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Original Articles

CANCER OF THE UTERUS WITH SPECIAL REFERENCE TO DIAGNOSIS*

By Dr. G. Stewart Cameron, Peterboro'.

In bringing the question of Cancer of the Uterus before the attention of this meeting, and particularly of this section, I do not do so with the view of introducing any new material on the subject, but rather to reiterate what we already know of a disease that takes as its toll one woman out of eight who have passed the age of 35.

To my mind the keystone of the whole treatment lies in the early diagnosis, for once our profession is thoroughly seized with the importance of certain comparatively simple signs just so soon will the early detection of this trouble become possible, and once the early diagnosis is made, it will be an easy matter to secure the proper surgical treatment. We may go further and say that not only should our profession at large be alive to these early symptoms, but it should be their duty to instruct their patients that neglect of attention to these signs will inevitably lead, in far too many cases, to a fatal termination, for once the disease is established the possibility of successful surgical interference is extremely remote. I think, therefore, that every medical man should be a missionary among his female patients, instructing them in a sound, rational way whenever the opportunity presents itself.

I can well remember a few years ago, when a student in medicine, we were instructed in the various symptoms of cancer, such as wasting, cachexia, anorexia, and other symptoms, which to-day we all recognize as among the terminal evidences of this trouble. I stated, we all recognize, but I am sorry to say that

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sometimes we find that there still persists among some members of our profession a desire to cling to these advanced signs, and not appreciate the earlier symptoms.

Anatomy.—In regard to the anatomy of the pelvic organs, I have only a word to say, and that is with reference to the lymphatic distribution. The uterus being developed in the abdomen and subsequently descended into the pelvis, retains its connection with the abdomen through the lymphatic and circulatory systems. The lymphatic drainage of the upper segment of the vagina and cervix is through the lymphatics in the base of the broad ligament, up through the iliac glands to the lumbar glands, encircling the abdominal aorta. The glands of the body and tubes drain into the iliac glands and thence upward in the same way. I consider it important to mention this as it shows the route of the lymphatic advancement directly upward into the abdomen. Through this arrangement the disease rapidly passes beyond our control, and the opportunity for successful operation is entirely eliminated.

Age.—We have been taught in considering diseases to regard age as a particular factor, and while this to a considerable extent has a bearing in many instances, when we come to consider malignancy it would be well to disregard it entirely, as there is no cancer age, the disease having appeared in almost all periods of life. There are certain broad divisions which we might make in saying that cancer of the cervix is more generally found in women at or before the climacteric, whereas cancer of the body is more frequently found in patients past the menopause. Again we might say that the cervical type is more frequently found in multiparous women, and that of the body in the nulliparous.

Heredity.—Heredity should not prejudice us in our judgment. Because the patient's forebears may have died of cancer it does not follow that she must have cancer, and, on the contrary, a clear family history should not weigh against highly suspicious symptoms.

Hæmorrhage.—Hæmorrhage is perhaps the earliest noticeable sign. When a patient presents herself complaining of loss of blood between periods, we should forget the age, whether they are married or single, and bend our energies to prove that we are not dealing with a case of cancer. The bleeding of early cancer is usually irregular and inter-menstrual and is often produced on the slightest exertion. It may be very slight and the patient pay little attention to it, but careful questioning

will usually show that it has gradually increased. If the patient is past the climacteric and comes complaining of hæmorrhage one or more years afterwards, we should be extremely suspicious that we are dealing with malignancy and again prove to our own satisfaction that it is not such. Patients may appear complaining of hæmorrhage which they say is from other pelvic organs, and one may be led astray by accepting their simple statement. Again we should be suspicious and make a thorough investigation. An instance of this occurred not long ago where a patient complained of bleeding from the bladder; subsequent examination, however, under anæsthesia, showed the bladder to be perfectly healthy, but a beginning of cancer of the body of the uterus to be present. There are certain cases in which examination shows undoubted fibromyomata present, and in view of the fact that we know that a fair percentage of these cases have cancerous involvement as well, it would be better to get microscopical findings, and know positively what changes may be going on in the endometrium.

Discharge.—The discharge at first will be leucorrhœal in character, perhaps more profuse than usual, but many of these patients having had lacerated cervixes with more or less cervicitis, one cannot say that the early discharge is at all characteristic of cancer, but as the ulceration progresses, the discharge becomes thinner and watery in character, more profuse, oftentimes brownish in color owing to admixture of blood. Still later when invasion by bacteria has taken place the discharge takes on that disagreeable fœtid odor.

Pain.—Pain is not marked. All cancer is distinguishable by its absence in early stages, so that pain as an evidence in this locality must be set aside. Later on when the disease has gained considerable headway, and we get erosion of and pressure on the nervous structures, pain will come into evidence.

Loss of Weight.—Loss of weight which we have also associated with cancer is one of the late symptoms; in fact, I have often been struck with the fat, healthy appearance of the patient, and subsequently found that she had a well marked malignant invasion, so we must not be led astray by the apparent healthy appearance of our patient.

Examination in the early case may frequently give little positive evidence. Histologically, we know that the disease begins in the squamous epithelium on the outside of the cervix, or in the columnar cells somewhere in the canal. If then we

find ulceration which has hardened edges and friable and which bleeds easily, we should at once place the case in the more than doubtful class, and proceed to get microscopical findings. On the other hand, if the disease has begun in the canal we may neither see nor feel anything, or if the cancer has begun in the body of the cervix it will have a perfectly healthy appearance. This should not satisfy us by any means. I think we are quite justified in dilating the cervix and making as thorough examination of the canal and body as possible, and to do this careful methodical curettage of every interior part is demanded. These scrapings should be washed, put into 10% formaline, and submitted at once to a competent pathologist. The uterus should be normal in size, pretty freely movable and no increased tenderness.

The loss of blood per vaginam during the child-bearing period of life is a normal procedure, but any deviation from the established menstruation must have some cause behind it and it might be well for a moment to briefly consider some of these causes.

1*st.* *Abortion.*—There will be a history of one or more missed periods with some of the other symptoms of pregnancy. These followed with free loss of blood and characteristic pain will pretty well establish the cause.

2*nd.* *Ectopic Gestation.*—Again a missed period or more with other evidences or pregnancy. The discharge is red or brownish red, irregular and oftentimes mixed with shreds of decidua. Examination will reveal a soft tumor in close apposition to the uterus, but distinct from it.

3*rd.* *Post-puerperal Hœmorrhage.*—Either after full term or more frequently after an interrupted pregnancy. Here the bleeding may be fairly free, with no pain. Examination will show a sub-involuted uterus, fairly dilated os, with blood coming from the body. Examination of the interior will usually show retained portions of placenta or a beginning chorion epithelioma.

4*th.* *Uterine or Tubal Infections.*—There is usually a history of a previous pregnancy or an unusual discharge. Bleeding is that of prolonged periods with temperature usually present at some time of day. Examination will show a painful tender mass in the pelvis closely related to the uterus.

5*th.* *Fibro-Myomata.*—The history of the bleeding here is usually that of the menstrual periods being gradually prolonged, and the flow noticeably increased. Examination will show an

irregular walled uterus, hard knobs being present, or else there is evidence of the polypoid form on the inside.

6*th.* *Hæmorrhagic Endometritis.*—This again shows increased flow, frequency of periods, and may prove very doubtful until careful examination of the scrapings has been made.

7*th.* *Fibrous Uteri.*—The hæmorrhage is at the period, profuse and much prolonged.

In conclusion, let me say that any change from the normal in the loss of blood should put us on our guard. We should take a systematic history of our patient and insist on a careful and thorough examination under anæsthesia, if necessary.

SOME OBSERVATIONS ON BLOOD PRESSURE*

By Dr. A. T. Emmerson, Goderich.

The more one studies blood-pressure the more complex the subject becomes. Normal individuals have abnormal pressures. In some it is fairly even under ordinary conditions, in others it varies much with very little change in exercise, rest, work, or manner of living; notwithstanding these variations much information may easily be acquired that is very helpful and this will be increasingly so as knowledge of this subject becomes more fully developed by those who have the proper facilities for pursuing this line of research. It is only in the last decade that there has been a marked general interest in the subject, an interest not confined to medical men who study it for the purpose of knowing its bearing in physiological and pathological conditions and how best to deal with it, but applications for certain callings require a register of the blood pressure of the applicant; notably is this so, in life insurance, where it is regarded as a very important element in the risk.

For a working knowledge there must be a consensus of opinion as to what we mean when we speak of *blood pressure.* There is the blood pressure in the various parts of the venous system, in that of the capillaries, in that of the different arteries, and in the various sub-systems of the general system. In an ordinary healthy man aged twenty the systolic pressure

* Read before the Ontario Medical Association, Peterboro', May, 1915.

in the aorta is about 175mm., in the brachial 120mm., in the radial 115mm., and in the capillaries about 60mm.

In its common acceptation it is restricted to the arterial system and in that system to the tension in the radial or brachial artery. The pressure in the latter is slightly higher than that in the former. Blood pressure is the measure of the heart's power to force the blood through the arterial system. Four of the main factors in maintaining this pressure are, the energy of the heart, the resistance of the arterioles, the elasticity of the vessel walls, and the amount of the blood in the vessels.

There are some other terms we use that may be defined as they are commonly understood. There is the *systolic pressure,* which is the maximum pressure in a given vessel during a heart systole. The *diastolic pressure,* which is the lowest pressure in a given vessel during a heart diastole. The *pulse pressure* which is the variation during a cardiac cycle, that is, it is the difference between the systolic and diastolic pressures. The *mean pressure,* which is the average pressure at a given point. This, however, is not the half of the blood pressure, because the pressure at the systolic level remains for a much shorter time than at the diastolic level, also the first part of the drop is more rapid than the latter part, and these will vary in different individuals, the mean pressure may approximately be taken as about one-third of the pulse pressure. There is the *lateral pressure,* which is that exerted by the blood against the wall of the vessel. Then there is the *end pressure,* which is that exerted against an obstruction in the lumen of the vessel, and is of course greater than the lateral pressure, the difference being the effective pressure that produces the blood flow at the point.

The easiest way to obtain the systolic and diastolic pressures is by the armlet method and the stethoscope. Place the armlet about an inch or so above the elbow and the bell of the stethoscope on the brachial artery just below the armlet. As the armlet is inflated a pulse beat is faintly heard. This becomes rapidly loud, then slowly lessens until no sound is heard. Now let a little air slowly escape and the pulse beat will return. The reading at which it is first heard on its return will be the *systolic pressure.* As more air is allowed to escape, the loudness or amplitude of the beat will be heard increasing until it reaches its highest limit, then it quickly dies away. The reading when this fullest sound is heard will indicate the *diastolic* and corresponds with the time when the pressure of the armlet on the vessel is equal to the pressure inside the vessel. The fibrous coat with the encompass-

ing tissues takes the place of the armlet when it is removed. This reading will also be noticed to correspond with the greatest oscillations of the indicator on the sphygmometer.

The normal pressure is best obtained if taken two or three hours after a meal, the person having rested during that time and being in the recumbent position while the reading is made, and having the arm on the same level with the heart. If the pressure is found abnormal it is wise to try the other arm.

Pressure Readings.—It is necessary that we know at least approximately the average pressure readings in normal healthy individuals. I have not been able to test this sufficiently to do more than make a fair working scale, and am aware it is likely to require correction. In making this scale I have used the nearest typical numbers for the purpose of easy remembrance.

For age	20,	diastolic	pressure	90mm.,	systolic	pressure	120mm.
"	"	30	"	"	95mm.	"	"	125mm.
"	"	40	"	"	100mm.	"	"	130mm.
"	"	50	"	"	105mm.	"	"	135mm.
"	"	60	"	"	110mm.	"	"	145mm.

The vanishing point of the pulse when we use the stethoscope is from ten to fifteen millimeters below the diastolic pressure. The readings for females are said to be about ten millimeters lower than those in males for corresponding ages.

When the person is in the recumbent position the pressure in the arm and leg should be about the same. There is one disease in which there is always about twenty to forty millimeters higher pressure in the leg than in the arm, that is, in aorta regurgitation.

To test the reserve energy of the heart, take the pressure when the person is at rest, then let him exercise, such as going upstairs. This should raise the pressure from ten to thirty millimeters higher. If it remains stationary it is because of lack of power in the heart to meet the demand.

While knowing the blood pressure is a very valuable aid in our work, we must not place undue weight on a single reading; there should be a series, especially if the readings be abnormal; nor should an observation be too prolonged, because the interruption of the circulation in the extremity will in itself, if continued, cause changes in the arm pressure.

Physiological Variations.—In order to know the significance of blood pressure in pathological conditions we need to bear in

mind the variations in healthy persons and the conditions that may change it from normal to a high or low tension. We know that blood tension depends on at least four things, the amount of blood in the vessels, the force of the heart, the elasticity of the arterial walls, and the resistance in the arterioles. These will vary in normal cases in wide limits, by exercise, rest, digestion, fasting, positions of body, altitude, excitement such as from anger, fright, fear, joy or grief. Take an example of muscular exertion,—a man, aged twenty-six, by running up three flights of stairs, increased his systolic pressure by forty millimeters and his diastolic by ten millimeters. A brisk purgative or a profuse perspiration will lower the pressure. High altitude gives a venous engorgement and hence a lowering of arterial pressure and a quickening of the heart action; as an example of this it was noted in a case that the pulse was eighty and the blood tension one hundred and twenty-six millimeters at the sea level, while at six thousand feet above the pulse was ninety-nine and the blood pressure one hundred and eighteen.

The kind of air breathed, or the food eaten, or luxuries indulged in, will alter the pressure. Tobacco raises the tension; but its continued use or over-use will cause a peculiar condition in that the pressure is raised immediately after the smoke is taken, and then later there will be a low pressure. A boy in the out-department of a hospital was found to have a systolic pressure of 200 mm. On inquiring, he had just smoked a cigarette; and a young woman with a pressure of 210mm. had just previously smoked a cigar. In neither case could any pathological condition be found to account for the high pressure. Thus how very far apart may be the physiological variations.

It might not be amiss to give a quotation from an article in the *British Medical Journal,* by Dr. Price, on the action of digitalis on blood pressure. It is as follows:—

"In regard to the general subject of blood pressure one important point has been elicited. It is this, that in a considerable, indeed in almost a large, percentage of cases I have found a considerable fluctuation in the blood pressure from day to day. I am not now referring to variations associated with meals, but to diurnal variations which appear to be quite independent of these. Let me just mention one case to illustrate this. I had under my care a middle-aged man with a systolic pressure of about one hundred and fifty millimeters in whom there was a slightly enlarged heart, but no evidence of kidney

disease. He was under my observation in the hospital for about five months. For many weeks I kept him in bed and took the blood pressure myself with the same instrument at the same time of day and under precisely the same conditions nearly every day. There were frequent variations up to twenty-six millimeters. Now, if in by no means a small proportion of cases there may be considerable normal fluctuations from day to day, we should be very careful in coming to conclusions in regard to the action of drugs on blood pressure in man. It should never be forgotten that any changes observed after the administration of a drug in disease may be due to the natural course of the malady." To this I would add the question, How much of the variations may be physiological?

Pathological Variations.—Each disease has its own particular effect on the system, and the blood pressure so varies that it must be studied in connection with the disease. But if in an apparently healthy person it is found that the systolic pressure is constantly ten millimeters or more above normal, or the diastolic ten below, the diet, mode of living, etc., should be carefully investigated, and if after proper regulation of these the hyper or hypo-tension continues we may be pretty safe in concluding, even in the absence of other evidence, that some pathological process is at work, and it will be wisdom to examine the case from time to time to ascertain what it is and in the meantime add some medicinal treatment which will be referred to later.

The Relative Importance of Diastolic and Systolic Readings.—The constant load the vascular system has to carry is of first importance, and hence no matter what other information is obtained as to the arterial pressure, this should, if possible, be found. The diastolic pressure is the measure of this load and therefore should be regarded as the measure of arterial tension. It is also the most constant and indicates the load the arteries have all the time to carry and the resistance the heart has to overcome as it begins its ventricular systole. Its variations also correspond more closely to the mean pressure.

The following illustrates the constancy of the one and the variableness of the other. Three men ran a race and their systolic pressures were increased ten, eighteen and thirty-seven millimeters respectively, while the diastolic remained the same. In another race, in which the ages were thirty, thirty-five and fifty, the diastolic remained the same for ages thirty and fifty,

while the man of thirty-five had his slightly lowered. Their systolic pressures were increased twenty-five, twenty and twenty-seven respectively. I saw a patient in consultation this spring with a systolic pressure of one hundred and ninety, a diastolic of ninety and the vanishing point of the pulse beat under the stethoscope was twenty-five. I saw him again in three weeks when his health had markedly improved. His systolic pressure was two hundred and twenty-four, the diastolic ninety-five and the vanishing point twenty. Thus while the systolic increased thirty-four millimeters the diastolic had increased only five. These are not isolated examples of the constancy of the diastolic pressure as may be verified by any one.

A physician is called in consultation and takes only the systolic pressure. The excitement caused the patient by his coming may have run the systolic fifteen or twenty millimeters above that which the attending physician regularly found it; not so would this be found as to the diastolic.

Janeway cites two cases illustrating cardiac strength which also very forcibly show the value of the diastolic pressure. A man, aged twenty-six, while at rest had a systolic pressure of one hundred and thirty-five, a diastolic of one hundred and a pulse pressure of thirty-five. After running up three flights of stairs his systolic was one hundred and seventy-five, his diastolic one hundred and twenty and his pulse pressure fifty-five, showing a good cardiac strength. Another man, whose systolic pressure was one hundred and forty, diastolic one hundred and pulse pressure forty, after two minutes exercise had a systolic pressure of one hundred and fifty-five, a diastolic of one hundred and twenty-five and therefore a pulse pressure of only thirty, which shows a deficient musculature. If the systolic alone had been considered we might have thought the increase from one hundred and forty to one hundred and fifty-five indicated a better heart than that of one hundred and thirty-five to one hundred and seventy-five, but the diastolic had increased disproportionately in the latter, so giving us a lessened pulse pressure and indicating a lack of reserve vitality.

The Gravity of High Tension.—One very important effect of high tension is on the arteries themselves. The fibrous coat may be regarded as practically fixed in the matter of distension. Now if the tension in the blood be increased the inner coat of the vessel will be pressed outwards and as the fibrous coat is fixed the vasa vasorum will be compressed between the two coats and

hence the nutrition of the vessels will be interfered with and degenerative changes will ensue, due to this lack of nutrition and the efforts of nature to overcome the abnormal tension. Also this increased tension will mean extra work for the heart. This in time will cause hypertrophy, then the normal action of the coronary vessels will be adversely affected and this will result in degenerative changes in the heart tissue with the usual sequence of results.

If we follow this inquiry in the various systems of the body we will note similar results. Take the digestive system in big eaters, and most people eat too much. More food is taken than is required and vessels that are by nature intended to supply blood for normal conditions have in these cases not only to do so to dispose of the food required to sustain the body, but also of the excess that is being continually taken, hence a high pressure in the digestive system and to a lesser extent hypertension generally with its accompanying ill results. Such also will be the results in the vessels of the stomach when that organ has to masticate for the teeth. Long continued strain either physically or mentally gives the same sequence of events. As a corollary it will be very evident that one vessel or set of vessels will not give the story of all the vessels. One radial may be more sclerosed than the other. The vessels of the digestive system more sclerosed than those in the cerebral, or vice versa.

While high tension invariably leads to arteriosclerosis, it must not be forgotten that all cases of arteriosclerosis are not necessarily cases of high blood pressure. Rudolf, in a series of observations, states that in only about fifty per cent. of cases of well marked thickening was the pressure above normal, and that there may even be fatal cases of arteriosclerosis with the tension but little raised. Another writer states that in five hundred cases of healthy miners four hundred and sixty-nine had normal blood pressure, yet four hundred and fifty-six had palpable thickening of the arteries.

Preventive Treatment.—Preventive treatment is the most important and the most difficult to carry out because as a rule the physician is not consulted until the high tension has produced ill-effects. If adults were examined as a matter of routine every two or three years, especially as to blood pressure, the average length of life would be increased. Insurance companies recognize this and there is an advocacy of offering a free examination once a year to their policy holders, believing it

would more than compensate the companies financially for the outlay by an average lengthening of the lives they have insured.

For example, it is noted in an individual after repeated examinations that the blood pressure is abnormally high, ten to fifteen millimeters or more above that which it should be. On investigation it may be found due to excessive use of tobacco, or that the person is eating too much, or not masticating properly, or that the excretory organs are at fault, there is constipation with its attending results, or the skin is neglected and not kept properly cleansed, or impure air is being breathed, or there is too long continued mental or physical strain, or the high blood pressure is the result of some morbid process, and nature may be overdoing her work. By a study of the underlying causes much may be done to lessen the pressure or prevent it increasing by giving counsel as to the manner of living, regulation of exercise, lessening of the amount of food taken, limiting the proteid diet, restricting tea, coffee, and alcohol and having attention given to the proper elimination of waste products.

Toxæmic sources should be removed, as decayed teeth, pyorrhœa, chronic appendicitis, cholecystitis, prostatitis, etc.

How often some one in the prime of life and in apparent good health dies suddenly. Probably in most of such cases there has been long continued hypertension, and had it been known the person could have been given such advice and his life so regulated that it would have been prolonged.

In some cases nature comes to our aid. Through overwork on the heart the mitral valve gives a little and there is some regurgitation, sufficient to lower the tension somewhat and so prevent the heart going on to failure or the occurrence of cerebral hæmorrhage. Thus in cases of high tension a leaky heart may act as a safety valve and not be such as to call for digitalis or other heart drugs.

Treating Blood Pressure Medicinally.—This is by no means an easy thing to do. It requires both skill and good judgment because in some part of the system there may be sclerosed vessels and the general pressure will have to be raised in order that sufficient blood be supplied to the diseased tissue to nourish it and enable it to do its work. A cirrhosed liver or a chronic nephritis will require much hypertension in order that these organs come at all near their proper and necessary functioning. Take a man of sixty with œdema of the lower extremities, dyspnœa on very little exertion and a systolic pressure of one hundred and sixty. He has been dieted, amount of fluids

limited, has been allowed very little tea, coffee, tobacco or alcohol, and the bowels have been freely evacuated; yet there has been but little improvement. Very frequently in such a case if digitalis or strophanthus be given, the tension raised to say one hundred and eighty-one, there will be a marked improvement. Here, with high tension, sclerosed vessels, a laboring and deficient circulation, digitalis, while it still further increases the tension, has really lessened the work of the heart; because if we take the pulse pressure and multiply it by the pulse rate we will get a criterion for the amount of work the heart does. Then take the increased pulse pressure after the drugs have shown their therapeutic effects and multiply this by the pulse rate and the product is less owing to the lower rate of pulse, therefore less work has been done, and in addition because of the lengthened diastole the heart itself has been rested, also better nourished, especially so, if it is true that the circulation in the coronary vessels is carried on mainly during diastole.

In addition to the digitalis and strophanthus there should be extra elimination. Ten to thirty grains of blue mass two or three times a week, followed in six or eight hours by a saline, will give beneficial results.

When the patient is doing well he may be given ten grains potassium nitrate, ten grains potassium bicarbonate and from three to five grains sodium nitrite in hot water or an aperient water every morning. This will have a marked benefit in keeping down the tension. As an addition to this a dose of blue mass and saline every week or two.

In the use of depressor drugs, it is well to bear in mind that they vary as to their length of action, the establishment of tolerance, and that it is not fully proven how beneficial they really are. Glonoin in grs. 1-100 acts for about an hour, and a tolerance is soon established, so that the dose has to be increased. Sodium nitrite in two grain doses lasts about six hours and there is no establishment of tolerance. Manitol nitrate, a drug I have not used, is given in grain doses and its effects last about six hours with no establishment of tolerance.

When the heart begins to fail, practically no matter how high the tension we must have recourse to the digitalis group of drugs, and our sphygmometer will aid us in noting improvement.

Some Conclusions:—

1. Blood pressure may vary physiologically in the same individual with wide limits.

2. It varies comparatively among individuals where we would expect it to be the same.

3. Several readings should be taken before arriving at a conclusion, and all the factors considered.

4. The diastolic reading is more important than the systolic in indicating the work the heart has to accomplish.

5. There may be arteriosclerosis and a normal pressure.

6. Preventive treatment is of first importance.

7. Attention to diet, work, rest, elimination, etc., will accomplish more than drugs and is safe ground to work upon.

8. Blood pressure, so far as findings and investigations go, is still in its infancy and no man's statements should be regarded as necessarily absolutely correct.

PARONYCHIA: A SIMPLE METHOD OF TREATMENT*

(Jour. A. M. A. July 17, 1915).

An Analysis of Three Hundred Cases.†

ISADORE SEFF, M.D., AND SAMUEL BERKOWITZ, M.D.,

Although paronychia is only a minor ailment, nevertheless, it is attended by pain entirely out of proportion to the comparative extent of the disease. Though many methods in use for the treatment of this condition relieve the patients of pain, the treatment is as a rule prolonged and tedious, and the result in most cases is a disfigurement of the nail and cuticle.

The method which we have used in a series of 300 cases not only relieves the pain, but also shortens the course, restores the parts to the normal and always eliminates disfigurement.

Modern textbooks of surgery fail in most instances to give detailed directions for the treatment of paronychia. The time-honored method of splitting the nail longitudinally with a pair of scissors, under local or general anesthesia, and its removal by everting the halves with an artery clamp is still in vogue.

Another method consists in making parallel incisions at the side of the nail extending proximally the whole extent of the nail, and then reflecting a quadrangular flap. By this procedure the

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†From the outpatient department of the Surgical Clinic, Beth Israel Hospital.

deformities caused by injury of the nail-bed and the matrix are avoided. The entire nail is then removed. This is a method which does not always cause disfigurement of the nail, but it is painful, and leaves scars on the finger.

Authors' Technic.

Acute and chronic cases of paronychia requiring instrumentation are treated alike. The finger is first placed flat on the table. With the eye part of a probe held at right angles to the finger nail, the cuticle is very slowly pushed backward along its entire extent until the proximal portion of the nail appears. In some, before an attempt is made to force back the cuticle, soaking the finger in hot boric acid solution facilitates this step. It is important to push backward against the cuticle and not downward against the nail, as in the acute cases the latter procedure is always painful. Now the probe is hooked under the diseased nail at the proximal portion. It is surprising to note how easily and painlessly the nail can be lifted from its bed. The edge of the nail is cut longitudinally for a distance of one-eighth inch. Each side of the cut edge is grasped with either anatomic forceps or an artery clamp, and the nail is cut transversely, special attention being paid to the complete removal of the corners. Pain is seldom produced, as owing to the formation of pus and granulation tissue, there is a separation of the proximal portion of the nail from its bed. Attempts to remove more than this separated portion of the nail are always extremely painful. The distal portion of the nail remains untouched, as it protects the underlying nailbed, and is ultimately forced off by the new-growing nail. A wet dressing of boric acid solution is applied, and the patient sent home with instructions to bathe the finger, if it becomes painful, in hot boric acid solution every three or four hours.

Analysis of Cases.

An analysis of the large number of cases of acute and chronic paronychia which we have treated is worthy of discussion.

1. Eighty-five per cent. of our cases were of the acute type.
2. The thumb or index finger was involved in about 60 per cent. of the cases.
3. About 10 per cent. of the cases were accompanied by extensive superficial subcutaneous infections.
4. The Staphylococcus pyogenes was the predominating infective organism.

5. Eighty-five per cent. had no pain during the entire operative procedure, and 15 per cent. had only a little discomfort. No anesthesia, local or general, was required in any case.

6. Dressings were entirely removed in from ten to fourteen days.

Conlusions.

The method which we have described is strongly recommended. Our results in a large number of cases of paronychia lead us to the following conclusions:

1. The method is painless and requires no anesthesia.
2. The technique is simple.
3. It shortens the period of illness, and is therefore of great value from an economic standpoint.
4. It restores the parts to normal, and is therefore important from a cosmetic standpoint.

The Peach Tree.—Of the making of cures for tuberculosis there is no end. The latest comes from Japan. Dr. Genzarubo Koga has, it seems, been investigating the matter for over ten years, and has arrived at the conclusion that beneficent Nature has, in the leaves of the peach tree (*Amygdalis Persica* or *Persica vulgaris*), provided us with a specific against Koch's bacillus beside which all the hitherto vaunted vaccines and serums pale into insignificance. The active principle of peach leaves is believed to be hydrocyanic acid, and it is interesting to recall that Koch himself stated in 1890 that potassium aurocyanide in large dilutions had a very deadly effect on the bacillus *in vitro,* but not *in vivo.* It may easily be that Dr. Koga has hit upon a useful therapeutic agent. The peach was introduced into Europe from Persia, and reached England about 1562. It does not so far seem to have been used in medicine.—*Med. Press and Events.*

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COMMENT FROM MONTH TO MONTH

The First Year of the War Has Passed. Preventive medicine has scored a distinct triumph. As Mr. Tennant, the Under Secretary for War, has stated—there has been nothing like it before.

That up to July 1st, 1915, not as many as one thousand cases of typhoid fever had occurred in the British Expeditionary Forces is, along with all the sanitary precautions to keep the soldiers fit to fight, one of the outstanding features of the campaign in the West at all events. Five-eighths of the total cases were amongst the uninoculated, whilst the deaths were as five to one in the uninoculated as compared with the inoculated.

To show what armies had to cope with in former wars, some statistics may prove interesting. In the China-Japanese war of 1894, there occurred 150,000 cases of dysentery, and of that number some 38,000 died. Thus did the Japanese have their eyes opened to the necessity of preventive medicine, military hygiene and sanitary science in time of war. With that horrible experience behind them, they went into the Russo-Japanese campaign fully equipped and determined to wage war against the bacilli, whilst they sent their bullets after the enemy. They effectually reduced the incidence of disease in their army to the lowest point ever

known and paved the way for the greater triumphs of the present gigantic conflict.

The figures in connection with typhoid in South Africa have often been quoted. There were nearly 58,000 cases of typhoid with 8,022 deaths. In fact more died from typhoid alone than fell in the legitimate way in warfare by the bullets of the enemy. Eight thousand were killed in that way. Nineteen thousand soldiers were invalided home from South Africa as a result of typhoid. Thus the army lost through this one hidden enemy, the typhoid bacillus, 27,000 men.

In the Spanish-American war the United States sent into Cuba something like 117,000 non-commissioned officers and men. One-fifth of them fell ill of typhoid and 1,600 died.

Typhoid fever has been the bane of armies since the middle of the nineteenth century, but Sir Almroth Wright's discovery bids fair to banish it almost completely.

In this connection the most recent report from the Surgeon-General's office at Washington, published in the Journal American Medical Association, August 7th, gives striking figures of the efficiency of typhoid inoculation. Typhoid inoculation was made compulsory in the U. S. Army in September, 1911. By the end of the first quarter of 1912 practically all the U. S. army, in various parts of the world, were inoculated—an army numbering 92,000, and which had on the average about 350 cases of typhoid a year. In 1912, there were 27 cases of typhoid; in 1913, four cases; in 1914, seven cases; first half of 1915, one case. Only in two instances of the eleven cases, in 1913 and 1914, had the complete course of vaccination been administered. The complete course consists of three inoculations; and vaccination against smallpox is performed at the time the first dose of vaccination against typhoid is given.

This measure is now in use in the armies of Great Britain, France, Germany and Austria, and is probably being used to a certain extent in the armies of Russia and Italy.

An interesting item appeared in the *Medical Officer* the other day. It was to the effect that the Medical Officer of Health of Bristol, England, had recently vaccinated against smallpox the originator of the Anti-Vaccination Society.

It is unfortunate that vaccination is applied to inoculation against typhoid, as, in the lay mind, the two may become confused.

When the great war becomes cleaned up, there will be other triumphs for preventive medicine.

Editorial Notes

A NEW THEORY OF THE CAUSE OF ENTEROSTASIS

Intestinal stasis has been much before the medical profession and the public during recent years, owing largely to the very active propagation of his views by Sir Arbuthnot Lane and his followers. Both in Great Britain and in this country, however, a large number of medical practitioners have dissented from Lane's theory of the cause of intestinal stasis, some partly and others wholly, and the question has been made one for vehement discussion. A new view of intestinal stasis has been lately put forward by Dr. Arthur Keith, Conservator of the Museum of the Royal College of Surgeons, England, who took as his subject for the Cavendish lecture which he delivered this year a new theory of the causation of what he terms enterostasis (*West London Medical Journal*, July, 1915).

In this lecture Keith first pointed out the extent to which our knowledge of the living human body had been revolutionized by the discovery and application of the Roentgen rays. He found that an account published four years ago by L. R. Müller on the innervation of the bowel states definitely that the myenteric plexus differs from a true nerve plexus both in structure and in staining reaction. He therefore adopted the working hypothesis that the myenteric plexus represents a nodal and conducting system. He says that, if he is right in presuming that the myenteric plexus represents in the intestine a system which corresponds to the nodal and conducting system of the heart, then it is also to be expected that both systems should be developed in a corresponding manner. The other parts of the alimentary canal where peristaltic movements are known to arise were examined carefully without results, and then the various sphincteric regions of the alimentary tract were examined and the conclusion was reached that there was such a nodal center at the gastroesophageal junction of the mammalian stomach.

When Keith's search for a nodal system along the alimentary canal had reached an encouraging stage he visited Dr. W. B. Cannon in his laboratory at Harvard University, who told him that Alvarez had lately discovered that the commencement of the second part of the duodenum dominated the rhythm for the whole

duodenal loop. When the duodenal loop was cut out in segments and each segment kept alive in Locke's solution the rhythm or beat was fastest in the segment from the commencement of the second part and slowest in the segment from the end of the loop. On Keith's theory the upper segment had the greater amount of nodal tissue and was therefore the pacemaker of the duodenal rhythm. Alvarez found that the first segment of the jejunum had a slightly higher or faster rhythm than the last part of the duodenum, but that from the first part of the jejunum to almost the last part of the ileum the rate of rhythm decreased. At the last part of the ileum, if a piece of the ileocecal junction were left attached to it, the rate actually increased; but only if the ileocecal junction were left attached. This was explicable if Keith was right in regarding the ileocecal collar as a nodal center, as a pacemaker for the cecum and ascending colon.

Keith does not think either mechanical conditions or even derangements of sphincteric mechanisms can give an adequate explanation of all the phenomena of enterostasis. But when we transfer from the heart to the alimentary tract not only the anatomical and physiological data relating to its nodal and conducting system, but also our knowledge of cardiac pathology of heart block, or auricular fibrillation, of extra systole, and of delay in conduction, we seem to reach a more rational explanation of the motor derangements of the alimentary tract.

Keith does not agree with Lane in his explanation of enterostasis as the "drag, band, and kink" theory. In the first place Keith brings into the foreground the musculature of the alimentary tract, which is recognized as the sole propelling power in the intestinal wall. In Lane's theory a defect in the musculature of the bowel takes a very minor part in the causation of stasis. Further, Keith is of the opinion that his theory is the more in harmony with the appearances observed by clinicians and pathologists, and because it rests on a better basis of anatomical and physiological fact, he believes it will finally be accepted.—*Medical Record.*

CALCIUM IN PHTHISIS

An interesting clinical report on the use of calcium chloride in the treatment of tuberculosis, by Dr. Thomas Beasley, of Indianapolis, Indiana, appeared in the January, 1915, issue of *Indianapolis Medical Journal.*

Calcium chloride solutions, writes Dr. Beasley, have not been found incompatible with the physiological functions of the human economy; on the contrary, the calcium salts have a peculiarly selective inhibitory effect upon the tubercle bacilli in living tissue. Dr. Beasley has had under observation 486 patients in various stages of phthisis upon which treatment with the calcium salts was used, the method of administration being by intravenous injection. None of these cases were engaged in occupations where calcium might have been absorbed directly. He also experimented with rabbits, using the iodide and chloride of calcium intravenously successfully; the best results apparently being obtained from the chloride.

The treatment can be adopted in any stage of the disease. The doses in some cases reached 15 grains, beginning in every case with two grains, and repeating each fifth day to the number of five injections. The apparatus used was the ordinary Leur 20 c.c. syringe. The dose of calcium is given dissolved in 20 c.c. of freshly distilled water at a temperature of 103° F. which should be maintained throughout the procedure. The area of injection should be thoroughly sterilized before the operation and no dressing used afterwards. Stress is laid upon the avoidance of infiltration of the surrounding tissues, otherwise sloughing may occur.

After each five injections two weeks should intervene before the second series of five, and this should be continued for two or three months after tubercular manifestations have disappeared.

The author of this method of treatment cautiously states that within the last five months six patients so treated for phthisis have been dismissed as apparently cured, but that they will be kept under observation for the purpose of further study.—*American Medicine.*

POISONS IN WARFARE

The foul, if clever, recourse of the Germans to the use of poisonous gases in the field and in explosive tubes are well illustrated in a book just issued, written by a chemist and entitled "The Poison War." We have here a fair amount of elementary chemistry and toxicology which will not be fresh matter to our readers, and an interesting account of the chemistry of modern explosives, their manufacture, and the materials on which their foundation is based, which will be new to most of them. Also certain facts are brought to light which show how completely the Germans have ignored

the agreements which they have signed as to excluding certain devices in warfare. "The perfidious dual rôle by Germany for years past during international discussions upon the customs of civilized warfare will be better appreciated," Mr. Roberts writes, "if I say that the bulk of the Teutonic poison shells recently recovered by the French bear the date 1911 and that the poison-gas asphyxiating apparatus (described in this book) was under German military consideration in the year 1909." The last Hague Conference was held in 1907. German shell and shrapnel are described as containing considerable quantities of phosphorus. The plea has been put forward that phosphorus was used for illuminating purposes, and thus the better to ascertain the enemy's position, but unfortunately for this excuse these shells have been fired in thousands during broad daylight. The writer has evidently been in close touch with these new war devices, for he describes the incendiary pastilles, Zeppelin bombs, thermit, and so forth, in terms which show that he has actually handled these infernal machines. With regard to Zeppelin and flying-machine bombs he thinks much remains to be accomplished in the way of research and invention. The chief problem appears to be the accurate dropping of bombs, which in the present state of our knowledge have to be light in weight, with a minimum of danger to the machine's crew. On the whole, the view is favored that these difficulties might conceivably be overcome by using wide-spreading poison instead of fire or explosives. It is doubtful whether air attacks have been so far a real menace to our insular position, but we have to reckon with an enemy absolutely unscrupulous in his methods and stopping at nothing that is contrary to all humane dictates. Finally, warfare conducted by poisonous shrapnel, gases, explosives, and bombs opens up fresh considerations for medical treatment.—*The Lancet.*

News Items

Dr. John R. Irwin, Cobourg, Ont., has left to join the R.A.M.C.

Orillia, Ont., is giving three motor ambulances, built in Orillia, and manned by Orillians.

Eighteen Toronto physicians have applied for admission to the provisional school for medical officers to be held at Camp Niagara.

The plans for the new hospital at Amherst, N.S., were prepared by a German interned in the Detention Camp at that place.

Dr. James L. Wilson, of 1557 Bloor Street West, Toronto, who enlisted with the Imperial Army Service Corps, arrived in England on August 3.

Dr. John R. Whitman, Brantford, has left for Montreal, having secured a commission with the third university overseas contingent.

Captain James Henderson, M.D., Toronto, who has been practising in Regina, after serving in the South African War, has become attached to the R.A.M.C.

The Grand Lodge of the I. O. O. F. has voted $1,000 for an Oddfellows' Ward in the Ontario Government Hospital, being established by Hon. Dr. Pyne in England.

Dr. Alf. Haywood, Assistant Superintendent, Toronto General Hospital, who has recently been operated upon for appendicitis in London, sailed for Toronto on the 20th of August.

Stratford, Aug. 16.—The machine gun campaign got a neat start to-night when the City Council at its regular session received an offer from Drs. J. A. and Lorne Robertson, prominent local physicians, to issue a cheque for $1,000 at the Council's call to purchase a machine gun for Perth county soldiers. The offer was referred to the Finance Committee, with the Council's thanks, and will undoubtedly be accepted.

Dr. D. A. Volume, of Erskine, Alberta, visiting at his home in Kingston, is going to England, having received an appointment with the Royal Army Medical Corps.

Kingston, August 13.—Queen's stationary hospital, which left England on August 1, reached Alexandria, Egypt, yesterday morning, according to a cable received here. There are about 200 in the hospital unit, which is commanded by Lieut.-Col. F. Etherington.

The Canadian Red Cross Society has received an offer to take the Canadian wounded when they have sufficiently recovered to Norway free of expenses, and there provide them fishing. The society has found it impossible to accept.

London, Aug. 19.—Under a statute relating to the Faculty of Medicine, the Province of Ontario is declared, by Order-in-Council, to be a separate British possession, to which the second part of the Medical Act of 1886 shall be applicable.

A handsome bronze memorial tablet has been placed on the large commercial building at St. Paul and St. Sulpice Streets, Montreal, to commemorate the fact that on that site stood the first building of the Hotel Dieu Hospital, founded by Jeanne Mance in 1644.

The Academy of Medicine, through its Council, urges the necessity of immediate provision for wounded Canadians who will be returned to Canada in the near future. The Ontario Government is considering opening the Whitby Hospital for the Insane for this purpose, with perhaps a clearing station in Toronto.

A German, with headquarters in Winnipeg, was found guilty of practising medicine in Saskatchewan without being a licensed practitioner, in Police Court recently. He was sentenced to two months' imprisonment, with the option of paying fines and costs amounting to $186.70.

Saskatchewan government has promised a delegation of doctors representing the College of Physicians and Surgeons of Saskatchewan $10,000 to help defray the cost of a stationary field hospital for war service. The doctors themselves have pledged $10,000, and $20,000 will be asked from various organizations. It is intended to send a 200-bed hospital fully equipped and manned.

According to cables just received, Dr. Ella Scarlett-Synge, of Vancouver, organizer of the Women's Volunteer Reserve, has arrived in London on her way to Serbia, where she will carry out hygienic reforms in military camps under the auspices of the Red Cross Society. While in London Dr. Scarlett-Synge stated that it was her hope that the Women's Volunteer Reserve movement would spread rapidly throughout Canada. She said that Mrs. Brown was in charge of the interests of the Montreal unit.

After looking over several sites for the Ontario Government hospital, Colonel Hon. Dr. Pyne has chosen Orphington, in Kent, distant from London 15 miles, and a short distance from Dover and Folkestone.

The hospital will contain 1,040 beds. Half may be used for convalescent patients and those suffering from shock, and half for acute cases, or all for acute cases, depending on the necessity that may arise. The hospital is now under way and will be completed without delay.

Surgeon-General Jones authorizes the Canadian Associated Press to state that all three Canadian hospital units bound for the Dardanelles have arrived in safety. No Canadians were on the Royal Edward, and the rumors of the reported loss of some Canadian nurses are groundless. The three units referred to are No. 1 Stationary Hospital, in charge of Col. McKee; No. 3 Stationary Hospital, Col. Casgrain, and No. 5 Stationary Hospital, at Cairo, Col. Etherington.

The Stationary Hospital offered by Laval University has been accepted by the War Office and the organization of the unit will be begun at once. Col. E. W. Wilson, O.C. of the 4th District, wrote to Dr. E. P. Lachapelle, Dean of the Faculty of Medicine at Laval, recently, notifying him that the War Office had accepted the hospital.

The establishment calls for twelve officers, twenty-six nurses, 108 privates, and fourteen other ranks. The hospital will have just half the accommodation of a general hospital, 520 beds.

A continual stream of reinforcements for the Canadian Army Medical Corps must be maintained, officials say. Although the casualties in this branch of the service have not been heavy, the demands on them are many and more men are continually needed for the new hospitals which are being organized in France. Recruits will be accepted at the Craig Street Armories.

Reviews

The Development of the Human Body. A Manual of Human Embryology. By J. PLAYFAIR MCMURRICH, A.M., Ph.D., LL.D., Professor of Anatomy in the University of Toronto; Formerly Professor of Anatomy in the University of Michigan. Fifth Edition, revised and enlarged. With two hundred and eighty-seven illustrations, several of which are printed in colours. Philadelphia: P. Blakiston's Son & Co.

In the last few years there has been manifested increased interest in human and mammalian embryology. Thus, increased knowledge thereby has necessitated the issuing of a new edition of this excellent book for students. Without adding to the size of the book, the new knowledge has been incorporated and the old text completely revised. The book conveys an accurate account of the development of the human body.

Collected Papers from the Research Laboratory. Parke, Davis & Co., Detroit, Mich. Reprints. Volume 3. 1915.

The present volume is a collection of papers which have been published during 1914 in various American and foreign medical and pharmaceutical journals during the past year. There is also an index of the previous papers published. Our readers will find in these scientific papers much valuable up-to-date knowledge daily being accumulated by this laboratory.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume IV, Number III, (June, 1915). Octavo of 195 pages, 73 illustrations. Philadelphia and London: W. B. Saunders Company. 1915. Published bi-monthly. Price per year, paper, $8.00; cloth, $12.00. Canadian Agents, J. F. Hartz Company, Toronto.

There is in this volume a comprehensive discussion on diagnosis of injuries of the carpus: an incisive advocacy of immediate operation in appendicitis. W. J. Mayo talks on unsuccessful gastro-enterostomy for ulcer. Amongst other subjects dealt with are conditions of testicle, spermatic cord, kidney, malar bone, mandible. The volume runs from page 383 to page 577 and is fully and well illustrated.