

**A GENERAL PRACTITIONER'S OBSERVATIONS
ON THE MEDICAL INDICATIONS FOR AND THE
RESULTS OF TONSILLECTOMY WITH OBSERVATIONS
ON AND COMPARISONS OF ANAESTHETIC METHODS.**

By

F. R. WILSON

ProQuest Number: 13905428

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 13905428

Published by ProQuest LLC (2019). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

A General Practitioner's Observations on
the Medical Indications for and the Results
of Tonsillectomy with Observations on and
Comparisons of Anaesthetic Methods.

There has been a great prevalence of tonsillectomy operations, both in children and in adults since the year 1920. These operations have been advised frequently by physician consultants, and latterly by general practitioners, in many and diverse cases, and, apart from considerations of local discomfort, obstruction to breathing, recurrent sore throat, or repeated quinseys, have usually been recommended for conditions, whose direct connection with tonsillar changes and abnormalities it was difficult or impossible to establish directly.

The importance of the closed septic focus in relation to remote disorders of general health, became generally recognised after the war, and in many of the vaguer chronic illnesses in adults in the absence of definitely localising physical signs or symptoms, treatment of the teeth or tonsils - nearly always by removal - came to be very frequently recommended. These structures can be easily inspected and they are - perhaps unfortunately sometimes - easily accessible for purposes of removal.

The beneficial effects of removal of tonsils were sometimes most dramatic, and improvement and normality of health quickly resulted, but frequently, on the other hand, great disappointment both to the patient and to his medical adviser, followed, and the immediate improvement which occurred after the operation - an improvement no doubt owing to rest in bed and on holiday after operation, and to "faith and strong belief" on the part of doctor and patient, was not maintained.

The tonsils are much more obvious organs in childhood, being more or less enlarged as a general rule, particularly in children of the working class, for a reason which I shall discuss later. The proportion of good results obtained by tonsillectomy in adults, for conditions of anaemia, lassitude, rheumatism, and nutritional defects, led us in the years 1920 and following, to recommend tonsillectomy in children in very many cases, and often in cases where there was no very gross enlargement nor any visible unhealthiness, in the hope that we might improve the general condition of flabbiness, muscular laxity, pallor, lethargy and lack of staying power, from which many working class children suffer during the first part of school life. I think we had in the early nineteen twenties also, a hope that in tonsillectomy adopted as a matter more or less of

routine, in early school age, we had a means of preventing the occurrence of rheumatic affections in childhood, with their often dire results in later life. There has been, unfortunately, no proof that mass tonsillectomy during the years 1920-28, has diminished the incidence of rheumatic affections in childhood at all. Dr Poynton in his recent treatise on rheumatism says, "even the greatest enthusiasts cannot pretend that the operation is either a certain cure for rheumatism, or an infallible prophylactic measure, and they will have to confess, that in many instances, tonsillectomy has no influence on the course of the disease."

The reaction which has taken place in the minds of practitioners against operations for tonsillectomy without obvious cause, or as a prophylactic measure against rheumatism, and usually performed in children just when the lymphoid tissue of the pharynx and nasopharynx is undergoing a normal hypertrophy, and the child is acquiring its first immunity to catarrhal colds, has prompted me to write my experiences of indications for, and results of the operation. I have put them in the form of this thesis as those of a general practitioner who practiced for fifteen years in a catarrhal area between the sea and a waterway. a cold damp area, where winter fog was a commonplace. This area had two principal classes living in it, an industrial and agricultural class in one corner, and a

wealthy residential class in the other, the climatic conditions being the same in both areas, but conditions of diet and home life being quite different.

I had myself no skill in the operation, and all my poorer class cases were operated on in the out-patients department of a large provincial general hospital, while the wealthier cases were done in their own homes, or in one of the local nursing homes, by a laryngologist colleague. My opinions are therefore unbiassed by any personal leanings towards the operation, and my duties to my cases were observation before and after operation and the administration of the necessary general anaesthetics to the cases in private. The family medical attendant has, naturally, great opportunity for general survey of the cases from the point of view of general health in the patient and his family, of the influence of type, temperament, diet, and mode of life upon the incidence of tonsillar affections, and of the effects of the operation upon subacute and chronic rheumatic illness in his patients. In 1920, after a few favourable results, I was enthusiastic for the operation, but gradually I became convinced that in tonsillectomy we had not the panacea for all the catarrhal developmental and rheumatic illnesses of children and young adults, which I had hoped, and even believed, and slowly became more conservative in advising it. The operation became

fashionable very rapidly and the accommodation for the cases in provincial hospitals was, in 1920, very inadequate. The departments were small, and with the fashion for recommending the operation ever increasing, they became much overtaxed, harried, and hurried, on operating days, and their tonsillectomy cases were treated as out-patients, in the full sense of the term, being prepared at home, operated on in the out-patients department, and sent home again, as soon as they had recovered from the anaesthetic, there being no recovery beds in a good many of the hospitals. There had not been time to consider the purely medical side of tonsillectomy operations, enlargement of greater or less degree and the family doctor's recommendation being almost the only criteria for operation. This state of things no longer exists of course, in provincial hospitals, but it is a significant fact that, as the organisation for dealing with more cases in the ear and throat departments has been perfected, and as the care and attention has increased, the number of cases recommended for operation seems to have much diminished. I cannot think that this is due to any striking improvement in health and resistance on the part of the public; it must I think be that we are seeing the error of our ways in recommending wholesale tonsillectomy as we did a dozen years ago, and taking a saner view of tonsillar enlarge-

ment, regarding it as a result of metabolic illness more often than a cause of disease *in children*.

I am sure that in the years 1920 to 1925, I often advised the operation too quickly, and without adequate consideration of the general health, and questions of diet, clothing, vitamin or calcium deficiency, or enquiry into the home life, with regard to fresh air and ventilation, particularly during the hours of sleep.

One was tempted, in the rush and scurry of general practice, to accept the fact of a tonsillar hyperplasia as being the cause of vague illness in a child, sometimes without adequate physical examination and enquiry. In 1921 I was consulted by a mother about her child aet 5½ years. The history was that the child had contracted a severe cold some weeks before, which refused to clear up, and that on one or two occasions there had been moderately severe nose bleedings. The child had hyperplastic tonsils, some post-nasal obstruction and nasal discharge, and was pale and flabby. The glands in the anterior and posterior triangles of the neck were moderately enlarged, but little tender. I was on the point of dismissing the case as one of ordinary tonsillar hyperplasia with adenoids and recommending operation, but found a temperature of 100°F. and for that reason stripped the child for examination of her

chest, still having no suspicion that I was dealing with anything more than a slight catarrh secondary to the tonsillar and adenoid enlargement. I found enlarged glands in the axillae and groins, an enlarged liver and a palpable spleen. The child was sent to the pathologist instead of to the laryngologist, and a blood picture of lymphatic leukemia was found on examination. This child died in a few weeks. It is conceivable, that had she been sent up for operation under the conditions obtaining in that year, tonsillectomy would have been done, and the result would have been disaster.

This case led me to take very great care in future with regard to physical examination and history before recommending operation, and I gradually became more and more convinced that tonsillar hypertrophy in children was often a result of a faulty state of general health rather than a cause of it. The operation too, particularly the operation by dissection, is by no means a trifling one; it can give rise to serious happenings both during and after, and should not be undertaken too lightly. One's desire to cure one's patient quickly and dramatically, by some definite surgical step led often to most disappointing results.

It was the fashion amongst my wealthier patients in the early nineteen twenties, to have their children tonsillectomised, because the other children who were in the same school

had had the operation and the school authorities were good enough to suggest in some cases, that the operation should be done, probably with a view to limiting catarrhal and infectious illness amongst the pupils. The results of these operations were not convincing, and the amount of my attendance on these children during their holidays, for catarrhal affections and the occurrence of scarlet fever and measles amongst them, did not appear to be lessened. Drs Glover and Wilson, in their paper in B.M.J. Sept.10, 1932, gave statistics to prove that prophylactic tonsillectomy did not increase the herd immunity of a public school, or preparatory school to naso-pharyngitis or otitis, and they instanced disturbing facts with regard to prophylactic tonsillectomy, which they stated was four times as common in the children of the well-to-do, as it was amongst the poor. I cannot say that this was my experience in practice, and if true, it would suggest a professional immorality in recommending and performing the operation, which one would be reluctant to ascribe to either the practitioner or the consultant.

There is no doubt that the operation in carefully selected cases is dramatic in its restoration of good health, but like all successful things it has been used too often and often without caution and discretion, and its reputation has suffered somewhat, in consequence, during the past few years.

The tonsillar abnormalities seen by the general practitioner fall into two main classes:

I. The hyperplastic tonsil

II. The septic tonsil.

I. The principal feature of this variety is enlargement due to overgrowth of the lymphoid tissue of the tonsils. This condition of hyperplasia is entirely confined to children and occurs between the ages of four and ten years, with its zenith about $6\frac{1}{2}$ years. I think that an enlargement of the lymphoid Peyer's patches in the ileum and of the solitary glands in the large and small intestines has been described as occurring normally about the same age, which would suggest that lymphoid hypertrophy is a physiological happening in the child at that period. A gradual diminution in size usually takes place from 7 years onwards, and the enlargement has disappeared by the age of fifteen years. (The enlarged tonsil in adults is always a septic one).

The tonsils project more or less between the pillars of the fauces, or at any rate bulge the anterior pillars noticeably when one tickles the pharyngeal wall. There is often nasal obstruction of a greater or less degree due to adenoid hyperplasia in the nasopharynx, and there may be an increased liability to colds in the head and chest. Mouth breathing is often present,

although this is seen in the absence of nasal obstruction, being partly habitual, and partly due to the child's poor physical condition and diminished lung capacity, the result of its home conditions. The teeth as a result of defective nutrition and mouth breathing, are frequently decayed. There is in these cases, little or no redness of the fauces or pharynx, and the child is pale and flabby, frequently quite fat, but dull and lethargic. These children, when they catch cold, are apt to develop enlarged glands in the anterior triangle of the neck, which disappear on recovery. I found this hyperplastic enlargement of tonsils most often in children of the rather better off working class, frequently where there were several children in the family, and where, although feeding was ample in quantity, it was defective in balance owing to circumstances of household economy. It was much more seldom that one found cases amongst the very poor, and it may be that the struggle for existence raises the defensive powers of these children, and prevents the occurrence of the hyperplasia or renders it unnecessary. It was uncommon also in the well to do.

On enquiry into the mode of life one found that the diet was plentiful, but that the staple articles were carbohydrate and fat, the first enjoyed and liked by the child, the

second presented in such forms as to be unpalatable and certainly poor in vitamin A, that there was little or no first class protein in the food and that calcium and vitamins A and D were small in amount or lacking.

It seems that a diet which would nearly, but not quite produce rickets, would favour the development of tonsillar hyperplasia. This diet was as a rule a reflection of the financial condition of the household, the mother being forced to buy the cheapest foodstuffs she could, which had a high nutritive value, and concentrating therefore on the carbohydrates, leaving the proteins almost alone, and cutting down the milk, butter and eggs, and replacing with condensed milk and margarine, both poor in vitamin A.

The mother of a household of this class is careful, but as a rule ignorant in matters of health, and she notices that the children fed in the above fashion are prone to catch cold. She therefore protects them by wrapping them in many layers of woollen clothing and by keeping their sleeping rooms, usually occupied by several persons, hermetically sealed at night. There is no doubt that the rebreathing of vitiated air at night, has also a large bearing on the occurrence of repeated colds, and resulting tonsillar and adenoid hyperplasia. The carbohydrate diet and deficiency of protein and vitamins, makes the children lethargic, inactive and slows their circulations. The over-

clothing by day and night increases this inactivity, lowers their sympathetic tone and they are not impelled to take exercise, as they would if they were more lightly clothed. The skin is rendered inactive and its excretory functions diminished, and the comparative bodily inactivity and large carbohydrate diet, induce a constipation, which also leads to the locking up of toxic substances and their reabsorption.

As a result of this mode of life, and the causes I have tried to describe, the liability to infection is increased, and resistance lowered, the circum-pharyngeal ring of lymphoid tissue hypertrophies in trying to repel the invading organisms, and the tonsils and adenoids undergo hyperplastic enlargement.

In mentioning the lack of necessary vitamins and food factors having a bearing on tonsillar hyperplasia I would like to lay stress on the relative absence of first class protein from the diet of children of the working class. There is of course, the question of expense which helps to influence this absence, but there is I found a belief that it is a wrong thing to give protein to a very young child, and definitely harmful to its digestion, and likely to adversely influence its growth and development. I am convinced that increase of the first class protein content of the food of the working man's child, from the age of nine months, would be an important factor in diminishing hyperplasia.

The eating of soft pappy food up to the age of three years is one of the causes of the dental decay one sees in these cases, and combined with mouth breathing will cause the teeth to suffer in nearly all the cases.

It is undoubted that where hyperplastic enlargement is sufficient to seriously impede respiration and chest expansion, removal must be undertaken, in order to give the developing child a more open and efficient airway, and to prevent the shrunken nose, flat chest, round shoulders and kyphotic spine, which are apt to occur in any case of prolonged obstruction to breathing in a child growing and developing. I do not think it follows, however, that all cases of tonsillar hypertrophy, and adenoid overgrowth, have to be operated upon necessarily; something can be done for them even when enlargement is present, and if undertaken early, prophylactic treatment can certainly diminish or prevent the occurrence of hyperplasia. The removal of the determining factors of hyperplasia, will do much to diminish the enlargement if already present, but the secret of reducing the number of ones tonsillar operations is to begin to conduct one's reforms of life from infancy.

In 1928, 1929 and 1930 I treated a number of cases prophylactically, in families where tonsillectomy for gross midline obstruction had had to be done on previous children, and where the parents, through their past experiences of the

worry and cost of surgical intervention, were prepared to take all the precautions necessary to avoid it.

The method I used was very simple; I commenced prophylaxis very early - about the age of three months. I gave all the children cod liver oil from that time or radiostoleum in cases where the cod liver oil was not well borne. I limited the amount of thick woollen clothing, substituting loose and loosely knitted woollen garments of a permeable character. I advised generous ventilation of sleeping rooms, and a separate bed or cot for the child - avoiding too much covering - and limited the number of people sleeping in the same room. I advised the exposure of the children to fresh air during as much of every day as climatic conditions would allow, and to short exposures to morning sunlight of the whole body, on every possible day. These exposures were tempered by shade in very hot weather, and were never longer than ten to fifteen minutes in any one day. I introduced cream into the diet early, limited the amount of carbohydrate in all cases and gave every case a fairly generous supply of protein, in the form of lightly boiled egg, from eight months. I also gave small doses of dry thyroid gland from the age of twelve months - $\frac{1}{8}$ gr. twice daily - ; this I gave for four weeks with a rest of two weeks and recommenced.

I found in all cases that there was no development of gross hyperplasia, and that in families where tonsillectomy had

had to be done, for gross midline obstruction in the years 1922-24-26, the children treated in 1928-29 had not developed any gross enlargement of tonsils or adenoids by 1933-34, and that in none of my prophylactically treated children, did liability to colds, bronchitis and otitis occur, as had been the case in the previous untreated children of the same families, who had had to have the operation.

This prophylaxis can easily be done by the mothers if they are earnest about it and the cases of gross enlargement are more often the result of ignorance on the part of the parents, of the factors causing the condition, and of prejudice, ~~rather~~ than of carelessness. In view of the fact that the diet of nursing mothers of the working class is deficient in vitamins A and D it would be well to treat the mothers by cod liver oil or radiostoleum during the nursing period.

Laryngological surgery has been doing for the past fifteen years, in cases of tonsillar hyperplasia, very much what general surgery was doing thirty years ago for bone and gland tubercle. It is dealing with gross enlargement of tonsils which is preventable, and when careful supervision of the child from infancy becomes more the rule and preventive medicine comes into its own, a case of tonsillar hyperplasia requiring operation may become as great a rarity as a case of bone tubercle has become to-day. Thirty years ago, a considerable part of each

session was given up to teaching on gland and bone tubercle, and the operating theatres were full of cases; to-day it is almost a thing of the past, and tonsillar hyperplasia, in the presence of preventive measures employed from infancy, will, I think, follow it before long.

The enlargement and overgrowth of the lymphoid tissue of the pharynx is Nature's reaction to repeated infections, and her attempt to protect her badly nourished, readily infected, and more or less defenceless child, from organisms. It would seem poor medicine to recommend the removal of the very defences she is trying to build, instead of by increasing resisting power to render their building unnecessary. It is a significant fact that the operation for the removal of hyperplastic tonsils is very frequently followed by hypertrophy of the lower part of the circum-pharyngeal ring of lymphoid tissue; I mean the so-called lingual tonsils. This suggests that nature is trying to rebuild, from the only remains left to her after the operator has finished, the protective structures he has removed.

I have omitted to mention the important work which the dentist can do to remedy or minimize tonsillar hyperplasia. The removal of septic teeth takes a reservoir of infection from the neighbourhood of the tonsil, and the beneficent effect of the dentist's work is undoubted. The frequent colds and bronchial affections associated with ^{hyperplastic} tonsillar enlargements,

are perhaps mainly, but certainly partly, due to untreated dental sepsis. The objection to removing first teeth should not apply if they are septic. The removal of hyperplastic adenoid growths alone, leaving the tonsils, may in some cases diminish tonsillar enlargement, although my laryngologist colleague maintained stoutly that such an operation was inefficient and incomplete. I found, however, in cases of persistent ear discharge in the infant, associated with nasal discharge and obstruction, that removal of adenoids alone was efficient in clearing up the ear discharge in all of my cases, and that recurrence of ^{tonsils and} adenoids, requiring subsequent removal, did not occur in the presence of prophylactic measures.

II. The septic tonsil.

This type of tonsil is seen both in children and in adults, and is usually the result of repeated attacks of tonsillitis mild or severe. The patients come complaining of "growing pains", chorea, anaemia, lassitude, palpitation, skin affections, and a multitude of remote toxic effects. They may be cases of frank rheumatism, or one's attention may be drawn to the tonsils by history of repeated attacks of sore throat, although this last has not in my experience been a frequent complaint.

The tonsils are often not much enlarged, nor are they accompanied by gross obstructive signs in the throat or naso-

pharynx, but it is often possible to express foul smelling, liquid discharge from them, and in cases which call for surgical attention, there is a purplish red colour of the anterior pillars of the fauces, which is persistent in spite of local treatment, and typical of chronic infection.

This appearance is more noticeable in the adult, but is present in the child also, when repeated infections have made the tonsil a reservoir of organisms. In children it is usually discovered at a later date than hyperplasia, and there is frequently the history that at the age of four ^{To} ~~at~~ six there were no throat symptoms, but that they appeared ^{later} after a cold or sore throat, or after measles or scarlet fever. This purplish red colour is always associated with chronic deep infection, and the tonsil in these cases is a closed septic focus, and a potential fountain-head of infection, and should be removed if the condition of the general health will permit, and if there are no symptoms suggesting that organismal blood infection has already occurred.

The remote symptoms of tonsillar sepsis are always more severe and noticeable than the local symptoms; in fact the patient may not realise that there is anything wrong with the tonsils, as beyond dryness and slight occasional sore throat he has no local trouble. It is difficult, in the presence of remote illness, such as anaemia, palpitation, lassitude,

nephritis, or some chronic skin eruption to convince the patient - or sometimes even to convince oneself - that removal of tonsils is necessary, and even when one feels sure that benefit will result, it is never advisable to press for the operation too much, but rather to put the probability of improvement to one's patient, and let him make his own decision.

I found remote results of tonsillar sepsis to fall into three types, or perhaps more correctly, into two main types and one subtype.

I. Where there is remote illness due to toxic absorption but where organismal blood infection is apparently absent. Tonsillectomy in these cases is indicated, and will be more or less beneficial in all cases. I have always described these mentally to myself, as the sapraemic cases; the term is perhaps old-fashioned, but it is explanatory and contrastive with the other types. The remote expressions of the toxic absorption may take the form of anaemia, subacute nephritis, tachycardia, subacute or chronic eczemas, and subacute or chronic fibrocytic rheumatism. There is frequently tiredness and lassitude, and in some cases I believe - although I have myself never seen a case - mental impairment of a melancholic character. I had, however, an interesting case of what I took to be

pynkolepsy, where there were almost numberless daily fits in a boy of eight - fits of the type of petit mal - which went on for two months to the great alarm of his parents and which ceased dramatically as soon as tonsillectomy was performed. No doubt the condition would have ceased sooner or later without the operation, as the authorities say it always does, but the sudden cessation, after operation, seemed to me almost to prove the case. There was in this case a history of liability to slight sore throat and there was redness of the anterior pillars. The fibrocystic rheumatism which frequently results from this type is not of a fleeting character, or not of such a fleeting character as that in type II, and the temperature morning or evening seems never to be raised in the course of the illness. I think this last is a point of great importance, and that it affords the most certain means of determining type I from the other types.

Type II.

In this type there is an acute or subacute organismal infection of the blood stream; the septicaemic type. Removal of tonsils in these cases leads to a flare up of remote symptoms and, while it removes the fountain-head, opens up many channels for possible reinforcement of the blood infection, or addition of a mixed one. These cases are frequently of a definitely rheumatic type, may be muscular, arthritic, or choreic

and may have physical signs of cardiac involvement, usually in the form of an increased rate with a murmur. The general symptoms are more severe than those of type I, there is more pallor and anaemia, more flitting from place to place of the pains, and a greater tendency for pains and swellings to attack the joints. There is always, if temperature is taken morning and evening for a period of a fortnight or three weeks, a rise usually in the evening, to above 99°F.; this rise may persist for a night or two and then cease, is not constant except in the more acute cases, and is of course higher, lower, more constant, or less constant, according to the virulence of the infection. No one would be anxious to operate on a case of acute rheumatic fever, even if one were convinced that the seat of original infection was in the tonsils, but cases of this type II of mine, when the symptoms are not very acute, have been operated on frequently in the past. If tonsillectomy is done in a case of type II without waiting for attenuation of the infection to take place, and treating and building up the patients reserves of resistance, the results are usually disappointing, and may be disastrous. The existing rheumatic condition flares up more acutely, and in my own experience, an attack of vague rheumatism with occasional evening temperature, has been transformed into an attack of acute rheumatic fever, and in one instance into an acute endocarditis by ill-advised

tonsillectomy recommended by me.

After equivocal, and latterly after one or two very bad results of tonsillectomy in the milder cases of type II, I treated all cases of this kind by prolonged rest in bed, by large doses of citrate of Iron and Ammonia, latterly with a trace of Copper Sulphate, and by increasing the vitamin A content of their food by Cod liver oil, cream and "Avoileum" (BDH). Green and Mellanby in their paper in B.M.J., Feb.1928, suggested absence of vitamin A from the food as being an important factor in the occurrence of subacute and acute rheumatism, and it should, if absent from the food, be replaced, even if only as a general tonic measure, where expectant treatment is being carried out. Being absent from lard, margarine, and white bread, its artificial addition to the diet of a working class household would seem very necessary. I never advised tonsillectomy in my later cases, until the patient had been free from all signs and symptoms of rheumatism for six months, and preferred twelve months if possible. Salicylates appeared to do little permanent good in the subacute mild cases, and the digestion suffered by their prolonged administration. The cases of type II have been more common in my experience in adolescents and children, while type I was more often found by me in adults; resistance to blood infection or active immunity is probably higher in the adult.

Type III. Very chronic septicaemic infection.

This is more properly a sub-division of type II. It is almost impossible to make sure of it clinically, and as similar conditions can occur as a result of general infection from other septic foci besides the tonsils, greater care must be taken in examination of these organs, and greater caution observed if tonsillar sepsis is present, in advising operation. It may be that in a good many cases, the tonsil is the first septic focus to be present, but its removal, if other reservoirs of sepsis have developed gives nothing but disappointing results. The patients are mostly in the last half of life and the remote conditions from which they suffer, are usually very chronic muscle sheath rheumatism, with great stiffness or very chronic arthritis, usually beginning in the smaller joints, - really a rheumatoid arthritis. I firmly believe that these cases are cases of very chronic organismal blood infection, and my experience of tonsillectomy in six cases, all of which had the clinical signs of tonsillar sepsis, and all of which were done during my period of enthusiasm for the operation, viz. between 1920 and 1927, was so generally unfortunate, that I gave up all thought of operation in such cases. The operation to anyone over fifty years old is a severe ordeal, particularly as it frequently is an operation of dissection, and the slight improvement which appears to take place after the operation, an

improvement probably more truly due to the rest in bed of two or three weeks, is not maintained.

The difficulty of clinically identifying a remote toxic absorption or chronic sapraemia from a chronic organismal blood infection and the consequent recommending of tonsillectomy in the latter type as well as in the former, is I think, one explanation of the alternatively brilliant and disappointing results obtained by the operation in patients in later life.

I have in the course of practice given much thought to clinical means by which I could identify type III from type I, but have never succeeded in finding any certain method.

I have been impressed, however, by the fact in my own practice that the risk of operation can be taken in a chronic fibrocytis, without joint symptoms, with a little more hope of improvement, than in the cases which shew chronic joint changes; it is possible that the chronically infected joints themselves in these cases, are the closed septic foci, which lead to the dissemination of the disease. I shall try to illustrate my points with regard to types by quoting a few of my cases.

(a) A Case of remote symptoms from toxic absorption or sapraemia.

I.C., female, aet 42 years. Had suffered for six years from a chronic seborrhoeic eczema of the face and head, groins,

eyebrows and backs of the ears, continually flaring up and settling down, but never disappearing. Had visited many dermatologists and had had lengthy and varied treatments, including courses of X-ray application, and all the stimulant and sedative applications which could be suggested, with careful treatment also by dieting. The results were practically nil. She had had her hair cut close for four years and was unable to take any part in social life, because of her disability. She had chronic purplish red discoloration of the anterior pillars with small buried tonsils, from which one could express foul smelling greyish fluid. The question of tonsillectomy was discussed, and while one did not promise cure as a result, and had to leave the decision largely to the patient herself, she ultimately decided to have the operation. Tonsillectomy was done in January 1927, and in three months her skin was normal, except for extreme sensitiveness to heat and sunlight, and her hair could be allowed to grow. There was no gross recurrence up to 1934, although she still had to be careful of exposure, and her appearance after June 1927 was normal.

(b) Another toxæmia or sapraemia.

J.W., female, æt 26 years. She reported suffering from headache, tiredness, breathlessness, and swelling of the feet, legs and eyelids. Anaemic. Urine dark and loaded with albumin.

She was put to bed and treated as a case of acute nephritis. She was in bed for three months, on a diet of milk and glucose lemonade for a month, and later on a mild salt free diet. She improved in health, but after three months in bed she continued to show an albuminous urine, varying from a haze to a cloud, from week to week. This persisted for many weeks after her apparent recovery, and I began to think her a case of what is, I think, described by the text-books as "recovery with albuminuria." There never was during her illness, a sore throat, or any symptoms suggesting a tonsillar condition, but on one occasion when I called on her, and we were discussing the undue length of her convalescence, she mentioned the fact of her having had a slight sore throat three or four weeks before the occurrence of her illness; this she had not thought worth mentioning. She showed redness of the anterior pillars and on pressure her tonsils exuded foul smelling liquid. Tonsillectomy was done almost at once, and the albuminuria had completely disappeared three weeks after the operation.

(c) A chronic organismal infection.

F.M'K., a medical man and a relative of my own, aet 57. For six years had suffered from chronic muscle sheath rheumatism affecting back and shoulders and from recurrent attacks of acute lumbago. His limb joints were normal and showed no swelling or limitation of movement. He had had "cures" at Harrogate,

Droitwich and Bath, and on his return from his cure at Bath in 1930, broke his journey at my home, because of an attack of rheumatism which crippled him. He was in bed with a little temperature for a week, and the condition improved under Salicylates and Novargin. He had enlarged and obviously septic tonsils with gross discharge and redness of the anterior pillars - tonsils which should have been removed long before, - as their sepsis was so obvious. I was very doubtful, in the circumstances of temperature and of his age, as to operation, but got my laryngologist colleague to see him, and we removed his tonsils, almost against his will. There was a flare-up of his rheumatism after the operation, and he was in bed for a month; he went home disappointed and disgruntled and I did not hear from him for some time. Twelve months after the operation he visited me again, and the improvement in his symptoms was noticeable, but it was at least two years before he became normal, and he will not admit - although I am convinced of it - that the tonsillectomy was the cause of his cure. He has had no subsequent treatment, spa or otherwise.

Although this case was successful - more by good luck than good guidance - it emphasised in my mind the fact that tonsillectomy may be dangerous in chronic rheumatic septicaemia, and that improvement, if one is lucky enough to get it, takes place very slowly. The circumstances influencing decision for

operation, were the absence of demonstrable joint affection, and the extreme local septic condition present; also the fact that he would have been before long a confirmed invalid, through his rheumatism. It would have been better treatment to have waited and kept him at rest in bed for a few months under treatment, but this was economically impossible in his case.

(d) A subacute septicaemia.

J.H., aet 12 years. Female. Was attended first in 1922. She suffered from an acute attack of tonsillitis followed by acute rheumatism. Her temperature was never high, 100°F.-101°F., but her joint symptoms of swelling and tenderness were very definite. She was kept in bed, but developed a mitral systolic murmur about the third week of her illness. Everything seemed to settle down, even the mitral murmur almost disappearing, and after three months in bed she was allowed to move about gently. She remained anaemic and had small evening temperatures occasionally, 99.2°F. to 99.6°F. Her tonsils were small, but the anterior pillars were deep purplish red, and I foolishly decided that removal was indicated. She had her tonsils removed five months after the original attack. Her rheumatism flared up in the joints within a few days, and the cardiac murmur became more noticeable. She developed petccial spots, albuminuria and haematuria, and died, after an illness of about ten weeks. I think I ought to have waited, in the presence of the

temperatures, and that I might have prevented this disaster by being less meddlesome.

(e) Mrs J.W.J., aet 58 years. Was crippled by rheumatoid arthritis in feet, hands, knees and spinal joints. Thin, and had become a diet fiend from much visiting of spas. Had been to every spa in England without benefit. Had had all her teeth extracted. I first saw her in 1922 for the purpose of giving her an injection of a vaccine prepared ^{from} ~~for~~ her tooth sockets by a pathologist. I found that she had small buried tonsils with marked redness of the anterior pillars, and with a history of frequent attacks of tonsillitis between 20 and 35 years *of age*. I sent her to my laryngologist colleague who agreed that her tonsils were septic, and who suggested removal. She was operated on in her own home, and we had a very trying half-hour through severe and continued haemorrhage. She was in bed a month, and there was a slight amelioration of symptoms without any flaring up, but her joint swelling increased again on getting up, and she has slowly become less and less active, until in 1933 she was practically a chronic invalid, and cripple. This, I think, is an example of an apparently simple and easy septic focus, with chronic blood infection and the real cause lay much deeper. Perhaps had she had the operation at 25 years instead of 58 years her history might have been different, and it is possible

that her tonsillar focus may have been her primary one, but her load of infection was too great, and her septic foci no doubt had multiplied during the years. This case was typical of my results in the few cases I had of tonsillectomy in chronic rheumatoid arthritis, and I became convinced that tonsils, if found septic in this disease, are best left alone.

The general conclusions I have drawn from these and other cases during the past fifteen years of practice, are that where remote symptoms, for which no other cause can be found, are present, along with tonsillar sepsis, removal should be undertaken, but that the presence of joint rheumatism, chorea, carditis, or of fluctuations of temperature in the course of the illness, should negative operation, as their presence suggests organismal blood infection. In these cases a lengthy period of rest in bed and treatment directed to building up the patient's power of resistance, should be undertaken before operation is thought of. The lack of careful hesitation in advising the operation in rheumatic cases is one of the causes of the conflicting results obtained.

There is one condition in children and young adults which I have not mentioned, but which is found, and has to be advised upon, by all general practitioners. I mean the

tubercular tonsil. One's advice is sought as a rule because of the painless gland enlargement in the neck, which occurs secondarily to the invasion of the tonsil by the tubercle bacillus. This is a condition for which preventive medicine has still much to do, and is in nearly all cases a result of infection from cow's milk. The glands may disappear after a long period of medical treatment by a fresh air life, cod liver oil, and the exhibition of tonics, but the removal of the cause of infection, by boiling or pasturization of all milk consumed, is easy, and if generally employed, would stop the incidence of the condition almost completely.

I found that when one adopted tonsillectomy as treatment, in the presence of tubercular glands in the neck, one of two things happened. In the first case the glands were apparently unaffected by the operation and required 12-18 months of treatment of general health before disappearing, and in the second, the operation seemed to determine softening and suppuration and one had a gland abscess to deal with a few weeks after the tonsillectomy.

I found the best method to be to ignore the tonsils, to treat the glands by medical measures, and to recommend surgical treatment to the glands only, when medical measures failed after 12 months, or if caseation threatened. A great

deal has still to be done by milk suppliers to make milk fit for human consumption, and in the meantime, I am sure that all milk used, whether Grade A or no, should be boiled before being consumed. This would no doubt lessen incidence of tonsillar sepsis also, in the infant and adolescent, as cow's milk has a very high bacterial content apart from the tubercle bacillus. The loss of vitamins A and C from boiling of milk can be made up artificially and the sterilisation is so important that it should always be undertaken even in the presence of vitamin loss.

I have given many anaesthetics to children and adults for the operation of tonsillectomy, at their homes and in the local nursing homes, and have had experience of medical results of both the guillotine operation and of the operation by deliberate dissection. Between 1919 and 1925 the guillotine operation was favoured by my colleague, and its expert use in enucleation by laryngologists was the first step in taking tonsillectomy out of the hands of the general practitioner. The operation was a very short one, and no attempt at direct haemostasis was made. The anaesthetic I used for the guillotine cases was invariably C.E. mixture preceded by atropine gr. $\frac{1}{120}$ for a child of five years or $\frac{1}{75}$ for an adult. My colleague's method was to pull the anaesthetised patient up the operating table and to allow the head to hang downwards over the edge of

it extending the neck fully. The operation took two to two and a half minutes, including the removal of adenoids and the patient's nose and nasopharynx were full of blood by the time the operation ^{OR} had finished; but the position was such that no blood was inhaled, the excess being blown out of the nose by expiration. As soon as the operation was completed the ~~patient's~~ face and neck were sponged freely with cold water, and the patient pulled down the table again, the reflex vasoconstriction by the cold water being sufficient to control haemorrhage, and the rapid return of the cough reflex obviating the inhalation of blood.

This operation was not a pretty one, but there were never any pulmonary complications following it due to inhalation of blood or portions of adenoids, in any of my cases. There was occasionally ear-ache for 24-48 hours after the operation, but this was never severe. I think that the fact of this being the operation performed in the out-patients department in hospital, in the years 1919 to 1925, when cases were sent home immediately after operation, explains my fortunate immunity from lung complications in my poorer patients during these years. The anaesthetic employed in hospital at that time was Nitrous oxide, with of course, very rapid recovery from the anaesthetic and rapid restoration of the cough reflex.

The method of anaesthesia adopted later, when deliberate

dissection was carried out, was of necessity a more complicated one.

I used a rectal injection of Paraldehyde one drachm per stone of body weight with a maximum of $3\frac{1}{2}$ dr. for children up to ten years. This was given $1\frac{1}{2}$ hours before operation in ten times its bulk of normal saline, and the inhalation anaesthetic I used was first, open ether, till deeply under, and then oxygen bubbled through a Woulfe's bottle containing warmed ether and given through an oral tube. The operation in these cases took fifteen minutes or longer, and the anaesthesia was much deeper than that for the guillotine operation. The patient's position was different in the dissection operation; he was in the dorsal position on the table, with the head and body almost in a straight line, except for a small pillow under the shoulders.

In these dissection cases I had on several occasions bronchitis following the operation, and in two cases bronchopneumonia, both cases fortunately recovering, but leaving a certain feeling of doubt and insecurity with regard to the dissection operation. One noticed during the operation, that the breathing was shallower and the expansion of the bases of the lungs poorer than during the guillotine operation, recovery from the anaesthetic was of course slower, and the cough reflex

much longer in returning.

I think it was these factors of slow recovery, shallow breathing, and the lack of full extension of the neck causing inhalation of a little blood, probably, which determined the occurrence of my complications. I cannot help thinking that, in spite of the surgeon's preference for a precise operation with deliberate, direct haemostasis, there is much to be said in favour of the older guillotine operation in expert hands, and conducted as I have described.

This is particularly true in children, but also in adults, particularly in heavy cigarette smokers who have frequently some bronchial catarrh to begin with. The effect of Atropine as a premedication in all cases seems to be good, but it should be in a full dose up to $\frac{1}{75}$ gr. for an adult. There are, of course, cases where dissection is the only possible operation, for example cases where there have been repeated quinsys, or where only partial removal has been previously done, but the guillotine operation has still much to be said in its favour from a purely medical point of view. The introduction of inhalation of CO₂ to cause thorough ventilation of the lungs after operation, will no doubt minimize the risk of post-operative lung complications, but my experience of its use has been a short one, and in cases where it has been used, its use

was only for a very short time, while the patient was still on the operating table. The effect is transient, and to be really efficient it seems to me that it should be continued after the anaesthetic until the patient is conscious.

I would point out that any criticisms of the respective operative methods, of which I have been guilty, are criticisms purely on medical grounds, as I have not sufficient knowledge and experience of the manual part of the operation to make my opinion of any value.

I think it may be, however, that the apparent neatness and precision of the dissection operation have influenced the minds of the surgeons in its favour, and that they have perhaps not taken into account to their fullest extent, the possible complications of it.

Speaking purely as the practitioner who has subsequent charge of the cases, I have always been much easier in my mind after the guillotine operation, than after the dissection one, and have found the patients always to be better the day after operation, and to make a more rapid recovery after the guillotine operation well done, than after slow dissection.

The depth & protraction of the anaesthesia seem to be the points against dissection & the use of arsenic which is common in these cases would not remove the dangers of shallow breathing and slow recovery which are common to all types of deep anaesthesia.