*The Psychiatric Patient, Problems of Management.

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IT is scarcely correct to designate the following presentation as a paper. What the authors intend doing is to review some of the common difficulties that arise in the every day management of psychiatric patients. They do not intend discussing technical treatment procedures, rather they wish to draw to the attention of the profession certain ways of handling psychiatric patients which are helpful or the reverse to the psychiatrist who eventually has to assume responsibility for that particular patient. Day after day in private practice in the City of Halifax patients are referred from doctors throughout the province in a way which makes the disposal of that patient difficult and which frequently colors the whole future relationship of the patient with the psychiatrist. The same thing applies to the reception of patients in the Nova Scotia Hospital. Frequently they arrive at hospital so suspicious because of previous handling that it takes days or weeks to get their confidence to a point where anything can be done to help them. Apart from this question of forming a good relationship with the psychiatric patient, the psychiatrist frequently finds himself in a well nigh insoluable situation because patients have been dumped on him without there being any possibility of going through the necessary legal procedures to have the patient looked after. Therefore in this paper we are endeavouring to point out some of the necessary legal formalities in the treatment of psychiatric patients and the ways in which they can best be handled so that they can most profit by their contact with a psychiatrist.

Before entering the discussion of actual situations, I should like to take a few minutes to outline the essentials of all psychiatric treatment. With the introduction of new physical methods of treatment doctors are tending to think of psychiatric treatment in terms of insulin or convulsive shock therapy or of fever. While these methods have proved of value in certain cases and in some previously intractable types of illness have indeed proven revolutionary, a very small percentage of psychiatric patients are of a type which respond to these physical methods of treatment. In our clinic only about 10% of all patients seen are thought suitable for such treatments. The huge bulk of psychiatric patients develop their sickness for psychological reasons; because of worries and strains and emotional tensions which finally go to the point of mental breakdown. These are the cases we call "nervous" or neurotic and they do not respond to physical treatments. Psychotherapy, which consists in a detailed analysis of the patient's problems with the patient himself recognizing and discussing these problems and working out some type of satisfactory solution for himself is the only rational treatment in such disturbances. I should like to emphasize that this is not a matter of somebody giving advice

*Paper presented at the annual meeting of The Medical Society of Nova Scotia, Kentville, N. S. October 12, 1945.

to the patient, but is a matter of the patient being assisted to see his own problems and arrive at some solution for himself. Psychotherapy is, at the present moment, the only method of treatment for the neurotic patient. Even in the psychotic cases which will respond to shock treatments, it is generally necessary if the patient is to maintain his improvement—indeed one of the greatest values of such treatments is that they make the patient accessible to psychotherapy. It is therefore necessary to examine the factors making for successful psychotherapy. I think it would be generally maintained by any of the modern schools of psychiatric thought that the most important factor in psychotherapy is the relationship between the doctor and the patient. The patient is able to face his problems, and to work out some solution to them which he can then put into concrete action when his relationship with his doctor is one of trust and respect and one from which he receives courage to struggle harder. Therefore the most important thing to preserve in contact with a psychiatric patient is this kind of relationship—anything damaging this relationship works against the patient's chance of getting help from the psychiatrist. It should hardly be necessary to point out that psychiatric patients are irrational sort of people—perhaps only a little more irrational than most people—but still irrational. One of their greatest irrationalities is the development of attitudes in one situation which then color any similar situation which arises. If one doctor does something which causes distrust the patient will carry that attitude of suspiciousness and lack of confidence towards doctors in his future contacts with other members of the profession. There is no such thing in dealing with the psychiatric patient as not treating him. Every relationship that he forms with any individual especially if he is a doctor, makes him either better or worse. Any act a doctor carries out toward a psychiatric patient which causes distrust and hostility, is poor treatment and makes it that much harder for the physician who sees him afterwards. There are certain situations which physicians frequently meet in dealing with the psychiatric patient which are handled in a way which cannot help but leave a bad taste in that patient's mouth. Some of these situations we are going to try to discuss.

The first thing which seems worthy of mention is the matter of referral to the psychiatrist. This is an especially important matter, since in this first meeting the groundwork for future treatment is laid. If the meeting is one which sows the seeds of doubt in the patient's mind, it may be a long while before trust of the psychiatrist ever is established again. Therefore any good psychiatrist will insist that the patient know who he is and what his profession is before he sees the patient. The idea of inviting the psychiatrist to dinner and having him form an opinion of mother's sanity while she serves the vegetables, is not only impossible but is extremely bad psychiatric practice. The patient must be prepared for the psychiatrist's visit and he must know what is going to happen in that visit. To ask the psychiatrist to form an opinion without this preparation is much the same as going back to the old days of obstetrics when the fetus was delivered with the doctor working under blankets, except that in this case nature is on the side of the doctor and she usually is not with the psychiatrist. It is therefore necessary that the referring physician take the trouble to prepare his patient for psychiatric examination and possible treatment. There will be two large classes of patients who are referred to the psychiatrist. First, those who we call neurotic or in popular terminology

just "nervous"—secondly, the group who we will call "psychotic" or once again in popular terminology insane or crazy. Many physicians seem to find difficulty in explaining to the neurotic patient why they are asking the psychiatrist to see them. Actually the explanation usually is not very difficult. One will assume that the patient's story has been carefully listened to and careful physical investigation has been carried out before psychiatric examination has been suggested. If this has been done, it can then be explained to the patient that following these examinations no organic cause has been discovered for the trouble. One must be on one's guard here to avoid giving the patient the idea that you are saying there is no cause for the trouble or that the trouble is non-existent. Any suggestion that neurotic complaints are imaginary or put on is not only untrue but is deeply resented by neurotic patients. Neurotic complaints are the result of an emotional disturbance having its effect on the autonomic nervous system and the physical result is just as real and just as distressing as any other complaint that the patient may have. Once the patient has been told that there is no organic basis for his symptoms, he must be assured that the physician believes in their validity and he must be given some explanation why they occur. It is very easy to point out to him that under emotional stress changes in the body can occur. The best way probably is to use an example from everyday life. One which I generally find effective is to tell my patient that if I went out on the street and was nearly run over by a bus when I jumped back on the pavement, there would be certain changes in my body. Those changes are perfectly obvious and a matter of everyday experience. I will probably feel faint and giddy, my heart will be pounding, my stomach turning over and I might vomit or have diarrhoea or frequency of urination. Other examples such as the common experience before oral examinations or in going into the disecting or operating room for the first time, may be used also. The point is that we are able to give the patient actual evidence of the way that disturbed emotional states may effect his well being. It is then possible to go on and say we believe the same sort of thing is happening in your case and if treatment is to be successful, the emotional side of your life must be evaluated. We must go into the various worries that you have had, the way they react on you and see if we can find the explanation of your illness there. The physician may want to carry on from this point himself and conduct some type of investigation into his patient's emotional life but, if the case is complicated and time consuming, it may well be that he will wish the psychiatrist to carry on from there. If the patient comes to a psychiatrist with this understanding his examination and treatment is then very much facilitated. If he comes in any other mood the chances of treatment are well nigh impossible. I suppose two or three times a week patients arrive in my office under the impression that they are coming for some type of physical examination and then usually most of their time and most of my time with them is taken up in trying to break down this idea and to demonstrate the importance of emotion rather than going on and trying to find what the emotional upset is. If following this explanation, the patient feels that he does not wish to consult a psychiatrist, then there is little good in pressing the referral further. I find that generally if the matter is dropped there and not urged too much before very long the patient will have brought himself around to the point where he is willing to go for this type of investigation. Psychotherapy is impossible unless the patient will co-operate, therefore, there

is no point in sending a neurotic patient to a psychiatrist until he feels the need of help himself and is willing to make an effort on his own to get that help. The neurotic patient who comes for treatment because his father or his wife or his aunt or uncle wants him to come is simply wasting time and money. It should be added that there is no point in the psychiatrist seeing the patient unless he has time to investigate the case properly. Any atmosphere of hurry precludes the possibility of a good patient-physician relationship. Therefore it is necessary that the psychiatrist conduct his practice by appointment only unless his purpose in seeing the patient is only to gather a few facts to put on the commitment paper.

The second type of case, the psychosis, offers a little different problem. Here the psychiatrist may frequently see the case purely for the purpose of diagnosis and for disposal. However, even with the psychotic patient the reason for the psychiatrist's visit should be made clear. It is impossible for him to do an adequate mental status examination on the patient and have the patient remain in ignorance of what is going on. Also with the exception of some far advanced organic cases such as the senile or arteriosclerotic, the time will probably come when some type of psychotherapy will have to be attempted and then if they have been tricked into psychiatric examination, the difficulties are very much greater. The main difference between referral in the case of the neurotic and the psychotic is that in the psychotic it may be necessary to insist on referral even though it is against the patient's will but, it should be stressed, that referral brought about by force is preferable to referral brought about by trickery. The patient will not feel nearly as antagonistic about being made to do something as he does about being tricked into the same thing. Therefore an attempt should be made to explain even to the psychotic patient why a referral is being asked for and what is hoped to be gained from it. The question of hospitalization need not necessarily be brought up but it should, I think, be pointed out at the beginning that it may be necessary for treatment to be arranged possibly away from the patient's home. If the patients are referred in this way, as I have said, the difficulty of psychiatric treatment becomes very much less.

The discussion of referral of psychotic patients leads naturally to the details of commitment and getting the patient to hospital. The first thing is getting the proper forms filled out for admission to the Nova Scotia Hospital. As you undoubtedly all know there are three forms which must be filled out; two to be filled out by medical men and one by a responsible person in the patient's family. These forms are easily procured free from the King's Printer or city, town or municipal clerk, and there is no reason why every doctor should not keep a supply on hand. The forms must be completed and the family statement must be sworn to before a Notary Public or Justice of the Peace before the hospital can legally receive the patient. It is very common to have acutely psychotic patients arrive in Halifax, frequently at night or on a Saturday afternoon or Sunday when physicians are occasionally hard to contact, without any of these preliminaries being done. Worse still they frequently arrive in Halifax accompanied by a relative or by a friend who is not in a posiposition to insist on certification, i.e., he has not the legal right to demand that the patient be hospitalized. At least three times in the last month I can think of acutely psychotic patients who have arrived at our clinic needing certification and they have been accompanied by people such as cousins or aunts, who

had absolutely no right in the world to go ahead with the commitment. We would urge that if patients are psychotic and are referred for psychiatric opinion that one of two courses be followed, either the family statement be completed before the patient comes to the psychiatrist, or that they be accompanied by a person with a proper legal relationship, i.e., preferably a mother or a father, husband or wife, who has the power to fill out the family statement and to make the decision with regard to commitment. In many cases it would be helpful and would be a great time saver if the referring physician would fill out one medical certificate and the psychiatrist then can fill out the second one if that seems to be the proper step to take. On the other hand if it seems possible to treat the patient here in a general hospital or as an outpatient, the mere signing of the family statement and one medical certificate has done no harm. The statement made out by a relative must be dated within thirty days of the commitment, and the medical certificates within fourteen days. Sometimes when no relative is available one of the certifying physicians will also sign the statement. This is not good practice and may lead to complications later on. If a relative is not available, the statement may be signed and sworn to by a friend, a clergyman or any public official, provided that the reasons for this are recorded in the space provided. Medical certificates which are signed by physicians who are relatives or partners are not legal. The medical certificate is divided into two parts, part I containing facts indicating insanity observed by the physician himself and—part II containing facts indicating insanity communicated to the physician by others. It should be noted that no certificate is legal which is based only on facts communicated to the physician by others. No doctor need be afraid to make out a medical certificate because he is uncertain with regard to the proper psychiatric diagnosis; providing that he is reasonably sure that the patient is mentally ill and makes out the certificate properly. A common error in filling out certificates is neglecting to put in the date. Occasionally the physician puts his own name down in the place of the patient's and certifies himself as a person of unsound mind.

Voluntary admission to the Nova Scotia Hospital may be obtained when a patient's illness is so mild that the family physician is unable to certify him. In many cases of general paresis the neurological signs are present before there is any obvious sign of mental illness, and this is the stage in which they benefit the most from treatment. In the case of alcoholism and drug addiction certification is generally better than a voluntary admission because discipline is an important factor in their treatment. Of course no patient can be accepted for voluntary admission unless they realize clearly what they are doing. Frequently patients are sent to hospital for voluntary admission with the hope that the admitting physician will by false promises or other trickery secure the patient's signature on the admission form and then turn the key on them. This is not done, and neither will the admitting physician coax the patient to sign the form. An effort will be made to explain the situation to the patient and point out to him the benefits of voluntary admission, but beyond that the hospital physician has no authority, even if such a procedure was good practice, which it is not.

Following these legal formalities the next question is getting the patient to the hospital.

Unfortunately the most common method used at the present time is that of trickery and deception. The patient is told that he is going to be taken

for a drive or that he is going to see Uncle George and frequently has no warning about what is going to happen until he gets on the Dartmouth Ferry or arrives at the Nova Scotia Hospital doors. Admission to hospital in this way is a most tragic thing. For the patient the hospital then cannot help but be something of which the family is afraid and ashamed and to which naturally the patient adopts the same attitude. The doctors can be nothing but jailers, they cannot be helpers under those circumstances. No patient should be sent to the Nova Scotia Hospital without being told first where he is going. I realize that this policy means added difficulty to the family and the physician on many occasions. Actually it is surprising how many cases will agree to go to hospital willingly when careful explanation is given of the contemplated step. There will be a group of patients who will still refuse to go but, as I have said in discussing referral, it is much better to use physical force on those patients than it is to use deceit. Most of us in every day living are prepared to bow to circumstances that we cannot lick but we are extremely cross if we are tricked into doing something. Very often the patient sees through attempts to get him into hospital by deceit and gets a very poor impression of the mental calibre of those who were trying to put it over on him. If his thinking has a paranoid trend, he will invariably jump to the conclusion that those who are trying to trick him have a guilty conscience and therefore must be to blame for his troubles. If it comes to a matter of physical force, the thing then is to have enough helpers to make sure that the struggle is going to be very unequal. There is no point in struggling with a psychotic man without two or three people on your side. It is much better to show an overwhelming force and frequently the struggle is avoided altogether. It will frequently be necessary to use sedation in getting the patient into hospital and when this is so some intravenous barbiturates are probably preferable. The one I most commonly use is somnifaine. That is a relatively safe hypnotic intravenously which acts quickly and lasts for several hours. I think it is very helpful for disturbed patients. Sedation, however, should not be used without the patient knowing that it is going to be used and what its purpose is. There is no situation for the hospital psychiatrist harder to deal with than the patient who wakes up in the Nova Scotia Hospital having been brought there completely against his knowledge while heavily asleep. Another point about admission to hospital is that one should always make sure that the patient understands that the family have given their approval with regard to the hospitalization. Too often the patient comes in hospital having the feeling that the family are against hospitalization and that it is the doctor who is responsible. The united front of doctor and family should always be maintained so that the patient does not feel that he is being kidnapped or spirited away but that hospitalization is being insisted upon by those who love him best and therefore is for his own good. In that way, once again the doctor escapes the position of being a jailer and his medical opinion is strengthened by the family's attitude. If a psychiatric patient is to get well, it is most important that the family assume their proper position and take on their responsibilities in the matter.

Occasionally with the badly disturbed patient it may be necessary to have police help in getting the patient to hospital. Once the patient is legally committed, the police will assume responsibility for delivering the patient to the Nova Scotia Hospital, if the family wish it. There are obvious disadvantages to dragging the police in—but it's better than deceit.

If a patient is acutely disturbed and violently disturbing the peace, it is probably best to have the family lay a charge and have the patient taken to the police station from where he can be committed and transported to the Nova Scotia Hospital. I do not conceive of it as any part of the physician's job to act as a one man riot squad against an acutely excited patient.

The next matter which I should like to discuss is the question of giving some prognosis to the members of the family or perhaps to the patient himself. Discussing this matter I shall first deal with the psychotic patient. It will be necessary to take a little time and discuss in very broad terms the different types of psychosis which we have to deal with. In general there are two big types. First, the so-called organic psychosis where there is actual disease in the brain cells and secondly, the functional psychosis such as manic depressive psychosis and schizophrenia, in which there is no disease in the brain cells. With regard to the organic psychosis the outstanding defects are defects in memory and judgment. They generally occur in the later years of life and they are frequently associated with old age, arteriosclerosis or syphilis. In this organic group the prognosis is poor and almost invariably the patient which is sent to hospital will have to remain there for the rest of his natural life. The only exception to this rule is the patient who has an organic psychosis as the result of syphilis. Here in early cases fever treatment can generally restore the patient to normal. It should be emphasized that this good prognosis can only be held out for early cases. If the disease has progressed to any extent so that there is actual destruction of the cerebral cortex, all the fever in the world will not restore the damaged cortex, That is why it is so desperately important that patients with G.P.I. get fever at the very earliest possible moment.

It should be pointed out to the family that fever therapy carries risks with it, the death rate being about 4%. In early cases, however, in good physical shape the risk will be much less than this. The time for treatment be about one month and it will take the patient at least another month to get on his feet.

With the functional psychosis there are for practical purposes two big groups:—

1. Those characterized by disturbance of mood, the patient being pathologically depressed or pathologically happy. These are the manic depressive psychosis and the entity so long called involutional melancholia. These psychosis respond well to electric convulsive therapy—the prognosis is good and the period of treatment short—generally about three weeks. The risk of such is slight—fractures occasionally occur—death practically never.
2. The second type of functional psychosis is the group characterized by disturbance of the content of the patient's thoughts—this patient will not say "I am depressed or unhappy," but rather "People are against me—I hear voices talking about me—God can talk to me" and so on. This group of psychosis can be lumped together under the term schizophrenia or dementia praecox. The prognosis in this type of case is bad—even with the most modern treatment. The treatment of choice is insulin shock—the patient is given enough insulin to being on coma—a course consisting of 30-50 comas, This treatment is

therefore lengthy lasting six weeks to three months. It also carries a much greater risk than electric convulsive therapy. (Our experience at the Nova Scotia Hospital has been the reverse.) It can be done only when a full and well trained staff are available organized in an insulin unit ready to deal with any emergency. This means that hospitalization at the Nova Scotia Hospital is necessary—the earlier this step is taken the better the results. No ideas about stigma or shame of mental hospitalization should be allowed to stand in the way of insulin treatment for the early schizophrenic. It is our only hope at present of modifying the course of this extremely prevalent and serious psychosis.

Turning to the neurotic patient the problem of prognosis is more difficult. In general it should be pointed out to such a patient and his family that there is no swift and magic cure for such ills. Shock treatment is not effective and has little or no place in the management of neurosis. As I stated earleir a psychotherapeutic approach is necessary with its object the uncovering of emotional problems and either changing the causative factors or teaching the patient to make a better adjustment to these problems. Such an approach cannot be hurried . . . therefore the neurotic patient must understand that treatment is not a matter of a few weeks. Also the patient must look on himself as an active partner in this type of treatment—many neurotic patients cannot give this co-operation and treatment therefore fails. The war years have taught us new things about neurosis—the use of such things as modified insulin and intravenous barbiturates—narcoanalysis—has succeeded in shortening the treatment of some cases but I think any honest psychiatrist would have to admit that the treatment of neurosis is still often an unsatisfactory business.

However, one thing should be strongly emphasized—if we cannot do good, we can at least refrain from doing harm. The medical profession is far from guiltless in this handling of the neurosis. Many an anxiety state is converted into a cardiac invalid because some doctor shook his head gravely while listening to an innocent heart—many a doctor has fixed the idea of disease firmly in the patient's mind by giving what he believed to be a harmless placebo—the patient thought no one would be silly enough to give medicine unless he were really sick. At the Victoria General Hospital recently I have seen a girl, age 33, with ten operations and sent in for her 11th one. Her physician knew all about the inside of her belly—no one put any weight in the fact that inside her head she is struggling to adjust to the fact that she slipped at 16 and married a man 56—now at 33, he's 73. Surely this is of some significance in her life and health—its bad surgery that neglects such facts.

To summarize this paper has concerned itself with three common problems confronting the general practitioner in his dealing with psychiatric patients, namely, (1) methods of referring a patient to a psychiatrist; (2) the legal procedures and methods of sending the patient to the Nova Scotia Hospital and (3) things to be considered in discussing prognosis and treatment with the patient and relations. At the beginning of this paper the authors' aims were much more ambitious—time placed limitations on that ambition. However, it was felt that if these simple points could be brought to the attention of our practitioners the lot of both patient and psychiatrist would be much easier.

The Internal Carotid Artery
An Anatomical and Clinical Correlation

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THE internal carotid is an artery of many structural peculiarities which are apparently related to the varying types of tissue through which the artery passes. Commencing as a vessel within a fascial sheath, it successively traverses a bony and then a venous space to terminate as a cerebral vessel. The structural peculiarities occurring during the vicissitudes of its course are also possibly related to functional capacities, and require further investigation.

It is proposed to describe and discuss some of its features and relate them to clinical matters. In order that these may be more readily understood, it seems necessary to briefly review the course of the artery.

Course

The internal carotid artery begins at the carotid bifurcation where its dilated origin forms part of the carotid sinus. It then ascends lateral to the pharynx to enter the skull at the carotid foramen.

On entering this foramen it traverses the sinuous carotid canal within the petrous temporal, and makes two almost right angled turns as it passes through the bone. Surrounded by a venous and sympathetic plexus it first ascends in front of the middle ear, medial to the auditory tube, and then turns forwards towards the petrous apex. At the petrous apex, where it is closely related to the trigeminal ganglion, it turns up to enter and tortuously trasverse the cavernous sinus.

Within the cavernous sinus the artery is related to the delicate endothelial lined cavernous blood spaces, and laterally to those parts of the 3rd, 4th, 5th and 6th cranial nerves which traverse the sinus. It leaves the sinus lateral to the optic nerve, at the anterior clinoid process, where it gives off the ophthalmic artery.

Finally, diminished quite noticeably in calibre, it turns abruptly upwards and backwards to terminate in its anterior and middle cerebral branches beneath the vallecula cerebri.

Arterial radiography or arteriography has made it possible to study the course of the artery in the living subject, and has shown that normally its intracranial curvatures may be simple or complex, forming what is known as a single or double carotid syphon. Any local or general disturbance of the course and curvatures as seen in the arteriogram is viewed with diagnostic suspicion.[1]

Structure

Arteries are usually classified as either muscular or elastic in type according to the tissue which predominates in the tunica media. Generally speaking elastic fibres predominate in the middle coat of juxta-cardiac arteries, while more peripherally situated arteries become progressively more muscular in type.

The extra-cranial or cervical part of the internal carotid is elastic in type. Although the thickness of the artery is largely due to its musculature there are many elastic fibres scattered throughout the entire tunica media, and the

external and internal elastic laminae are prominent. In this region a well developed adventitial sheath supports the artery.

On entering the carotid canal an abrupt change in structure is noticeable. The artery becomes essentially muscular in type. Although there is no appreciable change in the actual thickness of the vessel wall, the tunica media apart from the internal and external elastic laminae, contains few elastic fibres.[2] About the artery in the periadventitial space are the venous and sympathetic carotid plexuses. The size of the periadventitial space and venous plexus within the carotid canal, as might be expected, is related to the size of the artery. The pericarotid venous plexus, which links the cavernous sinus with either the pharyngeal veins or internal jugular vein, receives many tributaries. These are small but clinically important veins, which drain the tympanic mucous membrane, the substance of the petrous temporal, and the sheath of the trigeminal ganglion.

The intra-cranial part of the artery is thin walled and poorly supported. The tunica media is less well developed, as are also the internal and external elastic laminae.

Applied Anatomy

The tortuosity of the internal carotid artery is one of its most striking peculiarities. The artery is normally very tortuous in its course through the carotid canal and cavernous sinus, but occasionally curvatures are seen even in its cervical part.

The cervical part of the artery, since it usually lies postero-lateral to the tonsil bed, runs little risk of being injured in tonsillectomy. Sometimes however, the artery in this region presents one or more sigmoid loops or coils. If these lie in the sagittal plane, they may extend forward and lie lateral to the tonsil; if they lie in the coronal plane, they tend to bulge the posterior wall of the pharynx behind the fauces.[3] In either case the artery is prone to operative injury, and although few cases of fatal haemorrhage are on record, it is always wise to carry out a careful preoperative digital examination.

Such tortuosities in the cervical part of the artery may be unilateral or bilateral, and occur in either childhood or adult life. Their genesis is controversial, but they are probably of embryological origin.[4]

All parts of the artery appear to play a role in the control of cerebral blood pressure. At the carotid bifurcation, for instance, the internal carotid usually helps to form the carotid sinus. This dilatation is said to amplify intra-sinal pressure changes[5] and thus reflexly alter cardiac output according to requirement. Pressure over the sinus may produce a slowing of the heart, and a fall in blood pressure, particularly in hypertensive and arteriosclerotic patients.[6] Operative manipulations in the region should obviously be influenced by such considerations.

Then again the tortuosity of the artery within the carotid canal and cavernous sinus also possibly serves as a mechanism for regulating intracranial blood pressure. Some believe that these flexures, together with the reduced calibre of the artery just beyond its ophthalmic branch, serve to shield the brain from the shock of arterial pulsation and sudden changes in cardiac output.[7]

Since function is inextricably interwoven with structure, the abrupt change which takes place in the artery once it enters the skull must be borne

in mind. The muscular character of the vessel in this part is conducive to a more regular and less pulsatile type of flow. Indeed, if the artery is exposed within the petrous temporal, it is seen to be vein-like and pulsation is barely detectable.[8]

The change in arterial structure that occurs in the trans-cranial and intra-cranial parts of the artery, together with their conjectured influence on intra-cranial blood pressure, raises the interesting question of aneurysm.

Aneurysm of the intra-cranial part of the internal carotid is commoner than aneurysm of its extra-cranial or cervical part, and is generally non-luetic. The cervical part has a strong adventitial and musculo-elastic wall, quite unlike the weakly supported wall of the cavernous and supra-clinoid parts of the artery. The fact that severe head injury may be followed by a carotico-cavernous fistulous aneurysm and pulsating exophthalmos stresses the thin wall and the venous environment of this part of the artery, and reminds us of the possible role of trauma in the development of even a saccular intracavernous carotid aneurysm.

So that whatever the immediate causal factor of internal carotid aneurysm, e.g. degenerative change, congenital defect, etc. the unsupported thin walled intra-cranial part of the artery is at a material disadvantage.

The symptomotology of aneurysm of the intra-cranial part of the internal carotid is largely dependent upon whether the supra-clinoid or infra-clinoid (cavernous) parts of the artery are involved. Aneurysm within the cavernous sinus produces a series of syndromes whose signature is generally that of a 3rd, 4th, or 6th nerve ocular palsy, attended by trigeminal pain and anaesthesia. A supra-clinoid aneurysm differs by the absence of anaesthesia, and the paralysis commonly of only one ocular nerve, the 3rd, due to downward pressure upon the cavernous sinus.[9] Pressure medially upon the adjacent optic nerve and chiasma may also occur.

Internal carotid ligation has become a recognized surgical procedure, and has been used for both the fistulous and saccular type of internal carotid aneurysm. It is however a grave undertaking, whose mode of execution is dictated by individual requirement.

The artery supplies a large part of the brain, and also the eye, consequently its ligation, especially in elderly persons, is apt to be followed by such complications as hemiplegia, aphasia, cerebral softening and blindness. To the uncertainties might be added the fact that the corresponding vessel on the opposite and unaffected side may be rudimentary or even absent.[10]

Ligation of the vessel in the neck mechanically reduces the cerebral blood supply, and may reflexly reduce the systemic blood pressure. The last effect is said to be due to the fact that the ligature increases the pressure within the carotid sinus, bringing about the depressor action of the sinus upon the heart and circulation.[11] This is of interest in that the carotid sinus, which is sometimes limited to the internal carotid, seems to become increasingly sensitive to pressure with advancing age.[12]

Common carotid ligation is deemed less hazardous, and may suffice in the aged; if inadequate it may be combined with ligation of certain external carotid branches. The recent innovation of electro-encephalographic studies during carotid occlusion, promises to be of great assistance in assessing the probable effect of occlusion upon cerebral function.[13]

The internal carotid also plays an interesting role in suppurative conditions of the middle ear and petrous temporal generally. This is due of course to the fact that the artery traverses the bone, and is surrounded therein by the periadventitial space, the carotid venous and sympathetic plexuses.

The bony partition separating the middle ear from the carotid canal is thin, and occasionally incomplete.[14] Consequently a chronic, or even acute, suppurative middle ear condition may terminate in the spread of infection to the pericarotid venous plexus and cavernous sinus.[15] The internal carotid is said to be more frequently exposed in chronic aural suppuration than is realized. Infection of the pericarotid venous plexus may also result from a phlebitis of one of its tympanic or petrosal tributaries.

The carotid canal thus provides an alternative to the usual jugulo-petrosal route of cavernous sinus infection, and is particularly interesting in the light of the view that the movement within this pericarotid venous plexus is not solely downward but oscillatory in character.[16]

Apropos chronic infections of the middle ear cleft, it should be borne in mind that curettage of the auditory or Eustachian tube, which sometimes constitutes a step in the radical mastoid operation, is a procedure fraught with danger. Apart from the possible erosive effect of granulations in the auditory tube, the first bend of the internal carotid artery is intimately related to the tube, and if not directly related to it, is separated only by a thin bony lamella.[14] The practical importance of this is apparent, for the artery may, and actually has been injured during Eustachian curettage.

In petrous apex suppuration pus may make its way into the carotid canal and by involving the pericarotid sympathetic plexus give rise to a Horner's syndrome. Deliberate exposure of the petrosal part of the internal carotid artery has been employed to avoid injury to the artery, permit full exploration of the petrous apex, and reveal and drain pericarotid pus.[17] Arterial pulsation is here insignificant, and the risk of haemorrhage from the pericarotid venous plexus minimal.[18]

Finally it might be mentioned that the artery may be ruptured as the result of a skull fracture extending through the body of the sphenoid or carotid canal, and be attended by nasal or meatal haemorrhage.

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CASE REPORT

Spontaneous Pneumothorax*

SAUL GREEN, M.D., Halifax, N. S.

"J. C.," male, age 2 months, was admitted to the Children's Hospital on Dr. Wiswell's service on March 28, 1945. He was a breast fed baby, weighing 8 lbs. 5 ozs. at birth, with no previous illness and a negative family history.

On March 23rd, child developed a non-purulent nasal discharge along with a dry cough. No vomiting, fever, diarrhoea, or rash. This continued until March 27th when his temperature rose to 104°, his coughing increased and he showed clinical signs of pneumonia at the right base. On March 28th, he was admitted to hospital. His appearance was that of a well nourished, seriously ill, cyanosed child. Temperature was 104°, respirations rapid and the alae nasae were dilating with each respiration. Chest examination revealed equal movements of both sides, dullness over the right base and his breath sounds were rough in nature with fine and moderately coarse rales over the lower right lobe and throughout the left chest. Other physical findings were essentially negative. He was immediately given 50,000 units of penicillin I.V and placed in an oxygen tent. The penicillin was repeated in three hours then 5000 units were given I.M. q.3.h. A continuous I.M. glucose saline drip was started. Coramine 5-8 minims was given when required. Due to distress in breathing no attempt was made at oral feeding. On March 29th his condition improved. The pallor and cyanosis were replaced by a more normal appearance and he took 4 ounce feedings by mouth. Intramuscular fluids were continued. Mucus was aspirated frequently from his throat. Penicillin was continued at 10,000 units I.M. On April 1st, at 7 a.m., his breathing became very laboured and cyanosis was so marked that he had to be put back in the oxygen tent. On physical examination breath sounds were absent over the right chest while sounds of congestion were elicited over the left lung. He was having frequent soft stools and his abdomen had become distended, but he took his formula well. On April 2nd his abdomen was still distended. A rectal tube was inserted and a large amount of flatus was expelled. His breathing was still distressed. An X-ray revealed a spontaneons pneumothorax on the right side with complete collapse of the lung and displacement of heart and mediastinum to the left. Sixty cc.'s of air were aspirated by syringe and this eased the breathing, he still appeared critically ill. On April 6th, 70 cc. of air were aspirated by syringe and a continuous removal of air was begun by the closed method. The needle was left in the chest and attached to a tube inserted under water on the floor. This caused marked improvement, especially to his respiratory condition.

On April 7th child's condition fair. Removed from oxygen tent for one hour without distress. Chest X-rayed and the needle was seen to be in a good position, the lung in a state of collapse, and there was no evidence of fluid. Air was flowing freely through the tube, and the amount was increased by pressure on his abdomen and by coughing.

*Case report from the wards of the Children's Hospital, Halifax, N. S.

On April 8th, condition fair; breathing still laboured; heart sounds of good quality and regular; white blood count 40,000; haemoglobin 53%. He was given a transfusion of 80 cc. and the needle was left in the vein.

On April 9th, abdomen distended and child had two large bowel movements. No change in the chest findings. Pneumothorax therapy was attempted but was found to be impractical due to the great fluctuation in the readings. The tube was then clamped in order to give the hole in the lung a chance to heal.

On April 10th, child became very cyanosed and immediately the tube was unclamped which relieved the cyanosis. Child was then removed from the oxygen tent for one hour and showed a little distress. The needle was removed from his chest and he was re-X-rayed. There was no change in the intrathoracic findings. The needle was replaced in the chest cavity.

On April 12th, baby suddenly became very cyanosed and listless—temperature 104°. Sulphadiazine grs. IV was started along with the penicillin. Heart sounds were now very rapid and irregular. Croamine ½ cc. was given p.r.n. and digifoline M2 q.4.h. was started. The penicillin was later discontinued.

On April 13th temperature still elevated. White blood count 19,000 and red blood count 3,500,000.

On April 14th, heart rate still rapid approximately 180; the digifoline was continued and towards evening the rate dropped to 130. Breath sounds still not audible over the right chest.

On April 15th baby's condition improved. Pulse rate 120 and regular; temperature 98.6; respiration rate 32. 10 cc. of a 1% sulphathiazole emulsion was injected into the right chest by syringe.

On April 16th condition improved. Some air and straw coloured fluid were removed from the right chest. Sulphadiazine was reduced to Grs. II.

On April 17th, air still draining through tube, but his general health was improved and colour was good. Towards evening the air stopped draining through the tube and the syringe was inserted into the needle and 10 cc. of clear straw coloured fluid was aspirated. The tubing was then removed and a stilette placed in the needle.

On April 19th condition good until evening when baby became slightly cyanosed and 10 cc. of sterile fluid was removed from chest. The cyanosis then disappeared.

On April 20th, condition improved. Removed from oxygen tent for three-quarters of an hour with distress. Needle removed from chest. Heart rate normal and regular.

On April 21st, condition improved. Sulphadiazine was discontinued. He was out of oxygen tent for half an hour without distress.

On April 23rd out of oxygen tent all day. X-ray showed an improved appearance with an improved position of the heart. An area of pneumothorax was still present at the right base.

From April 26th to May 3rd his condition showed further improvement when he was discharged. Final examination showed a well nourished, healthy child. Breath sounds were audible over the right chest. The child was X-rayed on April 30th and May 12th and these both showed further improvement. Therewas still a small pocket of air at right base over the lower lobe.

There are several interesting features about this case. First, the baby was only 2 months old, with a spontaneous pneumothorax complicating a pneumonia. He seemed about to die on three occasions, but rallied and finally recovered. Second, the opening in the lung must have been fairly large as great amounts of air flowed from the chest with marked mediastinal distress as soon as the tube was clamped or the needle changed and there seemed to be no decrease in the amount of air for 15 days. Third, the injection of sulphathiazole emulsion into the chest cavity, with the idea of producing an inflammatory pleural reaction, in our opinion succeeded, as within thirty-six hours the air stopped flowing and straw coloured fluid was withdrawn from the chest. From this time on the baby made an uneventful recovery, repeated X-rays showing a gradual expansion of the lung, decrease in the amount of air, and absorption of the fluid. There was no evidence of an empyema at any time.

We have carefully reviewed the literature and have failed to find any reports of similar cases with the exception of any article from Argentina, not written in English. The text books have very little to say on the subject in young infants. Penicillin and sulphadiazine undoubtedly were important in saving this baby's life, particularly as the left lung at one stage was threatening to become involved. Very faithful attention on the part of the nurses in a long drawn out critical case played an important role as well in securing a successful outcome.

The John Cameron Rooms

DONALD MAINLAND

IT is unusual for a professor to engender in his pupils and colleagues such affection as did Dr. John Cameron while he was Professor of Anatomy at Dalhousie University from 1914 to 1930. That the passage of an almost equal span of time has not lessened that affection is shown by the numerous visits that he has received from Dalhousie men when overseas and by the interest and pleasure with which his recent article in the BULLETIN[1] has been read here. I, his successor, have heard him spoken of so frequently that, although I have never met him, I feel that he is a personal friend.

The recent expansion of the Anatomy Department has provided an opportunity to signalize in concrete form the esteem in which Dr. Cameron is held. It was therefore suggested that his name be attached to the newly established rooms in which are to be carried on the two forms of activity referred to in the March issue of the BULLETIN[2]—research and teaching by X-ray methods and the method of "anatomical clinics." After receiving Dean Grant's approval of the suggestion I wrote to Dr. Cameron asking for his consent, and he gave a most cordial reply. Commenting on my remark that the methods to be used in the new anatomy rooms were different from those on which he and I had been brought up, he wrote: "I wish to congratulate you on your pioneer efforts in revolutionizing the teaching of anatomy by making it a *living* instead of a *dead* subject. When I think of the poor, emaciated bodies that had to be dissected in all the medical schools in which I taught, I now feel that the students (as I did, myself, when one) must have gained a very miserable impression of the human form, the highest achievement of the Creator."

To insure that the wording on the door of the rooms would meet with Dr. Cameron's approval I wrote again. He chose the title that is at the head of this announcement, and added: "I wish the Cameron Rooms all success and I feel confident that much valuable knowledge will be acquired therein."

The chosen title will be placed on the door of the outer of the two anatomy rooms (the former Medical Library) on the main floor of the Forrest Building. It is intended also that a plaque will be erected to inform visitors of Dr. Cameron's position, his tenure of office, and the fact that the rooms have been named after him to signalize the esteem and affection in which he is held

I feel sure that I echo the wishes of his numerous friends when I say that we hope that it will not be long before Dr. Cameron himself visits his Rooms.

1. N. S. Med. Bull., 1945 (May), 24: 133-145.
2. N. S. Med. Bull., 1945 (March), 24: 72-81.

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92nd Annual Meeting The Medical Society of Nova Scotia

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New Books in the Dalhousie Medical Library, September, 1945

MEDICINE:

Boyd, Wm., Pathology of internal diseases, 4th ed., 1044.
Bargen, J. A., Modern management of colitis, 1943.
Conant, M. F., Manual of clinical mycology, 1944.
Blackfan, K. D. and Diamond, L. K., Atlas of the blood in children, 1944.
Fishbein, M., ed., Medical uses of soap, 1945.
Gould, S. E., Trichinosis, 1945.
Judowich, B. and Bates, Wm., Segmental neuralgia in painful syndromes, 1944.
Levine, S. A., Clinical heart disease, 3d ed., 1945.
Major, R. H., Physical diagnosis, 3d ed., 1945.
Pottenger, F. M., Symptoms of visceral disease, 6th ed., 1944.
Pullen, R. L., ed., Medical diagnosis, 1944.
Stieglitz, E. J., Geriatric medicine, 1943.
Wintrobe, M. M., Clinical hematology, 1942.
Piney, A. and Paterson, Sternal puncture, 2d ed., 1944.

SURGERY:

Bradford, F. K. and Spurling, R. G., Intervertebral disc, 2d ed., 1945.
Albee, F. H., Bone graft surgery in disease, injury and deformity, 1940.
Bailey, H. and Love, R. J. M., Short practice of surgery, 6th ed., 1943.
Christopher, F., Minor surgery, 5th ed., 1944.
Cole, W. H. and Elman, R., Textbook of general surgery, 4th ed., 1944.
Couch, J. H., Surgery of the hand, 1944.
Ferguson, L. K., Surgery of the ambulatory patient, 1942.
Gurd, F. B. and Ackman, F. D., Technique in trauma, 1944.
Snapper, I., Medical clinics on bone diseases, 1943.
Thorek, Max, Surgical errors and safeguards, 4th ed., 1943.
Turner, G. Grey, ed., Modern operative surgery, 3d ed., 2 v., 1943.
Watson-Jones, R. Fractures and joint injuries, 3d ed. 1944.

SPECIALTIES:

Cawadias, A. P., Hermaphroditos, 1943.
Dattner, B. and others, Management of neurosyphilis, 1944.
Stokes, J. H. and others, Modern clinical syphilology, 3d ed., 1945.
Tobias, Norman, Essentials of dermatology, 2d ed., 1944.
Mellanby, Kenneth, Scabies, 1943.
Kerr, J. M. M., ed., Combined textbook of obstetrics and gynaecology, 4th ed., 1944.
Read, G. D., Revelation of childbirth, 1942.
Hutchison, R. and Moncrieff, Lectures on diseases of children, 9th ed., 1944.
Zahorsky, John, Synopsis of pediatrics, 4th ed., 1943.

NEUROLOGY AND PSYCHIATRY:

Alvarez, W. C., Nervousness, indigestion and pain, 1943.
Adler, Alfred, Practice and theory of individual psychology, 1945.
Alexander, Franz, Psychoanalysis of the total personality, 1935.
Brill, A. A., Freud's contribution to psychiatry, 1944.
Brown, Carlton, Brainstorm, 1944.
Brown, Wm., Psychological methods of healing, 1938.
Brown, Wm., Psychology and psychotherapy, 5th ed., 1945.
Cleckley, Hervey, The mask of sanity, 1941.
Dunbar, Flanders, Psychosomatic diagnosis, 1943.
English and Pearson, Common neuroses of children and adults, (c1937).
Ford, F. R., Diseases of the nervous system, 2d ed., 1944.
Freud, Anna, Psychoanalysis for teachers and parents, 1935.
Gantt, W. H., Experimental basis for neurotic behavior, 1944.
Glover, Edward, ed., Investigation of the technique of psychoanalysis, 1940.
Grinker and Spiegel, War neuroses in North Africa, 1943.
Healey and Bronner, New light on delinquency, (c1936).
Henderson and Gillespie, Text-book of psychiatry, 6th ed., 1944.
Henderson, D. K., Psychopathic states, (c1939).
Jacobson, Edmund, Progressive relaxation, 2d ed., 1942.
Menninger, K. A., Man against himself, (c1938).
Moore, T. V., Personal mental hygiene, 1944.
Kardiner, Abram, Psychological frontiers of society, 1945.
Karnosh and Zucker, Handbook of psychiatry, 1945.

Pratt, G. K., Soldier to civilian, 1944.
Rank, Otto, Will therapy, and Truth and reality, 1945.
Rees, J. R., The shaping of psychiatry by war, 1945.
Reich, Wilhelm, Character-analysis, 2d ed., 1945.
Ross, T. A., Enquiry into prognosis in the neuroses, 1936.
Sadler, W. S., Modern psychiatry, 1945.
Sakel, Manfred, Pharmacological shock treatment of schizophrenia, 1938.
Sargent and Slater, Introduction to physical methods of treatment, 1944.
Schilder, Paul, Introduction to psychoanalytic psychiatry, 1928.
Shaffer, L. F., The psychology of adjustment, (c1936).
Solomon and Yakovlev, Manual of military neuropsychiatry 1945
Spurling, R. G., Practical neurological diagnosis, 1944.
Sterba, Richard, Introduction to the psychoanalytic theory of the libido 1942.
Strecker and Appel, Psychiatry in modern warfare, 1945.
Tredgold, A. F., Manual of psychological medicine, 1943.
Wechsler, I. S., The neurologist's point of view, 1945.
(McGill University), Human behaviour in its relation to industry, 1944.
Taft, Jessie, Dynamics of therapy, 1937.
Gesell, A. and Amatruda, Developmental diagnosis, 1941.
Blatz, W. E. Understanding the young child, 1944.
Bowley, A. H., Guiding the normal child, 1943.
Selling and Ferraro, The psychology of diet and nutrition, 1945.
Cobb and others, The role of nutritional deficiency in nervous and mental disease, 1943.

THE MEDICAL SCIENCES

Adriani, John, Pharmacology of anesthetic drugs, 2d ed., 1942.
Bull, H. B., Physical biochemistry, 1943.
Anderson, John, How to stain the nervous system, 1929.
Barclay, A. E., Foetal circulation, 1944.
Hamilton, W. J., Human embryology, 1945.
Jacobs, M. B., ed., Chemistry and technology of food and food products, 2 vols., 1944.
Howells, Wm., Mankind so far, 1945.
Krafka, Joseph, Human embryology, 1942.
Kuntz, Albert, Autonomic nervous system, 2d ed., 1934.
Lewis, Thomas, Exercises in human physiology, 1945.
Mainland, Donald, Anatomy, 1945.
Mayer, Fritz, Chemistry of natural coloring matters, 1943.
Mettler, F. A., Neuroanatomy, 1942.
Rasmussen, Principal nervous pathways, 1943.
Smith, C. A., Physiology of the newborn infant, 1945.
Tauber, Henry, Enzyme technology, 1943.
Waksman, S. A., Microbial antagonisms and antibiotic substances, 1945.
Walls, G. L., The vertebrate eye, 1942.
Wiggers, C. J., Physiology, 4th ed., 1944.
Jaeger, E. C., Source-book of biological names and terms, 1944.
Parker, R. C., Methods of tissue culture, 1938.

PUBLIC HEALTH, PREVENTIVE MEDICINE, TOXICOLOGY, etc.:

Boyd, M. F., Preventive medicine, 7th ed., 1945.
Cantarow and Trumper, Lead poisoning, 1944.
Richardson, H. B., Patients have families, 1945.
Saphir, Otto, Outline of tropical medicine, 1944.
Simmons, J. S. and others, Global epidemiology, vol. 1 (Far East and Pacific), 1944.
Truslow, Walter, Body poise, 1943.
Walton, R. P., Marihuana, (c1938).

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Goetzl and Reynolds, Julius Tandler: a biography, 1944.
Jacob, H. E., 6,000 years of bread, 1944.
Hertzler, A. E., Ventures in science of a country surgeon, 1944.
Rosen, G., History of miners' diseases, 1943.
Shastid, T. H., My second life, 1944.
Sigerist, Civilization and disease, 1944.
Stern, B. J., American medicine in the perspectives of a century, 1945;
Who's important in medicine, 1945;
Canada: 8th census, v. 2, 1941.
Horder, Health and a day.
Ratcliff, Yellow magic (the story of penicillin), 1945.

Congenital Syphilis

The diagnosis of congenital syphilis should be applied only to cases showing definite evidence of the existence, or former existence, of the characteristic changes of congenital syphilis. The congenital origin of syphilis is not to be assumed merely because the time and circumstances of the infection cannot be ascertained and there is no scar of a primary lesion.

Multiple Contacts

The clinical history of the patient should be kept in mind by the physician in his enquiry for alleged contacts to a venereal infection. A patient may have had several contacts within the incubation period of his infection, any one or all of whom may have been, or have become infected at the time of the sexual exposure. It is important that all such contacts are examined to ensure that none remain an undetected health menace.

As a guide in this matter, the incubation period of gonorrhoea is stated to average 3 to 9 days, but may, in certain instances, be as short as 2 days or as long as 14 days. The incubation period of syphilis is commonly 3 to 4 weeks, but may be as long as 3 months.

Regularity of Syphilis Treatment

It cannot be too strongly emphasised that regularity of syphilis treatment without long or short-time variations or lapses is critically important to both infection control and cure.

Personal Interest Notes

The marriage took place on September first of Miss Marjorie Munro MacKenzie, elder daughter of Doctor and Mrs. Kenneth A. MacKenzie of Halifax and Doctor William Arnold Murray, son of the Rev. R. P. Murray of Hillsboro. Cape Breton, and the late Mrs. Murray. Doctor Murray graduated from Dalhousie Medical School in January, 1943, and has just been discharged from the R.C.A.F.

The BULLETIN extends congratulations to Doctor and Mrs. E. M. Fogo (nee Gertrude Bent) of Halifax on the birth of a son on September 6th; and to Captain C, A. Roberts, R.C.A.M.C., and Mrs. Roberts (Alice Manson) at St. John's, Newfoundland, on the birth of a daughter on August 18th.

The appointment of Bryden-Blair Agencies, Saint John, N. B., as distributors of Allen and Hanburys specialties throughout the Maritimes has been announced by The Allen and Hanbury Company, Limited, Lindsay, Ont. The firm is pleased to have R. G. (Moose) Blair associated with its interests once again through Bryden-Blair Agencies. Mr. Blair was formerly the company's representative in the Maritimes until required to give up his work temporarily because of illness.

Obituary

THE death of Doctor John Frederick Lessel of Halifax occurred in Wolfville on October 1st. Doctor Lessel was one of our pioneers in the field of anaesthesia and was very prominent among Halifax yachtsmen.

Doctor Lessel was born in 1881, and graduated from the old Halifax Medical College in 1903. After graduation he proceeded to England and took post-graduate courses at London and Edinburgh. After conducting a general practice in Halifax for some years he decided to specialize in anaesthesia, being the first specialist in that line in the Maritime Provinces. An article written by him on the subject of "Clinical Shock" was featured in one of Edinburgh's leading medical journals some twenty-five years ago.

An interesting feature in Doctor Lessel's life was the time that he, Doctor Lewis Thomas and Doctor J. G. MacDougall responded to a request from the City of Boston during the epidemic of influenza in the year 1918. These three physicians went over to Boston at that time and helped out in the emergency resultant from the severe epidemic of influenza.

Doctor Lessel retired about five years ago on account of ill health and took up residence in Wolfville. He is survived by two nieces, Mrs. Reginald deGruchy of Halifax and Mrs. Reginald Mack of Bridgetown, and one nephew, Lieutenant John Lessel, R.C.N.V.R.

The funeral took place from Snow's Chapel, Halifax, on the third of October, with burial at Camp Hill Cemetery.