but only 39% even in rheumatism, which fitting rate is the highest. 86.2% of them changed to be negative by the test after tonsillectomy.

VI Annulation diagnosis and combination diagnosis

1) Impletol test

The improvement of pain in rheumatoid arthritis assumed of tonsillogenie origin is found 82.1% of the cases. That in rheumatism of conspicuously tonsillogenic origin is 96.9% of the fitting percentage.

The time required for alleviation of pain is almost 4 hours, and it marks particularly within 3 hours in the conspicuous tonsillogenic origin. However, there is no secondary phenomenon which Hunek referred to. The duration of the effect of alleviation of pain is ranging between at shortest 4 hours and at longest 4 days, on the average 29.5 hours, and the more obviously tonsillogenic, the longer.

The case in which the time of alleviation of pain is not shortened by consecutive injections is 93.5% in those of tonsillogenic origin, and this is higher than 54.5% of the obscure origin. It is necessary for the injection to be tried at least 3 times. The swelling of joints was relieved in 9 cases of 23 and in 5 cases disappeared. Moreover, alleviation of pain is shown about in 67% by the Impletol iontophoresis. The positivity for the cases which effectively respond to tonsillectomy is 94.4% high. This test is indespensable for the diagnosis combining the treatment of the rheumatism, so the case positive for the test is fit to tonsillectomy.

2) Tonsillar crypts-rinsing method

The crypts are washed out by the crypt syring with the solution of scridine-pigments or of antibiotics for 5—7 days.

The temperature went down to the normal in 94.4% of tonsillogenic slight fever, and this sign appeared in the majority of the cases after twice rinsings, though the changes of leucocyte count and
B.S.R. were not remarkable.

Besides in rheumatism alleviation of pain was proved in 67% and in nephritis improvement of urinary findings was showed in 7 cases out of 10.

In all the positive cases of this test can be observed the effect of tonsillectomy, and the ineffective cases proved to be negative in this test. Therefore this is the most excellent method for the diagnosis of slight fever, and even in another systemic disease improvements of the main symptoms make it clear whether or not they are connected with the focus.

The annulation method is superior to others in the points of that it is based on the improvement of the systemic diseases and it possesses the diagnosis and the treatment without a transient exacerbation as observed in provocation.

3) Combined diagnostic methods

Provocations were induced by the hyaluronidase method, the hyaluronidase-massage method which have not yet been reported, and Pyrifer test, and then the reactions were nullified by the impletol injection or the crypt-rinsing. The fitting rate of this method for the cases of tonsillogenic origin is remarkably high 91.7%, and the positive cases were improved in 90% by tonsillectomy. This method is valid and reliable.

Discussion and Summary

The results of this study are summarized as follows. Validity of precise anamnesis is confirmed in focal infection.

In the local findings of focal chronic tonsillitis in comparison with those of simple chronic tonsillitis, there is no decisive key to clarify the focal pathogenetic potency, but the tonsillar signs above mentioned, in particular, the characteristics in each systemic diseases and the results of tonsil puncture are referable. A general test or secondary phenomenon as a focal diagnostic method is not necessarily a proof that the tonsils have directly the pathogenic potency to develope into the systemic disease. Those results are probably only the conditioning factors or the reflections of the pathological conditions of the systemic diseases, and have no significance but screening tests.

On the contrary, each of the provocations is superior to the mere general tests in the point of persuing the bodily influences following the tonsil irritation and in many cases is reliable. There is a weak point, however, that sometimes the systemic diseases are exacerbated even though they are generally passing. Many of the sero-immunological test have high diagnostic fitting rates, but some of them have harmful by-effects.

On the other hand, the annulation method, both crypt-rinsing and impletol test has no weakness as can be seen in provocation and is an excellent method possessing both diagnostic and curative procedures for the systemic disorders. The provocation-annulation method has its validity because the local pathogenetic potency are repeatedly ascertained.

Although the limit of diagnostical suspicions of the focus can be shortened by various tests, it may be difficult to disclose a sure cause of disease except a few tests.

Those excepted are the crypt-rinsing method and the hyaluronidase provocation, and the combination method assorted the former with the latter in tonsillogenic slight fever, and moreover the hyaluronidase or pyrifer provocation method, combined with impletol annulation, all these being most reliable, that is to say, as for inducement method, the hyaluronidase provocations, in particular, the massage combination method and ultra-short wave irrigations, in particular, the direct provocation method are excellent.
The tonsillar massage method, intracutaneous reaction of the tonsil extract, E.C.G. and Pyrifer and Spenglersan tests slightly by-effected are reliable in this decreasing order.

Antistreptolysin reaction is useful, emphasis in particular, being placed on the rise in potency by the inducement.

The X-ray provocation, Weltmann's reaction, Remky reaction, muscle fibrillation reaction and low-frequency provocation are significant in rheumatism or in nephritis.

The $^{32}$P inserting test in the crypts are useful for the diagnosis of nephritis and slight fever.

It is generally of significance to analyse the changes of the whole body or systemic disorders by the inducement or negation in the tonsils. This may hold with the leucocyte counts in the lateral cervical parts, Weltmann's reaction, E.C.G. in heart disease, muscle fibrillation in rheumatism, and fractionization of blood plasma protein.

In examining each reaction, importance is attached to leucocyte count, E.S.R., and in decreasing order, the temperature; particularly more than 2 positive cases out of the three being to be highly evaluated for the diagnosis. Besides it is natural that the pain reaction in rheumatism, urinary changes in nephritis, fluctuation of temperature in slight fever, and E.C.G. in heart disease should be much taken into consideration.

Ganslmayer test is important in rheumatism, the pressing test of Achilles' tendon, and C.R.P. test are also of a little importance. The time of decolorization in the tonsils is rather referable too.

However, the value for capillary resistances, the petechial test, Antistaphylolysin reaction, sludge test, Mester reaction, latex fixation test, penicillin focal diagnosis, the inducements by galvanics or ultra-sonic wave, and the measurement of mere blood plasma protein or tonsillar electric potentials are of little diagnostic value.
扁桃性病巣感染特にその診断

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病巣感染によって起きると考えられる疾患は極めて多く、臨床医学における重要な問題である。しかもこの場合原病巣を早く発見し適切な治療を行ううえで、二次疾患の予防を左右する重大な因子である。従って病巣の中で最も重要な位置を占める扁桃の病巣診断を明確にすることは意義が深い。私は本報告の主題をここに求めて、広く各方面からFokus-Testを検討すると共に、さらに扁桃感染の病態生理に関する2.3の事項をも追究した。

本研究において私は扁桃マッサージ器、超音波換気用の滅菌同時器、扁桃消毒などを試作し、新しい診断法として低周波換気法及び3P凹腐食入による実験を試みると共に、Hyaluronidase試験にマッサージ法を併用する実験を検討した。又複合診断法として従来用いられたことのない発泡によるPyrifer試験、Hyaluronidase試験、同マッサージ併用法と打消にImpelot試験、扁桃囲め洗浄法の組合せ法を考案し、最も簡便性があることを見出した。又囲め洗浄法は発熱だけでなくリウマチ、腎炎、心疾患の診断にも利用でき、Impelot試験はイオンフローレーの導入もし可能である。なお扁桃の粘膜上皮細胞や実質細胞の電子顕微鏡的知見を明らかにし、またSludge陽性赤血球にはBlochの法で陽性赤血球に見られない線状凹凸不平の物質が表面に附着、超薄切片法でもかるる被膜をメタノール特有を認めている。

本研究においては一般的診断法、診療診断法、局所病巣診断法、免疫血清学的試験、打消に複合診断法に就て検討を行った。これらの詳細に就ては専門家に著作を参照して戴き、ここにはその要旨のみに止める。

先ず病巣感染では詳細な問診の価値が再確認される。慢性扁桃性扁桃炎の局創・見では、慢性単純性扁桃炎に比して病巣を明確にする幅の決定的なものはない。たと扁桃の処創で各種二次疾患における扁桃形態の特徴は参考となる。即ち扁桃性起因のリウマチ、心疾患の扁桃は慢性単純性扁桃炎よりも球状が少なく、扁平型、懸垂型が多く咽喉内突出度は少ない。これに反し腎炎と微熱では球状型は慢性単純性扁桃炎とはほぼ同頻度であるが、突出度は腎炎ではこれよりやや少ないが、病巣感染扁桃の中でも最も大きい。一般に慢性病巣性扁桃炎では体積重量共に腎扁桃で大きく、リウマチで小さく、微熱、心疾患扁桃はその中間であつて、於に特に慢性単純性扁桃炎より小さい傾向にある。これらの所見はImpelot試験成績や病理組織学的処見との一致を異付けられる。又扁桃細胞法で好酸球や形質細胞が多く認められる。

病巣診断としての一般的検査や誘導症状試験の成績は扁桃が現在もなお直接病巣作用を現わしている事の証左にはならない。又微熱により二次疾患の成立条件やその病巣を反映している状態である。これらの中には心電図やReminky反応の如く比較的信頼度の高い方法も含まれる。更に検査では、誘導試験としての意味はあっても診断的意義を与えるものは少ない。

一般的検査でその特徴をとらべ、慢性病巣性扁桃炎患者の血液像ではリンパ球増多が比較的多く、形質細胞の出現があり、赤血球も促進するものが多い。自律神経機能は自律神経機能亢進以外の乱れがあり、Thorako反応による急性皮膚機能を不全の多い傾向に終わる。血清乃至赤血球蛋白の変動ではWeltmann反応で陽性が多くAIの減少とγ-G1の増加、γ-M蛋白では蛋白部分のみや多い傾向がある。

誘導症候試験では筋疾患反応、アフレキス健廃起こり試験、Sludge及びReminky反応で発熱れ慢性病巣性扁桃炎に陽性頻度が多く、毛細血管拡張値で逆に低い値を示している。

局所病巣診断法では余記の扁桃処処以外に、囲室の細菌叢やはよりの溶液高の検出率が多く、剥離上皮ではCongoTに染まる死滅白血球が多発あり認められる。放射性アイソトープ3Pを用いた試験では扁桃実質内注射法よりも回室内流入法が信頼性が高く、局創に血管放射能が共に陽性に現われる場合、腎炎や微熱に高く、リウマチでは著しく低い。MethyleneblauやIndophenolによる扁桃色素反応は急性扁桃炎重大と慢性単純性扁桃炎との鑑別には意義が、慢性病巣性扁
粘膜下に丘疹を作るように注射する。この際注射後疼痛消失までの時間は3時間以内で、連続注射の場合は疼痛効果持続時間が結果しないことが陽性の重要な参考となる。なお本試験はイオントラシネムでも適用される。

一般に陽性発はHyaluronidase試験によりマツサージュ併用法、超短波照射にて扁桃摘出に直接陽性を示す。この場合Hyaluronidase試験ではマツサージュ法に抗し、体温は陽性15分後の0.5℃以上の上昇、帯発3時間後における白血球数1200以上の増加、赤沈中等値12mm以上の促進、尿中の蛋白、赤血球の出現増加に陽性と見做すことが妥当である。これに対し無刺激法では10分間照射で、体温0.4℃、白血球数1000赤沈値10mm以上の上昇、促進を陽性基準と考える。

扁桃マツサージュ法、扁桃抽出液の皮内反応、心電図観察、多少の副作用を伴うが、Pyrifer試験、Spenglersan試験に比べて少々発現する。

Anti-streptolysin反応は250単位に陽性基準をおき意義があるが、他の血球観察療法の関係は外できる扁桃摘出による力価上昇の場合を重視される。陽性発は、Weltmann反応、Remky反応、筋膜発、低周波発などリウマチ、腎炎内は意義がある。なお、Remky反応ではについてヒスタミンの10000倍稀釈、スポット1滴下法が良好である。*PP凹面探入試験も腎炎と深刻で腎病診断に利用できる。

側頭部白血球数の測定、Weltmann反応、心疾患における心電図、リウマチの筋膜発、及び血球数測定の測定では、特に扁桃の陽性発は打診による全身の変化あるいは筋膜発の動向とよぶ意義がある。

各種反応における検査項目では白血球数、赤沈は共通に重要であり、体温がこれに次ぐ。しかもこれら項目のうち2個以上陽性に応じた場合は、扁桃マツサージュ法や超短波発、放射線を用いる如く扁桃摘出に二次疾患が続出して治癒しておき、病果診断の意義は大きく扁桃の絶対適応となる。この他不連続リウマチ性疾患における腫瘍反応、腎炎の腫瘍、腎炎における体温、心疾患の心電図など二次疾患の主観的検査に相当する項目に重点をおかれなければならない。

以上の他Ganslmayer試験はリウマチで意義があり、アキレス腱圧迫試験、C反応性蛋白試験も多少の意味がある。なお扁桃染色陰性反応も参考となる。