

# Cancer of the Large Bowel

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THE large bowel comprises that portion of the intestinal tract which extends from the ileo-caecal valve to the anal orifice.

## ANATOMY—

Arterial supply and venous return are segmental, i.e.—

The right colic artery supplies the right colon and the terminal ileum; the midcolic, single or double, supplies the transverse colon; the left colic supplies the descending colon; the three sigmoid branches of the inferior mesenteric supply the sigmoid loop and the terminal artery (sup. haemorrhoidal) supplies the upper rectum.

The ampullary portion of the rectum is supplied by the middle haemorrhoidal arteries and the perineal portion of the anal canal by the inferior haemorrhoidal branches of the internal pudics.

All of these arteries anastomose and inosculate freely but in any resection which plans to divide any one of the arteries at or near its point of origin the whole extent of the bowel supplied by it should be removed in order to ensure viable tissues at the site of anastomosis.

The tributary veins closely follow the course of the arteries.

Lymphatic drainage—There is a set of lymph nodes closely applied to the wall of the bowel—paracolic glands.

Occasional nodes are found along the course of the lymph channels, but large nodes are situated near the midline and these should be removed in every case of resection for carcinoma.

In the surgical treatment of cancer of the large bowel the axiomatic procedure should be followed—i.e.—removal of the primary growth, removal of the drainage lymph nodes and removal of all the lymph-channel-bearing tissue between these two points.

It must be remembered that cancer of the ampulla of the rectum may drain to the lymph nodes on the lateral pelvic walls whilst cancer of the anal canal will drain to the inguinal lymph nodes.

## PATHOLOGY—

Cancer of the colon proper—Ulcerative or scirrhus but always adenocarcinoma. More likely to be ulcerative in the right colon and scirrhus in the left colon.

Cancer of the rectum proper—Ulcerative in one or other form.

Cancer of the anal canal—Epithelioma.

Cancer of the scent glands—Adeno-carcinoma but with characteristics differing from adeno-carcinoma of the intestinal mucosa.

Complications—Para colic infection with inflammatory mass or even abscess. Quite common in the ulcerative papillary carcinoma of the caecum and simulating retro caecal appendicitis with abscess or even large para nephritic abscess.

Para colic abscess also seen in cancer of splenic flexure and quite commonly in cancer of sigmoid colon where the condition closely simulates diverticulitis.

Indeed the frequent association of diverticulosis and cancer of the sigmoid make a differential diagnosis a matter of some concern. For my own part

I feel that they are not really associated as cause and effect although I am certain that an obstructing carcinoma will precipitate a diverticulitis in a pre-existing diverticulosis.

Metastasis—We are taught to consider that cancer of the large bowel metastasises slowly—or late in the disease. Also that the scirrhus type is more benign and more localized than the ulcerative type.

But there are certainly enough exceptions, even to prove the rule.

How frequently one sees a scirrhus cancer which is favourable for radical resection except that the liver is full of metastatic nodules.

The explanation is that the scirrhus cancer has been present for a year or more before it has given rise to any signs or symptoms and during the whole of that long period there has been opportunity for metastatic spread. Whereas, in the ulcerative type the bleeding either visible or occult attracts attention at a comparatively early stage of the disease.

Statistics are valuable in their way. But it is little comfort to the individual to have averages quoted when he belongs to the class of the exceptions.

Let me cite a recent case in my experience:—A man of 52 was in Egypt during the 1914-18 war and was laid up for a month with dysentery. In the following year he had a recurrence and for the succeeding 5-6 years had repeated minor attacks. But for 12-15 years he had been quite well with normal regular bowel movements. He was a healthy vigorous specimen and had recently been extremely active in the Home Guard of his Maritime city.

Three weeks before admission to hospital and out of a clear sky he was suddenly seized with epigastric pain, tenderness, anorexia, some vomiting and rapid loss of weight and strength.

Investigation revealed an increasing tenderness in the epigastrium, an enlarging liver (upwards rather than downwards) with pain on compressing of ribs. No fever, no leucocytosis, no jaundice either clinical or chemical. X-rays of the gastrointestinal tract negative—digital examination of rectum negative—stool negative for occult blood. The history suggested an amoebic abscess of the liver and emetine was administered for five days with no benefit but a rapidly increasing pain, tenderness and lassitude. Jaundice also appeared in an icteroid staining of the sclera. Exploratory laparotomy revealed a tense liver much enlarged upward and containing numerous subcapsular nodules. Biopsy of the liver margin revealed undifferentiated carcinoma completely filling all the radicals of the portal and hepatic vein capillaries and crushing the liver cells.

He died a liver death in 48 hours simulating a very rapid acute yellow atrophy.

At autopsy the liver weighed 2950 grams and in the ampulla of the rectum well beyond the reach of any examining finger was a nodule 1 c.m. diameter, freely movable on the submucosa, not ulcerated. The lymph channels proceeding therefrom were visible to the naked eye and choked with carcinoma. The regional lymph nodes were the size of Lima beans and entirely converted into masses of carcinoma. The entire course of the disease from onset of first symptom of epigastric pain to death was 5 weeks.

Let me cite a case illustrating the swing of the pendulum in the other direction. In 1937 a man of 63 was referred for scirrhus cancer of the sigmoid loop. Laparotomy revealed numerous nodules in the liver some of them umbilicated. A resection and end to end anastomosis was done with the

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object of making him comfortable for the remaining six months of his life. He reports regularly once a year and his only anxiety is to keep down his weight.

Truly our ignorance of carcinoma is profound!

Two more cases present a problem for treatment and for prognosis:—

Four years ago a woman in her fifties and with a strong family history of carcinoma had bleeding from the bowel. Examination revealed two small papillomata which were removed by a surgeon and submitted to pathological examination. Many pathologists of experience and renown unhesitatingly confirmed the presence of adeno-carcinoma.

A similar case in a man of 60 plus has been under observation for almost a year.

In both instances the trauma of removal disappeared leaving a smooth mucosa with no evidence of induration.

Should such cases be subjected to radical resection and a permanent colostomy? I think not.

#### SYMPTOMS AND SIGNS—

Pain; Bleeding; Obstruction.

Pain due to the cancer per se is encountered only when the lesion is in the anal canal—at or near the orifice. Such pain simulates the pain of a chronic fissure ani.

Bleeding—May be visible or occult.

When visible it may be clear bright blood of small or large quantity or may be mixed with quantities of mucus and of a very offensive odour.

In any case the examination must be continued until a lesion is discovered which completely explains the type and character of the bleeding.

Occult bleeding may be of considerable quantity but as it is mixed with the stool it escapes the notice of the patient. In such cases a marked secondary anaemia may be the only complaint. Examination of the stool by appropriate tests will explain the anaemia.

#### OBSTRUCTION—

It is helpful to classify intestinal obstruction as follows:

1. Acute complete with strangulation.
2. Acute complete without strangulation.
3. Chronic incomplete.
4. Chronic incomplete becoming complete—
  - (a) Active.
  - (b) Passive.

In cancer of the large bowel the obstruction is of the chronic incomplete variety—the typical example being the annular scirrhus carcinoma.

Not until the whole circumference is involved, does the obstruction manifest itself as the uninvolved segment is capable of much stretching and distension.

The muscle layers of the bowel proximal to the lesion undergo a compensatory hypertrophy and the force of the peristaltic wave successfully overcomes the increasing obstruction. This is the stage of "compensation."

If the narrowed lumen suddenly becomes blocked with acute oedema—or foreign body such as skin of fruit or vegetable this hypertrophied muscle layer responds with vigorous contraction, hence violent cramps—reflex vomit-

ing from peritoneal injury—a stormy scene—the “Active” type of incomplete obstruction becoming complete.

But if the hypertrophied muscle gets tired of its increasing task and fails to respond, there will be ineffectual weak peristalsis therefore complete obstruction of the “passive type” with no cramps or pain—no vomiting until late—only the complete obstruction, an increasing abdominal distension and evidences of exhaustion and later, toxæmia.

In the presence of incomplete obstruction an examination of the abdomen may reveal very interesting features.

If the wall of the abdomen is flaccid and sufficiently thin a visible peristalsis of the colonic pattern may make the diagnosis and also the site of the lesion.

But visible peristalsis is not pathognomonic of incomplete obstruction, only of increased peristalsis, as note the case of the marantic infant with diarrhoea.

But “palpable” peristalsis is pathognomonic of chronic incomplete obstruction.

By “palpable peristalsis” I mean that under the hand the viscus in contraction feels like a solid tumour which after a moment relaxes and cannot be felt, only to reappear after the lapse of a variable period of a few minutes.

As an hypertrophied muscle in the wall of the viscus is essential to its contraction which simulates a hard mass, it is obvious that palpable peristalsis is present only when the muscle layer has been exercised and hypertrophied by increased resistance of a gradually developing obstruction.

#### METHODS OF INVESTIGATION—

The examination for any lesion of the large bowel should be carried out in a regular and standardized manner:

1. Detailed history with minute description of any alteration of bowel habit or stool characteristics.
2. General physical and abdominal examination.
3. Digital examination of the rectum.

This is so often neglected just because we are not equipped to carry it out with comfort to ourselves. Carry in the bag a pair of gloves, a tube of water soluble tragacanth lubricant and some talcum powder and thus be free of all inconveniences. After the examination wash the gloves while they are still on the hands, dry thoroughly, powder and remove by turning them inside out.

4. Proctoscopic examination, an office procedure.

5. Sigmoidoscopic examination—a simple procedure but much facilitated by having the patient on a table capable of being tilted into the Trendelenburg position.

I prefer the patient in the left lateral position (Sims) and the table tilted with a moderately high Trendelenburg.

6. Barium enema—with drainage and contrast plates if indicated.

Never give a barium meal to any case in which large bowel lesion is suspected until a barium enema demonstrates that there is no obstruction in the colon, otherwise the barium meal becomes inspissated and impacted and a complete obstruction is precipitated.

## TREATMENT—

The operative treatment of any cancer of the large bowel is an ordeal. In many instances the patient is a poor risk because of age and associated degenerative changes. Therefore, whenever possible, a period of preparation should precede operation.

A secondary anaemia should be combatted, if advisable by repeated blood transfusions.

The state of function of kidney, liver and pancreas should be estimated by Blood Chemistry examination.

No anastomosis should be attempted in the presence of any obstruction, either generalized or confined to the bowel immediately proximal to the obstructing lesion. Oedema of the wall of the intestine leads to peritonitis from leakage either because sutures cut out or loosen.

Two or more stages in the operation will often bring a patient through successfully.

Decompression of an obstructed bowel.

In recent years great advances have been made over the jejunostomy and ileostomy of former times.

The small bowel can now be successfully decompressed by one of the following methods:

1. Levine tube.
2. Levine tube with Wangansteen suction.
3. Miller Abbott tube.
4. An atmosphere of 95% oxygen.

The large bowel can be decompressed by Caecostomy—and decompressed and defunctioned by temporary colostomy with long spur.

The site of the lesion determines the possibility of

- (a) Resection with restoration of continuity by anastomosis.
- (b) Resection with permanent colostomy.

Every effort should be made to restore continuity with preservation of the anal sphinster.

This can be done when the lesion is situated anywhere between the ileo-caecal valve and two inches above the peritoneal pelvic floor.

I have seen and done many permanent colostomies which functioned perfectly. But I have seen only a very few patients with a permanent colostomy who were happy and I have seen many who deeply regretted their recovery from operation which left them in that condition.

A few years ago a prominent surgeon stated that we had conquered the problem of cancer of the rectum by a complete anatomical resection but leaving a permanent colostomy. I consider that a victory strongly tinged with defeat.

Especially in the elderly subjects is a colostomy a hardship—and particularly in those of a low social status. These latter spend their remaining days in a home for incurables. Even in the younger class they lead an unenviable existence. No boarding house or public shelter will put them up and they move from pillar to post, frequently unable to keep employment.

I do not think that we should inflict a permanent colostomy upon any individual unless and until he or she thoroughly understands what is before them.

It is our function to maintain or to restore health but this question should be faced. Are we justified in prolonging a life which will have no happiness or contentment and will be of no economic value?

In closing I will just touch upon Epithelioma of the anal canal.

In its early stages simulating a chronic recurring fissure and it presents as a small indurated and painful ulcer. At times only a biopsy will distinguish between the two conditions.

#### TREATMENT—

1. Temporary inguinal colostomy.
2. Radiation — by X-ray, — Moulded radium plaque, or Radon implantation.
3. X radiation of the inguinal regions and extending around the groins to the perineum.
4. Complete dissection of the inguinal regional lymph nodes and of the tissue carrying the lymph channels. This dissection should begin at the inguinal lymph nodes and progress in a retrograde direction to the margin of the anal orifice.

# \*Shock Treatment in the Depressions of Later Life

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THIS report should be considered as a progress note on a method of therapy which we have used too short a time to be dogmatic about but which seems to offer a successful solution to a very difficult problem in therapy—the treatment of depression in later life. I shall briefly review the literature on shock therapy and describe our experiences in the Psychiatric Clinic of the Dalhousie University Medical School.

In the past twenty years psychiatry has become increasingly more therapeutically minded and therapeutically capable. Perhaps no single thing has contributed as much to this advancement as the introduction of shock therapies. So much have they impressed the psychiatrist that one cannot pick up a technical journal without finding at least one or two articles dealing with the subject. With the widespread use of these methods it is important that physicians working in other fields of medicine should know of these techniques, what can be expected of them, and what dangers are involved, since it is through them that we must obtain patients at the most treatable time and families frequently turn to them for advice in this matter.

The term "shock therapy" was first introduced in 1934 by Sakel of Vienna to describe his method of treating schizophrenic psychosis or dementia praecox by the production of repeated insulin comas. The idea originated accidentally but, it immediately became apparent that by this method there was a greater recovery rate than in cases not treated and the procedure became literally world wide. I do not intend to discuss insulin shock here. Suffice it to say it finds its greatest application in the treatment of schizophrenic psychosis—that if instituted within the first year of the illness it holds out real therapeutic hope and that the technique is so complicated and needs so much adequately trained personnel that it can only be successfully used in a properly equipped and staffed psychiatric hospital.

In 1935 a second method of treatment was introduced by Meduna, also of Vienna. Believing that there was some biological antagonism between convulsive illnesses such as epilepsy and the schizophrenic process he looked around for a convulsive producing drug and finally hit upon pentamethylenetetrazol—known as Metrazol in this country and Cardiazol in England. This drug too became widely used in the treatment of schizophrenics with undoubted results but it was soon found that the cases that did best were those in which there was some admixture of mood—that is, where there were depressive features as well. It was natural then that the method should be tried in the treatment of frank depressive psychosis. It is to this group of psychosis that I should particularly like to direct attention to-day. The larger number of depressive psychosis are those which are part of the symptomatology of a manic depressive illness occurring generally in people between the ages of 20-40,

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each attack bearing a good prognosis in itself with the strong likelihood of complete recovery in a period of 6-9 months but with the possibility of recurrence at some time during the individual's life. The illness is marked by depressed mood, feelings of hopelessness and suicidal danger and general slowing up of thought and action processes with poor sleep, loss of weight and general decline in physical health. There is no doubt that shock therapy will effectively shorten the period of illness but whether it is justifiable to assume the slight risk of shock therapy in this class of case might be debated. There is another group of depressions however in which there can be no doubt of the need for shock therapy—the depression coming in the later age period of life from 45 on which is commonly called the involuntional or menopausal depression. This is the depression in a man or woman of this age period characterized by a mood disturbance which may be of pure sadness or may be more irritability, anger or constant worry, with marked agitation, hopelessness for the future, suicidal ideas and often a delusional content concerned with ideas of guilt, poverty or bizarre body disease. Going along with this is a constant decline in physical health with poor nutrition, poor sleep and the constant danger of intercurrent disease. Suicide is frequent in this group of cases. There is an extremely poor prognosis—not over 25% recover spontaneously and in the best of mental hospitals the recovery rate is only around 40%. Even among those who do get well the illness is prolonged—certainly from six months to two years. Convulsive shock therapy seems practically a specific for this type of depression—the illness can be interrupted in a few weeks—with a high percentage of recoveries or marked improvements. It is my personal impression that this information is of particular value for us in Nova Scotia since the number of involuntional psychosis seen in the private practice of psychiatry here strikes me as being surprisingly large. Henderson states that this type of psychosis is very prevalent in Scotland—it may well be that the Scots ancestry of so many of our people predisposes to this type of psychotic reaction. The extension of convulsive shock therapy to the depressive reaction was first tried on this continent, notable by Bennett in the University psychiatric clinic at Omaha. The results proved extremely gratifying. Bennett's original paper in 1938 reported the treatment of ten depressed patients—all of whom showed marked improvement within two weeks of treatment. In a footnote to this article he reported eleven more patients, eight of whom were past fifty-five years of age who had the same results. Since the publication of this encouraging report, the literature has been filled with accounts of similar experiences.

The essential feature of this method of treatment is the production of a convulsion of the epileptic sort. The method as described by Meduna was by the intravenous injection of 5-8 c.c. of Metrazol with consequent convulsion. The injection had to be given rapidly, and the dosage was always a little a matter of guess. Ideally the convulsion, similar in nearly every way to the epileptic convulsion, followed in 15-60 seconds. This period of waiting was apt to prove very distressing, the patient being restless and frightened. If the dosage was too small no convulsion resulted and the patient remained in this state of fear till a second dose could be given and a convulsion induced. For a period from one-half to one hour after the patient remained restless, confused and often difficult to manage but then was able to resume the usual activities of the day.

The results of this method of therapy in the depressive psychosis were eminently satisfactory. It is generally agreed that the recovery rate approaches 80%, with improvement within three weeks and that remissions are not very common and can be controlled by further treatment if necessary. However the method had considerable drawbacks. Chief among these are:

1. Traumatic fracture of a bone: it was soon found that fracture of a vertebral body, almost always in the upperdorsal region, was not uncommon. However, the fate of such fractures somewhat took away the dread of this complication as it seemed that the only discomfort they caused the patient was a period of a few days pain, and then they healed perfectly without special treatment. Neurological lesions or further degenerative change in the bone have not been reported. (In the American Journal of Psychiatry for January, 1942—the follow up reports of eight such fractures was published two years after occurrence and no neurological or orthopedic signs of progressive pathology were found.) Occasionally fractures of a long bone—the femur or humerus have been reported but they are rare. It has proved possible to largely eliminate these fractures as described below.

2. The unpleasantness of the experience for the patient making it often difficult to proceed with this treatment. Practically, this proved the main drawback to treatment.

3. The danger of organic injury to the brain which would later produce symptoms. It has been shown that in animal experimentation diffuse cerebral haemorrhages may occur when treated with excessively large doses of Metrazol and with repeated shocks. Many patients show a memory defect following treatment that practically invariably clears up in a short time. By means of electroencephalographic tracings one can demonstrate cerebral disfunction but on the whole this seems to be of a temporary sort and reversible. Of all the objections which may be raised to convulsive shock therapy the possibility of permanent cerebral damage weighs most heavily against the method.

4. Death of the patient: this has been astonishingly rare. In a careful survey of 18,543 patients treated thus only 43 deaths were reported and only six of these could be directly related to the treatment. It seems that the greatest danger to the patient's life is in treating a person with an early tuberculosis lesions as such lesions progress rapidly.

Many methods have been advocated for preventing the traumatic complications noted above. Of most success is correct posturing of the patient with proper restraint during the convulsion. A sandbag or pillow placed under the mid dorsal portion of the back prior to administering the treatment and this hyperextension maintained by pressure on the shoulders and pelvis. In this way the incidence of vertebral injuries has been sharply reduced. The arms and legs are gently restrained and fracture of the long bone is rare. Some clinics routinely proceed the administration of Metrazol with curare which produces a paralysis at the neuromuscular junction of a flaccid type. By this means the severity of the convulsion is cushioned and traumatic complications rarely occur. The only difficulty is the expense and the difficulty of obtaining the drug which is not yet commercially on the market.

In 1938 two Italian workers, Bini and Cerletti, reported on the production of convulsions by the passage of electric current through the frontal lobes of the brain rather than by the injection of a drug. This method had certain advantages over Metrazol which led to its almost universal adoption. These are:

1. The patient has complete anmesia for the treatment, consciousness being lost immediately, even though a subconvulsive shock has been given so that he does not fear his treatment and it is not difficult to get his co-operation.

2. The convulsion is a little milder and does not carry as much traumatic risk as with Metrazol.

3. The postconvulsive period is less disturbed, the patient usually sleeping for a short time and soon recovering his usual demeanor so that this method is capable of use in an outpatient department as well as in hospital.

4. There is no necessity of intravenous medication, often a point to be considered especially when dealing with psychotic patients.

The technique of electric shock treatment in brief consists of the passage of an alternating current of 90-150 volts for a time period of .1-.4 seconds through the frontal lobes by means of electrodes of large diameter applied over the temples. The patient is postured and the same precautions taken as in Metrazol therapy. With the application of the electricity consciousness is lost and if the dose is adequate a convulsion is produced, lasting from 30-60 seconds. It is followed by a period of sleep and usually a gentle awakening some half hour later. The only contraindications are severe physical illness especially noting cerebral organic disease, cardiac disease, pulmonary disease and arthritis of the spine. The patient is preferably hospitalized but if necessary treatment can be instituted as an outpatient procedure.

I should like to briefly summarize the experiences and results obtained with such treatments in our hands. Therapy has been carried out in the Halifax City Home, on the private services of the Halifax hospitals and at the Dalhousie Public Health Clinic. Our cases as yet have been too few and the follow up too short to make a valid statistical report so I will outline roughly our experience and quote two representative cases. In December of 1941 we started using Metrazol extensively at the City Home on a group of depression all of whom had been ill for over two years and were considered chronically psychotic. Several of the cases have shown improvement, in two of them of a striking degree. The results were so impressive that it was possible to get funds for the purchase of the necessary equipment for instituting treatment by electric shock.

We have now largely abandoned the use of Metrazol in favour of the electric shock treatment, our experience agreeing with the literature in finding many advantages in this method. Chief among these is the attitude of the patient towards therapy and the fact that we are able to treat many patients in the outpatient department that previously would have been neglected till their condition became serious enough for hospitalization in the Nova Scotia Hospital. This is particularly important in a city such as Halifax where we have no facilities for adequate hospitalization and treatment of early mental cases without the expense of constant private nursing. Outpatient treatment does not give the best chance to such patients but it is better than nothing. Our cases are first subjected to thorough physical examination including X-ray of the chest and spine. If satisfactory they are given appointments for treatment coming two or three times a week without breakfast and having had no sedative the previous night. They are accompanied by a responsible relative. The treatment is given, they rest at the Clinic for half hour to one hour and are then allowed to return home. If no improvement is noted after four or

six treatments, the method is discontinued—otherwise regular convulsions are given until improvement is well under way—usually six or seven treatments. The patient is seen weekly after this is accomplished for psychotherapeutic purposes—his illness is discussed with the idea of gaining insight into the causal factors and aiding his future adjustment. In the community he is supervised and watched by the psychiatric social worker. We believe the continual follow up to be important if improvement is to be maintained and recurrence prevented. If progress stops or the patient is slipping back one or more added treatments are given, the method being used empirically in this way.

I should like to report two cases—both treated with Metrazol:

CASE 1. A forty-two year old man who had been ill since December, 1938. He had been depressed, crying, worried constantly about his health, worked very spasmodically and had felt that the police or the army were after him. He talked of suicide. Sleep was very poor and he had lost weight. During this time he had been treated by sedatives, tonics, etc., with no effect. At our first contact we had no facilities for shock therapy and commitment was advised to the Nova Scotia Hospital, and he was admitted on November 13. He improved steadily but on December 19 his wife insisted on removing him against advice. He immediately slumped and by the first of February was as bad or worse than he had ever been. Metrazol therapy was decided upon and he was admitted to the City Home for that purpose. The first treatment was given on February 12, a good convulsion being obtained but immediately after the patient complained of severe pain in his back. X-ray examination revealed a compression fracture of the second and fourth dorsal vertebrae. An orthopedic consultation suggested no specific treatment. After two days the pain in the back completely disappeared and the patient was discharged. On February 24 the patient and his wife returned to the Psychiatric Clinic asking that treatment be continued since the back had caused no further trouble and his spirits were so much better. This was refused but they were so insistent that after a careful explanation of the dangers involved it was agreed that treatment be continued.

Between February 27 and April 22 he had seven convulsions. At no time were there any further complaints concerning the pain in his back. His depression steadily improved and he has been able to return to steady laboring work.

This case illustrates the most frequent complication of convulsive therapy but also how trivial such a complication is in regard to the health and function of the person.

CASE 2. A forty-five year old Jewish woman who had been depressed for four years, crying a good deal, constantly worrying over the past, and recounting the story of her family difficulties, her own illnesses and the way she had been neglected by her numerous medical attendants. In this time she had been treated in many ways, the only things which seemed of value being the use of theelin by a psychiatrist she had consulted in Boston, but this improvement had not been maintained. She felt hopeless for the future and had made a suicidal attempt. She had been hospitalized for a few months in a mental hospital without improvement. Her sleep was very poor despite the fact that she had taken large doses of sedatives. She was admitted to the Private Pavillion of the Victoria General Hospital and given seven Metrazol

convulsions over a two week period. After the fourth convulsion she began to show improvement which has steadily continued. She is now able to look after her home herself doing a good share of the house work, has few periods of depression, is gaining weight and sleeping well on a very small dose of sedative. She is still seen weekly with the idea of seeing that improvement is maintained and to guard against any set back by the administration of further therapy.

To summarize—convulsive shock therapy is described and its usefulness in several types of mental disease pointed out. However, there is one illness, involuntal depression where this method seems to be almost a specific cure and thus to give good results in a reaction type that previously had resisted all types of therapy and in which the spontaneous recovery rate was low and long delayed. Contraindications and dangers are mentioned. It should be stressed that shock therapy is not the "be all" and "end all" of treatment—the patient should be followed and psychotherapeutic attempts be made to change the adjustment to life which led to the breakdown and in this way recurrences are best prevented. Two illustrative cases have been presented.

# The Treatment of Atopic Dermatitis in Adults

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THERE are very few diseases of the skin which may present so vexing a problem in therapeutics as atopic dermatitis, more commonly known as eczema. This, of course, is due to the fact that the disease overlaps two fields of medicine, namely dermatology and allergy. This dual nature makes it necessary for the practitioner or specialist to have a reasonably complete knowledge of both fields, in diagnosis as well as in therapeutics, before such a condition can be treated with any degree of satisfaction.

The following is not intended to constitute an authoritative review of the subject. It merely aims to summarize the outstanding features of the condition, and the methods used by the writer in diagnosis and treatment, with a brief case report appended, to illustrate how such a case may be brought to a successful conclusion.

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Atopic dermatitis in adults almost invariably occurs in individuals who have suffered from infantile eczema of a greater or lesser degree of severity. Furthermore, such individuals usually present a strongly allergic family history, which can almost always be elicited on close questioning.

As is often the case in patients with a strongly allergic background, there may also be distinct evidence of an allergic tendency related to other systems, such as mild or severe attacks of hay fever or asthma, angioneurotic oedema, or other allied conditions.

The disease, which, as has been stated, originally reveals itself as infantile eczema, persists throughout infancy and childhood, either continuously or with brief or prolonged remissions, and finally extends into adult life, continuing until some form of intelligent treatment is instituted to cut short its progress.

The most outstanding symptoms are (a) a marked scaliness of the skin and (b), an intense pruritus.

Two results directly attributable to this symptomatology, tend to occur. Both of these can be traced to the almost continuous scratching, which is employed to remove scales and to relieve the pruritus.

Firstly, the ceaseless scratching leads to an intense thickening or lichenification of the skin, which, in a severe case, may be very disfiguring.

Secondly, superimposed infection due to scratching with unclean nails, often leads to impetiginization of large areas of the affected skin. This, of course, constitutes a complication, which must be dealt with before the underlying condition can be attacked.

If no specific treatment is instituted, a form of the disease known as Besnier's Prurigo is occasionally encountered. This consists of a permanent thickening of the skin at the bends of the knees, elbows, wrists and groins, that is, a flexural dermatitis, in which the scratching occurs particularly at night during sleep. The patient awakens in the morning finding his skin severely scarified, with no recollection of having done any scratching the night before.

All in all, the results may be very tragic, with marked disfigurement, and inability on the part of the patient to take his normal place in society, or even to earn his livelihood in an ordinary occupation.

Very little, if anything, need be said regarding the actual diagnosis of the disease. The extreme scaliness of the skin, the intense pruritus, the flexural situation of the most marked lesions, the allergic family and personal background, and the resistance to purely local treatment, tend to make the diagnosis self-evident.

### Treatment

Briefly, this may be summarized as follows:

- (1) Complete supervision of daily life, with submission to strict discipline and routine.
- (2) Eradication of superimposed infection.
- (3) Determination of allergic sensitivities by suitable skin tests.
- (4) Dietary restrictions to eliminate food allergy.
- (5) Desensitization by subcutaneous injections of suitable extracts of allergens to which the patient is found to be sensitive.
- (6) The use of keratoplastic ointments to remove and prevent formation of scales, to allay itching, and to treat the existing lichenification of the skin.

These methods will be illustrated in the case report which follows.

\* \* \* \* \*

### Case Report

Patient—M.L. Age 18. 27/5/42

*History.* Dry scaly eruption on face, neck, arms, legs, hands and feet. *since early infancy.*

Family background strongly allergic, as mother, grandmother and aunt all suffered from eczema. Has had several remissions since onset, but has never been completely free from a certain degree of *pruritus and scaliness*. For the past one to two years, has been much worse, with *moist and crusted lesions* on arms, legs and scalp. Exercise seems to aggravate the condition, and rest to improve it. *Has mild seasonal hay fever.*

Suspects milk, chocolate, house dust and wool as chief offenders.

### Physical Examination

Head and neck . . . . .negative  
 Chest . . . . .negative  
 Heart . . . . .negative  
 Blood Pressure . . . . . $\frac{116}{72}$   
 Abdomen . . . . .negative  
 Skeletal System . . . . .negative  
 Nervous System . . . . .deep reflexes somewhat hyperactive, otherwise negative.

### Haemogram

Red Blood Cells . . . . .4,320,000  
 White Blood Cells . . . . .7,640  
 Haemoglobin . . . . .84%  
 Differential Count  
 (a) Polymorphs . . . . .58%  
 (b) Lymphocytes . . . . .32%  
 (c) Monocytes . . . . .1%  
 (d) Eosinophils . . . . .8% (indicative of allergy)  
 (e) Basophils . . . . .1%  
 Basal Metabolic Rate . . . . .Plus 7

*Skin*—Dry, scaly eruption on scalp, face, neck, cubital areas, forearms, wrists and hands, popliteal areas, legs and feet. Is intensely itchy, *particularly at night, and patient scratches during sleep. Most severe in flexural areas, where skin is markedly lichenified.* On scalp, arms and legs there are yellowish or honey-colored, "Stuck-on" crusts, and denuded areas which exude yellow serum. Fine whitish scales are shed whenever patient moves.

*Diagnosis*—Atopic dermatitis (secondarily infected) with elements of Besnier's Prurigo.

### Treatment

#### 1. Complete Supervision of Daily Life.

For this purpose, it was deemed advisable to hospitalize the patient during the first few weeks of treatment. By this means, the benefits of rest, plus supervision, discipline and routine were all obtained. Hospitalization was continued for one month, after which time patient was discharged to his home, with strict orders to follow a definite plan of daily existence which was outlined for him.

#### 2. Eradication of Superimposed Infection.

This was satisfactorily controlled by shaving the scalp, and by applying starch poultices to remove crusts on all affected areas. These were followed by continuous dressings, consisting of gauze impregnated with a 5% emulsion of sulfathiazol in triethanolamine, white beeswax and liquid paraffin. At the end of a week all impetiginized areas had disappeared.

#### 3. Determination of Allergic Sensitivities.

This was accomplished by performing five series of intradermal tests. The writer prefers the intradermal method because of the greater accuracy and uniformity of its results. The findings obtained by these intradermal tests were as follows:

##### SERIES I

House Dust	Marked
Kapok	Slight
Feathers	Marked
Orris	Negative
Cotton Seed	Very Slight
Dog Dander	Moderate 2 plus
Horse Dander	Slight plus
Fish Glue	Negative
Flax Seed	Negative
Cat Dander	Marked 2 plus
Tobacco	Moderate
Horse Serum	Negative
Pyrethrum	Negative
Silk	Negative
Wool	Moderate 2 plus

##### SERIES II

Egg White	Negative
Milk	Marked
Wheat	Moderate
Beef	Moderate plus

Lamb	Negative
Potato (white)	Slight
Potato (Sweet)	Slight
Rye	Slight plus
Lima Beans	Negative
Orange	Negative
Pork	Slight Plus
Rice	Moderate
Green Pea	Negative
Spinach	Slight
Tea	Negative
Coffee	Slight plus
Chocolate	Slight plus
Sage	Slight

##### SERIES III

Rhubarb	Moderate
Turnip	Negative
Radish	Slight plus
Black Pepper	Slight plus
Onion	Slight
Grapefruit	Slight plus



Banana.....	Slight	Pear.....	Moderate 2 plus
String Bean.....	Slight 2 plus	Raspberry.....	Slight 2 plus
Tomato.....	Slight 2 plus	Blueberry.....	Marked
Celery.....	Slight 2 plus	Strawberry.....	Moderate
Cabbage.....	Negative	Cranberry.....	Slight 2 plus
Carrot.....	Moderate	Pineapple.....	Slight
Barley.....	Moderate plus	Cucumber.....	Slight
Oatmeal.....	Moderate plus	Prune.....	Slight
Codfish.....	Slight 2 plus	Ginger.....	Slight plus
Peanut.....	Negative		
Cherry.....	Slight 2 plus		

## POLLENS

SERIES IV			
Beet.....	Very slight	Sweet Vernal Grass.....	Negative
Lettuce.....	Slight plus	Orchard Grass.....	Slight
Asparagus.....	Slight	Plantain.....	Moderate
Cauliflower.....	Negative	June Grass.....	Slight
Lobster.....	Slight plus	Timothy.....	Slight
Lemon.....	Moderate 2 plus	Redtop.....	Slight
Apple.....	Very slight	Ragweed (dwarf).....	Slight
		Giant Ragweed.....	Slight

## 4. Dietary Restrictions.

A diet was prepared, excluding all those foods to which a reaction greater than slight 2 plus was obtained.

Substitution for milk was accomplished by the use of a powdered soy-bean extract. Provision was made for deficiencies in calcium, iron and vitamins which might arise, by adding these in tablet or capsule form to the diet.

## 5. Desensitization.

This was carried out by graduated subcutaneous injections of a combined House Dust and Feathers extract, starting with a dilution of 1: 10,000, and gradually increasing the dosage and the concentration. It will be noted that other inhalant sensitivities were found, such as dog dander, cat dander and wool. These could be and were controlled by avoidance of the offending allergens (e.g. banishment of dogs and cats, and the use of cotton blankets and clothing).

## 6. The use of keratoplastic ointments.

For this purpose, tar was found to be most effective. A proprietary preparation consisting of a coal tar concentrate, prepared to equal a 10% crude tar ointment was used. It was white, and creamy in consistency, and was found to be much more pleasant to use than any other preparation which was exhibited. It was applied fairly thickly on all affected areas, on retiring at night.

7. In addition to these, the following were used in the early stages of the treatment, while symptoms were still severe:

(a) Calcium Gluconate, 10 cc. in 10% solution intravenously, once or twice daily to relieve itching.

(b) Sulfathiazol ointment, (30%) to be applied to all scratched areas after patient had been discharged from hospital. This was found to be effective in preventing any recurrence of impetiginization due to scratching.

## Results

The results of this method of treatment were very gratifying, if not dramatic. As stated above, the superimposed infection disappeared in one

week. At the end of one month much of the lichenified skin had peeled from hands and feet. Itching had decreased to a minimum, and, with the exception of absent-minded rubbing, ingrained during years of irritation, scratching had materially disappeared. The skin over the entire body, which had previously been flushed, thickened and opaque, took on a new clarity and translucency.

After three months, with the exception of an occasional period of almost imperceptible scaliness, the patient presents an entirely new appearance, although there is still slight thickening on the dorsal surface of the wrists and the popliteal areas, which may be expected to be materially improved in the near future.

### Conclusions

In conclusion, it may be stated, that only by such an elaborate program of diagnosis and treatment as outlined above, may any reasonable progress be made in the relief of this affliction. The physician who essays to treat a disease of such complex nature by the mere application of lotions and ointments is doomed to disappointment from the outset—not only to his own disappointment but also, and more important, to the patient's.

# An Unusual Experience

J. I. O'CONNELL, M.D.

Curling, Newfoundland

**E**CLAMPSIA is considered to be one of the most critical complications of pregnancy, but fortunately, due to pre-natal observation and instruction it is becoming rarer.

In my own territory personal letters and leaflets are sent yearly to nurses and midwives requesting them to have a sharp look-out for symptoms such as oedema, headache, vomiting, blindness, etc., in their expectant cases especially during the last two or three months. Stress is laid, too, on the necessity of the frequent examination of the urine.

In spite of all advice given, however, occasional cases arise, doubtless often due to lack of co-operation on the part of over optimistic patients and over wise relatives and friends.

At about noon on the 30th of January, 1935, I received a telephone message from a maternity nurse at a settlement ten miles from Curling, Bay of Islands, where I reside, but on the opposite side of the Bay. The message merely stated: "Come at once, serious maternity case. Motor boat left to meet you at the edge of the ice." That was a large order as the Bay was only frozen over for six miles out from Curling, but still unsafe for travel. Besides the day was cold, the thermometer registering zero.

I left by horse and sleigh as soon as possible, going by road on the Curling side and after fully two hours, as the road was not well covered with snow, arrived at the "edge of the ice." The motor boat, covered only with canvas and manned by four men was awaiting me. The trip across the Bay, a distance of four miles, was far from pleasant as besides the cold, the wind was ahead and blowing "half-a-gale." In consequence the water was very rough. However, after butting the wind and sea for nearly two hours we eventually arrived at the settlement. The husband of the patient met me at the boat and at once conveyed to me the alarming news that his wife—a twenty-three old primipara—was having fits all day and that the baby was not yet born. On arrival at her home I found the patient semi-conscious, the nurse telling me that she had a heavy convulsion an hour before, the seventh since early morning. Fifteen minutes later she went into a severe convulsion. Morphine sulphate gr.  $\frac{1}{2}$  and atropine sulphate gr.  $\frac{1}{100}$  were given hypodermically as soon as the convulsion subsided and the nurse instructed to sterilize the instruments and to prepare the patient for examination. A catheter was passed and about four ounces of dark smokey urine were found in the bladder. At the examination I found I could admit four fingers into the os uteri and that there was no rigidity. The head was presenting and the occiput anterior.

I ruptured the membranes and decided to wait, but in about two hours she had another convulsion. Morphine sulphate gr.  $\frac{1}{4}$  and atropine sulphate gr.  $\frac{1}{200}$  were then given and later a high copious rectal flushing with plain warm water which was returned with some bowel movement. Whiffs of chloroform were next given and manual dilatation of the os done sufficiently to apply forceps and I delivered a still-born child with fortunately no injury to the

maternal parts. The placenta was expressed without difficulty. The time was now 11.00 p.m.

Consciousness returned about seven next morning and there were no further convulsions. She asked for water which was given her and later three ounces of magnesium sulphate. Milk and water were given throughout the morning and at noon I felt I could leave her with safety in charge of the nurse.

The return trip was even more unpleasant as new ice had formed during the night which meant that my hardy and willing crew had to find a landing place on the opposite side of the Bay further out from where we had embarked the day before. There we parted and soon after I started for home by horse and sleigh arriving just before nightfall.

Had my patient waited another week to become so ill, the trip would have been quite normal as the Bay was then completely frozen over and one could drive safely and pleasantly to the settlement over the ice.

The patient made a good recovery and has since had two children without similar symptoms, pre-natal advice having been given her, which she faithfully followed.

# Case Report

## TRICHINOSIS

### INTRODUCTION—

Trichinosis is a disease produced by the infestation of the human body by the minute pork worm, *Trichinella spiralis*.

The occurrence of this disease in North America has been known for one hundred years—the first case being reported in 1842 by Bowditch of Boston, just seven years after the discovery of the causative organism by Sir James Paget and Robert Owen, England. Since then a large number of cases have been reported in various countries, especially the United States, Germany and Poland.

In the United States the disease is quite prevalent. In 1938, Sawitz<sup>1</sup> reported that five to six thousand clinical cases have been recorded since 1842. Only in recent years however has the disease attracted special attention and its high incidence in humans been realized. Numerous workers have examined muscle (the diaphragm proving most suited) from autopsy material in search of this parasite. Kerr et al<sup>2</sup> summarized the results of various workers of the United States Public Health Service—stating that of three thousand cases 16.3% were found positive for trichinosis. Most and Helpert<sup>3</sup> report the incidence of trichinosis in New York City as being 22%—based on the findings in 100 autopsies on persons dying by violence or suddenly from natural causes. These findings would suggest that one out of every six or seven persons in the United States is infected with this parasite.

In Britain, in contrast to the United States and some European countries, the disease has always been considered a rare one. Van Someren<sup>4</sup> reports that previous to 1937 only twenty-six cases had been recorded in the literature. He also reports the findings of 200 autopsies in which only 1% were found infected with trichinae. Since the outbreak of the present war, however, this low incidence in Britain has suddenly been augmented by epidemic outbreaks. In the winter of 1940-41 more than two hundred cases were reported in various parts of England and Wales. These were principally located in Birmingham, Wolverhampton and Penrith, but small numbers of cases occurred in other areas<sup>5,6</sup>.

In Canada, the subject of trichinosis in humans has been given little attention and it is therefore not known to what extent the results of American surveys can be applied to the Canadian population. The incidence of trichinosis in humans in Toronto is reported by Kuitunen-Ekbaum<sup>7</sup> as being only 1.7% (Findings in 420 Autopsies). A few small outbreaks have been reported in this country in recent years. Meakins and Gervais<sup>8</sup> report seven cases in Montreal, Quebec, in January, 1935 and Gervais<sup>9</sup> reports 68 cases in the same city in November of the same year. Cecilioni<sup>10</sup> and Deadman and Wilson<sup>11</sup> report a small outbreak of twenty-three cases in Hamilton, Ontario, in November, 1940.

### ETIOLOGY—

The causative organism, *Trichinella spiralis*, is a small worm, the male being 1.4 to 1.6 m.m., and the female 3 to 4 m.m., in length. This parasite

spends its larval stage encysted in muscle and although its host is most commonly the pig, it may invade the rat, cat, dog, human, etc. In fact it has been found in twenty-five different mammals. When such muscle is eaten by another carnivorous animal, the larvae are freed from the cysts by the process of digestion and within a few days develop to adulthood. Following copulation the male dies but the female burrows into the mucosa of the intestine and there persists for a varying number of weeks (usually 5-7) while depositing its numerous larvae (from 1 to 15 thousand per female). The latter then invade the body in general by blood and lymph streams and possibly to a minor degree by direct penetration. The voluntary musculature of the body is their chief destination. Here they become encysted, during the process of which there is considerable destruction of muscle fibres and considerable local myositis around each site. Such a cyst may finally undergo calcification with consequent death of the enclosed coiled parasite or it may persist unchanged and its inhabitant lie dormant throughout the lifetime of its host.

Human infestation by this parasite is acquired in only one way—by the ingestion of infected meat (practically always pork) which has been insufficiently cooked or, as in the case to be reported, not cooked at all. Sausage has been found to be the vehicle most frequently at fault.

#### SYMPTOMS—

This illness is usually described as having four cardinal features:—fever, orbital oedema, myalgia and eosinophilia—with many other possible signs and symptoms depending on chance deposition of parasites in various parts of the body. Among the more frequent of these are—gastro-intestinal disturbances (especially in the early stages); malaise; oedema of legs; conjunctival injection; rash (usually urticarial); signs suggestive of encephalitis, meningitis, polyneuritis, pneumonia, myocarditis, etc.; anaemia; cachexia.

It should be stressed, however, that a characteristic feature of this infection is the marked variation in severity. This is due to the fact that, since the trichina, unlike a bacterium or virus, does not multiply within the body of a host, the severity of the illness has a direct relationship to the size of the infesting dose. Another factor is the resistance—either natural or acquired—of the host. Natural immunity varies greatly in different persons as shown by the varied responses reported in groups exposed to relatively the same dosage. Also, it is stated that children as a whole appear to have a natural immunity to the disease. Acquired immunity is established in varying degree by the illness and also to a lesser degree by subclinical infestation.

Thus it should be realized that at the present time only a small proportion of cases are recognized clinically at the time of their occurrence and that the syndrome usually thought to be typical of trichinosis is actually typical only of the severe case, while the majority have less distinctive illnesses or have no symptoms whatsoever.

#### DIAGNOSIS—

Diagnosis is based on:

- (1) History of Consumption of pork:—though not always obtainable.
- (2) Clinical Picture:—though often far from typical.
- (3) Eosinophilia:—(10-90%):—the most constant positive finding, occurring in almost every case.

and a program along the lines advocated for typhoid fever (without, of course, precautions against spread) is considered to be the best.

### CASE REPORT

The patient is white, female and 23 years of age (now in the 9th week of hospitalization).

*Complaints:* (1) Puffiness of face—especially over the right jaw but also around both eyes; (2) Fever; (3) Frequency, nocturia and dysuria.

*History of Present Illness:* Ten days previous to admission the patient developed malaise with occasional nausea and vomiting but no diarrhoea. After two to three days of this she quite suddenly developed puffiness around the eyes, most marked in the eyebrows, followed the next day by puffiness over the right jaw, considerable fever and marked malaise. She also developed an aching pain across the back and marked frequency, nocturia and dysuria.

Interrogation revealed no complaints or symptoms other than these.

She was treated for a week at home with bed rest and sulfonamides but with no improvement except for some decrease in the orbital oedema.

The most interesting feature of her history was her admission that for many years she has had a peculiar fondness for raw meat—particularly the fat—so that she has frequently indulged in small amounts of varying type—beef, corn-beef, pork, sausage, ham, etc. The frequency of consumption in this case makes it impossible to condemn any particular occasion or type of meat.

*Personal History:*—With the exception of having been very ill with acute nephritis when five years old, the patient has always been healthy.

*Family History:*—Irrelevant. It is interesting to note, however, that the patient has a younger brother (now in the R.C.A.F.) who has a similar perversion of taste but who has as yet apparently escaped its possible dire consequences.

*Physical Examination:*—(1) *General Appearance:* A fair-complexioned, well-nourished, rather heavily built girl of 23 years of age with considerable puffiness over right side of face and slight puffiness around both eyes. Though rather pale, she does not appear as ill as the temperature of 103.2 degrees F. would seem to indicate.

(2) *Systemic Examination:*—(only essential findings noted):

- (1) *Eye, Ear, Nose, Throat:*—Negative. No conjunctival injection.
- (2) *Integument:*—Clear, no rashes of any type. Considerable oedema of tissues overlying the right jaw and slight orbital oedema. A moderate amount of "pitting" oedema of both lower legs and feet.
- (3) *Musculature:*—Some myalgia and slight tenderness in erector spinae muscles. Moderate tenderness, but no myalgia, in both gastrocnemii.
- (4) *Skeletal System:*—Negative.
- (5) *Glandular System:*—Negative.
- (6) *Gastrointestinal System:*—Negative.
- (7) *Respiratory System:*—Negative.
- (8) *Cardio-vascular System:*—Negative.
- (9) *Genito-Urinary System:*—No pathology detected. Urinalyses—consistently negative.

- (10) *Nervous System*:—General malaise, considerable lethargy and very sluggish deep reflexes—the only signs and symptoms suggestive of neurological involvement.

*Investigation*—1. *Blood Picture*:—Red Blood Cells—4,100,000. Hemoglobin 78%. White Blood Cells—19,950.

The Differential Schilling Count showed an Eosinophilia at first of 26% and later of 43%.

2. *Laboratory Examination of Stools*:—No parasites or parasitic ova were detected.

3. *Trichinella Antigen Skin Test*:—A definite positive reaction was obtained, consisting of a wheal of 11 m.m.'s diameter with a surrounding erythema; the whole area being 45 m.m. in diameter. The reaction began to appear in 2 minutes and reached its maximum at the end of 10 minutes. The control showed no reaction whatsoever.

4. *Biopsy of Muscle*:—This was taken from the upper portion of the right gastrocnemius—over the point of maximum tenderness. The pathological report was as follows: "Histological examination reveals the encysted larvae of the *Trichinella spiralis* and a simple acute myositis."

5. *X-ray of Muscles for Calcified Nodules*:—Two X-rays (at 6 weeks' interval) of the soft tissues of the legs both failed to reveal any areas of calcification.

*Treatment*:—Very limited treatment has been given. Because of the questionable value of active therapy, no campaign against the parasite was attempted except early purgation with magnesium sulphate. Bed rest and simple symptomatic treatment alone were instituted. During convalescence high dosages of calcium and vitamin D are being given on the assumption that this may promote calcification of the cysts.

*Course of Illness*:—The course of the illness has been a protracted one. The temperature ranged from 101-103.5 degrees F. during the first week, from 99-101 degrees F. during the next two weeks, then finally persisted as a low grade fever for a further two weeks. During this time the signs and symptoms gradually improved. Following this however, considerable myalgia in the leg and abdomen muscles, and recently in shoulder and arm muscles, developed and this has persisted in varying degree up to the present. In addition, the patient feels very weak and her anaemia is progressing in spite of treatment. A feature to be noted at present is considerable muscular atrophy in both lower legs too marked to be accounted for by simple disuse.

The subsequent course and final outcome of this case unfortunately cannot be reported in this paper. Probably, however, a liberal statement is that it will be many months or longer before this patient is free of myalgia and has regained her normal health.

*Discussion*:—This case has been a very interesting clinical problem. In addition, it is thought to be the first conclusively proven case of Trichinosis in Nova Scotia.

The diagnosis first suspected was acute glomerulonephritis but the consistently negative urinalyses necessitated a thorough investigation which soon led to the true diagnosis. The urological symptoms displayed were then explained, as are most of the symptoms of trichinosis, as due to the infestation of the musculature of the urinary tract by the parasite. The



occurrence of these symptoms in this case offers an excellent illustration of the vast variety of possible clinical pictures and the consequent ease of misdiagnosis.

Although persistent myalgia, muscular atrophy and contracture are the most unfavourable sequelae of this disease reported in the literature, it seems feasible that in some, at least, of the severe cases permanent myocardial damage of some degree must result from the acute inflammatory reaction set up by the parasite in the heart muscle. Investigation and follow-up of cases in this regard should prove most interesting. In the present case, however, no cardiac pathology has been detected as yet—either clinically or electrocardiographically—but it is reasonable to assume that such might not appear for many years.

### Summary—

The rare disease, Trichinosis, is discussed and a case report given.

J. W. REID, M.D.

H. C. READ, Interne, V.G.H.

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## The 1942 Canada Year Book

This is now available for distribution by authorization of the Hon. James A. MacKinnon, Minister of Trade and Commerce. I should be obliged if you would announce to your readers that this publication will be supplied to the public as long as copies are available, by the King's Printer, Ottawa, at the price of \$1.50 per copy. This covers merely the cost of paper, press work, and binding, and leaves no margin available for advertising the volume. By a special concession, teachers and ministers of religion may obtain paper-bound copies at fifty cents each, but the number that has been set aside for this purpose is restricted owing to the need for limiting expenditures of government funds, and early application for copies on the part of those desiring to purchase them is desirable. Applications for paper-bound copies should be addressed to: The Dominion Statistician, Dominion Bureau of Statistics, Ottawa.

# War Medicine

NATIONAL Defence Headquarters, Ottawa, has recently announced the appointment of Brigadier G. B. Chisholm as Director General of Medical Services, Royal Canadian Army Medical Corps; also the appointment of Brigadier J. C. Meakins as Deputy Director General of Medical Services in charge of Professional Activities, Royal Canadian Army Medical Corps, and Colonel G. A. Winfield as Deputy Director General of Medical Services in charge of Administration. Brigadier R. M. Gorsline, who was formerly Director General of Medical Services, is appointed Inspector of Hospitals.

Brigadiers Chisholm and Meakins served with distinction in the last Great War the former winning the M.C. and Bar, while Brigadier Meakins was mentioned in despatches twice for outstanding professional work. Colonel Winfield has been Overseas two years, and was in charge of hospitalization in Canadian Military Headquarters, London, previous to his return to take up his new appointment.

The purpose behind the division of duties of the Deputy Director General of Medical Services is to permit greater attention being given to the professional aspects of the Royal Canadian Army Medical Corps. It is proposed under the Deputy Director General of Medical Services (Professional) to appoint additional consulting physicians, surgeons and psychiatrists to assist the professional personnel in the various military districts. These consultants will have their headquarters in Ottawa, but will keep in close personal touch with the districts under their supervision.

Special Reception Centres are now being set up where Boards will examine all applicants for enlistment. These Boards will consist of Medical Officers possessing outstanding professional qualifications for this type of work. Each Board will consist of a physician, a chest specialist, a surgeon, an orthopedic surgeon, a psychiatrist and an eye, ear, nose and throat specialist, together with a radiologist and Personal Selection representative. The purpose of this move is to follow more rigidly the physical standards, so as to prevent men getting into the Services who either break down soon after enlistment and become "E" Category men, or those who upon examination show that they are "E" Category at the time of enlistment. The work of these Boards is most important and necessitates the most careful physical and mental examinations, in order that only those who are in acceptable categories for military duties are inducted into the Army.

Female physicians are now being accepted into the Royal Canadian Army Medical Corps, both as specialists and general practitioners. Female medical students may now be permitted to enlist in the Royal Canadian Army Medical Corps under the Government's accelerated plan of medical education. This plan provides enlistment for students for a period not to exceed twenty-four months, such period to include internship either before or after graduation, in accordance with the curriculum of the particular University concerned. The total period in all cases will include internship, and the twenty-four months is therefore divisible into three periods, which in some Universities takes third, fourth and fifth year, while in others it takes fourth and fifth year and eight months' internship.

If male medical students are fit they are taken on as Privates, given the pay of Privates—\$1.30 a day plus \$1.00 subsistence—and granted Leave of Absence.

Female medical students are taken on as members of the Canadian Women's Army Corps. During such time as the medical school is not in session students shall be liable to do duty with their unit, or be detailed for such military or professional duty as may be directed by the District Medical Officer.

# Personal Interest Notes

## Blood Donor Campaign Gets Underway in North Sydney

EVERY member of Rotary Club volunteers to donate blood. Address by Dr. L. R. Meech. Registration figures took a big boost in the local blood donor bank campaign, when every member of the Rotary Club volunteered to register as a blood donor at the club's regular meeting on October first.

At the luncheon at the Albert Hotel, Rotarian Stan Fraser, who was one of the local representatives at the preliminary Cape Breton meeting on the blood donor project, outlined to the members present the various aspects of the scheme, as presented by Dr. N. H. Gosse, the provincial head. One of the salient points brought out at that time was the fact that during the last war at the time of the Halifax disaster, hundreds of lives might have been saved, if a blood donor bank had been in vogue at the time.

Other speakers were also heard on the subject of the blood donor bank. Dr. L. R. Meech, in particular, gave a very informative and inspiring talk, clearing up a number of points, on which the public in general is naturally curious. He emphasized the complete freedom from harmful effects. So free from danger is the effect of blood giving that many people in the United States even go so far as to make a profession of blood donating.

At the conclusion of Dr. Meech's remarks, Rotarian Keith Clarke suggested that the Rotarians in the age class between 21 and 60 who were willing to become blood donors signify their willingness. An unanimous response was the result. With more than 75% of the members in the eligible age group, it is an indication of the fine response that may be expected from the public in general.—(North Sydney *Herald*, October 2, 1942).

Dr. and Mrs. J. J. Cameron of Antigonish, accompanied by their daughter, Miss Zina, are on a visit to New York.

Dr. R. Evatt Mathers of Halifax was elected Vice-President of the Canadian Ophthalmological Society at the annual convention held at Montreal in September. Leading eye specialists from all over Canada attended the convention, and discussed ophthalmological matters.

Dr. and Mrs. J. S. Munro of North Sydney returned home the end of September after spending several days at Belleville, Ontario, and other Canadian cities. Dr. Munro attended the tenth general council of the United Church at Belleville as a representative of St. Matthew-Wesley Church of North Sydney.

Dr. A. M. Wilson of Barrington, who suffered a fractured knee-cap in a car accident in June and was a patient in Yarmouth Hospital, is slowly but surely improving. He is now able to attend to his office practice, while Dr. E. D. Dickie, of Digby, attends to the out-patients.

Dr. R. F. Ross of Elmsdale, will take up residence in Truro on November first, where he will practise. He has recently purchased the residence of Miss

Eleanor Stanfield, 44 Dominion Street, and will occupy the office of the late Dr. D. L. MacKinnon, 795 Prince Street.

The BULLETIN extends congratulations to Dr. T. C. Lockwood of Lockeport who celebrated his eighty-fifth birthday on October 9th, having been born at Canning in 1857. After attending the common school he entered Mt. Allison University, receiving his B.A. degree in 1881, and later his M.A. in 1891. During the years 1881-4 he was a student of the Halifax Medical College and then he entered Bellevue Hospital Medical College and received his M.D. degree in 1885. Next, as a result of a competitive examination he was appointed a house surgeon at the Victoria General Hospital during 1886-7. He went to Lockeport in November, 1887, and has practised there for fifty-five years. During the years 1889-1900 he took a post-graduate course in London. While a resident of Lockeport he has filled the office of mayor for thirteen years, and that of port physician for thirty years. He still attends to office duties, and attends his patients in the town and adjacent villages.

Careful and conscientious study of group medicine and hospitalization in all its aspects as a pioneer step in the introduction of such an insurance plan in Nova Scotia was urged upon members of the Halifax Kiwanis Club in September by Hon. L. D. Currie, provincial minister of mines and labour. Guest speaker at the club's weekly luncheon meeting at the Nova Scotian Hotel, Mr. Currie was careful to make plain that the hospital service plan to which he referred had nothing to do with state medicine or unemployment health insurance.

The marriage took place in Toronto on September 30th of Miss Vivian Graham, daughter of Mr. and Mrs. Earle Graham of Halifax and Dr. Edgar Paul Nonamaker, son of Rev. and Mrs. E. V. Nonamaker of Mahone Bay. Dr. Nonamaker, who graduated from Dalhousie Medical School in May of this year, is now a medical officer in the R.C.A.F., Toronto.