

Post-Gastrectomy Symptoms

by

C. F. W. ILLINGWORTH

Regius Professor of Surgery, University of Glasgow.

PARTIAL Gastrectomy is now in wide use in the treatment of peptic ulcer. It is the standard operation in all cases of gastric ulcer, and is favoured for duodenal ulcer in the majority of male patients under the age of 50. While in general the results are excellent, a minority of cases present various types of syndrome which may be quite disabling.

Anderson, Gunn and Watt have recently reviewed the end results of 458 cases from my hospital department, of whom 385 were traced and interviewed. They were classified in three categories, (1) Free from symptoms or nearly so, on ordinary diet and at full work, (2) Occasional or slight symptoms but able to do full work, (3) more severe disability. In each case the observer made his assessment and the patient's own opinion as to the value of the operation was also recorded.

It will be seen from Table I that the observer classified the results as satisfactory in 67% of cases and as poor in 10%. The patients themselves, however, were more sanguine, for 82% of them expressed themselves as entirely satisfied with the operation, and only 3.7% regarded it as a failure.

TABLE I
RESULTS OF GASTRECTOMY

	Assessment by	
	Interviewe	Patient
Successful	67.3%	82.3%
Satisfactory	22.5	14.0
Failure	10.2	3.7

The commonest trouble is the post-prandial syndrome, which starts within a few minutes of a meal and is characterised by epigastric fullness, distension, and perhaps bilious vomiting, with such vasomotor effects as sweating, lassitude and intense muscular weakness. It is now recognised that this syndrome is due to "dumping" of food into the jejunum.

In health, the function of the stomach is to pound and triturate and macerate the food and to expel the resulting chyme into the intestines in a fluid, non-irritating state. After gastrectomy this function is lost. X-ray studies

show that food begins to leave the stomach immediately after being swallowed, and within ten or fifteen minutes the whole meal is in the small intestine. The post-prandial syndrome is a reflex effect due to the intense spasm and motor activity of the jejunum which results from distension and irritation brought about in this way.

Most patients are liable to this syndrome during the immediate post-operative period, especially after taking a large meal—it is indeed surprising that it does not happen in every case—but in the majority the symptoms abate after a few months as the jejunum accommodates itself to the new conditions. In the few patients in whom it persists in severe form the treatment is difficult. Hexamethonium or Banthine may be used to reduce the intestinal motility; owing to its hypotensive effect it should be given in a single dose at night. Recently we have obtained some benefit from the use of a slowly absorbed local anaesthetic agent, Xylocaine Viscous, which is given by the mouth in teaspoon doses and presumably acts by diminishing the jejunal irritability.

The patient should be instructed to avoid soup, to drink sparingly during meals, and to avoid bulky carbohydrate foods. If practicable, he should lie down for half an hour immediately after meals.

Hypoglycaemia is a rare cause of trouble after gastrectomy. Owing to the rapid progress of food to the absorptive area of the small intestine, a carbohydrate meal almost invariably brings about a sudden moderate rise of the blood sugar level, and quite commonly this is succeeded by a rebound so that after an hour or so the sugar falls to 50 mgms. per 100 ccm. or lower, but this hypoglycaemia only rarely leads to the development of definite symptoms. When they occur, hypoglycaemic manifestations tend to develop an hour after a high carbohydrate meal, particularly in cold weather and after exercise. They consist in giddiness, unsteadiness of gait, difficulty in articulation, and rarely a transitory "black out." They are easily diagnosed on the blood sugar curve, and easily controlled by placing the patient on a high protein diet, which smoothes out the blood sugar fluctuations.

Loss of weight is a common trouble after gastrectomy. Less than 50% of cases resume their normal weight, and a substantial minority fail to reach within fifteen pounds of the normal. As a rule, the cause is to be found in the intestinal hurry already mentioned, which greatly impairs fat digestion and absorption. Possibly bacterial infection of the small intestine, consequent on the diminished acidity, may contribute to the malabsorption. In a patient with the "dumping" syndrome there is the added factor that only small meals can be taken and they sometimes may be vomited. When the reduction of weight is small in amount it is of little consequence, and indeed in middle aged patients may be welcomed. In more severe cases, however, it leads to some loss of energy, and it may diminish the resistance to disease. In Britain the high incidence of active pulmonary tuberculosis after gastrectomy has been attributed to this factor.

In treating the weight loss, its causation should be borne in mind. The dietary should be reviewed. If the patient cannot take a large meal he should take smaller quantities more often. It is worth while trying the effect of a bile salt preparation to ensure better emulsification of the fat. A course of

sulpha-succinyl or aureomycin may be useful to control bacterial infection. Finally the possibility of a latent tubercular disease must be borne in mind.

Anaemia is at once the commonest and the most readily preventable complication of gastrectomy. It is an iron-deficiency microcytic anaemia—megaloblastic macrocytic anaemia of Addisonian type occurs only after total gastrectomy—and it is due very simply to the impaired absorption of iron consequent upon intestinal hurry.

Anaemia of this type is extremely common after gastrectomy unless special steps are taken to avoid it. In our own series, prior to 1951 a haemoglobin level of lower than 75 was found in nearly 20% of men and as many as 30% of women. Since then we have adopted the necessary measures to guard against this complication. Iron medication is given in all cases for a few months immediately following operation, and subsequently a haemoglobin check is carried out at six monthly intervals. All patients are warned that on each anniversary of the operation they should take a month's course of iron medication. It is important that a high dosage should be given, owing to the impaired absorption. Where a severe degree of anaemia has been allowed to develop a course of intravenous iron administration is valuable, while in resistant cases a blood transfusion may be needed.

When so much is written about the post-gastrectomy syndromes it is easy to exaggerate their frequency and importance. One should therefore remember that in the great majority of cases of gastrectomy there are no post-operative sequelae or only mild symptoms. Moreover even among patients with severe dumping and repeated bilious vomiting there are those who maintain that the operation has been worthwhile. Post-gastrectomy syndromes are distressing but at least they are painless.

The best assessment of the value of gastrectomy is to be made on the working capacity. In their follow-up investigation of 458 cases from my department, Anderson, Gunn and Watt have shown that over 60% return to full work within three months of the operation and nearly all the remainder within 6 months. Nearly 35% of the men in this series had been off work for 12 weeks or more during the year prior to operation; by contrast in the year prior to the interview 80% had lost no work through illness. Gastrectomy patients are, moreover, fit to undergo even the most arduous occupations. In our series of men engaged in heavy work in shipbuilding and allied industries over 70% were able to resume their original jobs and to continue them without intermission.

In taking care of patients after gastrectomy it is important to emphasize this prospect, for after years of chronic indigestion with pain and disability there is a tendency to assume that a life of chronic invalidism is inevitable. In my hospital department nearly all patients get up on the second day and return home on the ninth day, and they are much encouraged by the expectation of a speedy return to normal health and working capacity. The following table of instructions is given to each patient on his return home to underline this prospect:

INSTRUCTIONS AFTER GASTRECTOMY

- (1) Your ulcer has been removed and you are on the road to complete cure.
- (2) You may take any kind of food that agrees with you.
- (3) Take small meals at first and avoid soups. Later you will be able to take normal amounts.
- (4) Take an iron preparation for one month on each anniversary of your operation. No other medicine is required.
- (5) Your ulcer is cured. You should get back to normal life and full work as soon as possible.

"A Cancer Programme For Nova Scotia"

N. H. Gosse, M.D., Halifax

THE fact of Cancer is of time immemorial. The challenge of Cancer is by contrast relatively new. The philosophy which for so long accepted death as inevitably due to cancer for all persons inflicted with cancer and which expressed itself in such fatalistic phrases as "a cancer case means a cancer death" must have been one of the many contributing factors to the do-nothing policy which for so long darkened medical history.

One might suppose that the challenge of cancer found acceptance in countries according to the age of their civilization. That of course does not obtain. It would seem rather to have varied with the degree of development of social conscience in the different countries. Sometimes that development has appeared as out of a general community awakening, more frequently as a result of the crusading efforts of individuals or of the few.

In Europe we find England and Sweden apparently longest in the race with centres like Manchester, London, and Stockholm, unquestionably leading the field. In America, I would think that the efforts of men like James Ewing did most to bring about wide acceptance of the challenge of cancer, though for years its acceptance was slow.

In Canada, the record is of individuals as pioneers, for years labouring for a more conscientious campaign against this disease. Dr. Richards of Toronto, a radiologist, was largely responsible for the Ontario Cancer Foundation, and Dr. Fritz Strong of Vancouver, an internist, was unquestionably one of the biggest factors in the wide acceptance of the challenge in his province. The formation of the B.C. Cancer Foundation which opened its million-dollar Cancer Institute in Vancouver last Autumn is largely the result of his interest and effort.

From the side of collective community effort—State initiated and State maintained—we have the province of Saskatchewan in which it must be admitted, regardless of our politics, that they pioneered in this country in comprehensive community effort against cancer. In the U.S.A., though millions are privately contributed there is now a great deal of State backing for cancer—frequently organized and administered through universities and university hospitals, tying in research with therapy; and there are direct Federal grants for cancer teaching.

It is against the background of such effort that Nova Scotia comes into the picture. Its more concentrated effort now begins after so many places have borne the burden and heat of the day; and you will later judge whether or not it will be entitled to the reward of the common penny.

This is not the first time that the idea of a Cancer Centre for Nova Scotia was entertained. The Bulletin of our Medical Society records that Dr. George Murphy, our first Provincial Minister of Health, who did much to recognize the Tuberculosis problem here, expressed (in 1932, I believe) the intention of his Department to establish a Cancer Clinic. It had been my pleasure more than once to have talked with him about it. But the value of the franchise was held by the voters to be greater than that of a Cancer Clinic and the good intention was destined for a long time to be but another paving stone on the road to forgotten things. Dr. Davis succeeded Dr. Murphy

and I have good reason to know that before his untimely death he too was very definitely considering a cancer service for this province.

In due course the organized profession of this province adopted a resolution urging on the government of the province through its Minister of Health that the time had well come for action in that direction. Hon. Mr. Currie was then minister. He very kindly acknowledged receipt of that resolution, thanked us in his usual gracious manner for our careful study and presentation of the question, etc., etc., etc., Hon. Mr. MacKinnon, who succeeded Mr. Currie, was also very sympathetic.

In characteristic fashion we waited. Then the Director of the Survey under the Health Grants—Dr. C. B. Stewart—made his report, which in effect strongly supported the position which the organized profession of this province had earlier adopted. Meanwhile, another Minister of Health came on the scene, and in October of last year Hon. Mr. Connolly announced the decision to set up the Nova Scotia Tumour Clinic, and this speaker was asked to be its part-time director. I shall not at this time discuss my reasons for, nor my misgivings in accepting the task.

Today I have been asked to speak to you under the title "A Cancer Programme for Nova Scotia". Under that title I find that I have to "shift ground" a bit. I *have* ideas that could properly be said to belong under such a caption but as they would probably be classed as political and as that is outside my realm today, I must confine my ideas and this report to the professional aspects of the programme of the Nova Scotia Tumour Clinic.

Coming late with this clinic we have the advantage of being able to profit from the mistakes and the successes of the pioneers and long-time investigators who preceded us; and the degree of profit that we can derive from this position depends upon the degree to which we have the courage "to eschew the evil and to choose the good" and upon our honest desire to do a decent job.

What may we learn from their experience? Well, the first fact that emerges as we consider their mistakes and successes is that Cancer Centers can produce experience and significant figures only if they have enough cancer cases to make those figures relatively large. To get the large numbers those centres have very large populations to draw from, or, conversely, the number of cancer centres has been restricted to territories which hold large populations, many running to 4 or 4½ million people. The maximum now generally accepted is one centre for a million people, though political considerations have been known to vary that.

The second fact emerging derives from the first and is the primary aim of all our efforts. It is that the development of such clinics has greatly improved the treatment of the individual cancer patient—a result derived from many contributory factors.

The third fact is that by adopting international standards with respect to both diagnosis and treatment it has become possible for a clinic like Manchester, Stockholm, New York, or Halifax, to examine critically its own methods of therapy and the results of those methods, against the figures produced in other clinics by similar or different methods of therapy.

Now with these obvious benefits known to accrue, with professional and

public consciousness aroused, it is found that funds sometimes of very great magnitude, have become available by which those benefits can be the better applied. Complete new buildings for cancer treatment and for cancer research, the latest equipment including the Cobalt Bomb or other sources of super-voltage energy, and large staffs of highly trained personnel in the different specialties involved, including bio-physics, are the more obvious expressions of that increasing interest and supply of funds. Among even our nearest neighbours we find St. John employing a full time bio-physicist and considering the installation of a Cobalt Bomb, and St. John's, Newfoundland, discussing an extension to existing buildings with special provision for a Cobalt Bomb.

Where do the funds come from? In Saskatchewan, the cancer services which are among the best on the continent were instituted entirely out of provincial taxation. In two provinces they were and are being provided through great Cancer Foundations, supported by public subscription, self-controlled, yet heavily supported by both provincial and federal grants. Other provinces had been variously organized, still others became organized with the provision of the Federal Health Grants, which of course means 50 per cent provincial funds.

In Nova Scotia we do things our own way. Because we are said to be a poor province we do not think in terms of great sums of money when things like this have to be done; nor does the Federal Health Grant for Cancer seem to have done us much good, for as is now well known, the sum made available for the budget of the Nova Scotia Tumour Clinic is \$16,000. (It is only fair to point out however that the services of the pathologist, the radiotherapist—and the bio-physicist that is badly needed and that we hope some day to have—and the space which houses the clinic are not included in that figure.) For this we equip the Clinic and Registry, employ 3 other persons—one Clinic Secretary, one Nurse, and one Registry Clerk—and become the busiest group in the Nova Scotia Civil Service! (I am told however that it is not part of the Civil Service).

Let us now look at what is attempted here within that budget: First the object is twofold:

- I. To conduct a first-class Tumour Clinic,
- II. To operate a Tumour Registry of a quality and standard approved by the National Cancer Institute of Canada.

The second of these uses up a very considerable part of our budget, so, you may ask, why have it? Well, it is our conviction—indeed the general conviction—that to attempt to run a Tumour Clinic without a Tumour Registry would be like running a ship without chart or compass. No intellectual and conscientious group of workers would be content to work without facilities for checking their results, and if they were so content we would not look for that progress which such checking should ensure. That means first-class records. Clinic and Registry must go together therefore regardless of the cost. Few indeed realize the work that is involved in even a modest Tumour Registry, and some of our hospital officials who are coming to know, have suggested that with the budget within which I must operate I have bitten off more than I can chew. It is a well known fact that in a similar situation

in Canada where five persons are employed to do the work of the registry, we have one. We have no doubt however that some day the worthwhileness of the work will be more generally understood and the cancer effort of this province adequately assisted. Meanwhile, if Nova Scotia doctors do not find certain services as prompt as they would like, they will know why.

But you will be more interested in the clinical side of the work. What is the programme there?

Let us for purposes of comparison remember that some years ago the American College of Surgeons set up standards for Cancer Clinics on this continent. Those standards were kept low to encourage the formation of as many clinics as possible, and so that they could be "approved". The standard of *Minimal Professional Requirements* was a surgeon, a pathologist, a radiotherapist, and an internist.

It is possible of course to operate a clinic on such a professional staff and it is actually being done in some small clinics where, under such circumstances, recompense for service is a simple matter. Indeed we were advised to adopt that system for this clinic. Here however we had already gone beyond that, with Gynecology, Urology, E.E.N. & T., as restricted specialties for the tumours of their regions, and it was obvious that the concentration of work on their relatively small anatomical regions meant better treatment for their cancer patients. With the organization of this clinic we were confronted with the question: How much more of that can we do to the improvement of the work in other such regions?

Surgeons are as conservative with respect to their style of practice as is anyone. In the circumstances here however they felt that change was indicated, that tumour cases coming to hospital or outpatients that heretofore were spread indiscriminately over four or more surgical divisions should now be concentrated into special groups. To those groups therefore which already existed as specialties in the Victoria General Hospital it was agreed that we should add five other divisions of the so-called surgical tumours:

- (1) Tumours of Head and Neck
- (2) Chest and Stomach
- (3) Rectum and recto-sigmoid
- (4) Other abdominal tumours and sarcomata (a mixed group) and
- (5) The Breast

In addition a Medical group for those of the Blood and Lymph systems.

Other specialties such as Dermatology to be used as indicated.

The patients in each of these new tumour groups are cared for by the group of men to whom they are assigned whether they be in-patients or out-patients, the same group looking after both. All of this work is on a purely voluntary basis.

I believe that this further degree of specialization is the most significant step that has ever been taken in this province or indeed in any other, with respect to Cancer. The value of it is already becoming apparent and it will become more so as time goes on. This is a step which makes us the envy of more pretentious centres on this continent for it is coming to be widely recognized that when cancer requires surgery it demands for the most part that

it be extensive, meticulous, and complete, and there is much concern in many places because, so frequently, such requirements are just not met. The belief that those qualities of cancer surgery are requisite above and beyond all other surgery is well shown in Haagensen's surgery of the breast where 'extensive, meticulous, and complete' means for him—a first-class surgeon—4 or 5 hour operations. It is also shown, as another example, in work on the head and neck where a block dissection of the neck to be considered adequate has been extended to proportions that are formidable. The same applies to other regions.

But while the surgical side of this work must be of the highest quality it is of itself not adequately meeting the need. We must therefore recognize the place of other therapeutic agents, first among which is radiotherapy.

What is the place of radiotherapy in its relation to surgery? We glibly say that the treatment of Cancer is both surgical and radiological. How are they each to be used and who is to say what is the value of each? It is agreed that both are very valuable agents but how are they to be coordinated? Given a place where surgeons think that the knife is always best, regardless—and there have been surgeons of whom it has been said that they have been somewhat opinionated with respect to that, and quite uninterested in any other form of therapy—or given a centre in which radiotherapy has been able to dominate the scene, with strong personalities behind it, and there is the same kind of situation: no true correlation of effort. Such places are obviously out of balance.

We have on this continent one well-known place of which it is suggested that this loss of balance has gone on to pathological proportions; where all faith in radiotherapy seems to have vanished and where trust is now reposed in the most radical and mutilating forms of surgery. This is all very spectacular and surgeons of like propensity visiting there are, by the glamour of it, frequently confirmed in their faith and in their own cutting proclivity. It is interesting to find however that some of the best surgeons who have been trained at that centre, and on whom has come the responsibility of directing some of the best cancer centres on this continent will now have none of it, finding more satisfying results in the conduct of a properly balanced clinic.

It was interesting to hear Sir Stanford Cade, a cancer surgeon of very great experience and of international renown in Cancer, who visited that centre last Fall, enunciate similar views and say that he found the extent to which surgery was carried there, nauseating.

Perhaps one should concede that such super-radical surgery should be done on a purely experimental basis at at least one place in the world but if that is not its purpose it demonstrates how easy it is for even a great place to get off the track; and consider if you will the danger to young cancer workers in this one-sided training! If you look for a cause for this, it is to be found I think in the fact that radiotherapy was never allowed to develop there into the important partnership in treatment that it should have been—and as it is in fact in the best part of the rest of the world. One needs only to study the five year results in radiotherapy from Manchester or from Stockholm to appreciate the significance of this position.

Some surgeons, hearing all this, may accuse me, a surgeon, of the rankest apostasy. Radiotherapists, on the other hand, would no doubt suggest that I am 'not far from the kingdom'—their kingdom—but had I the time I would show how little I could qualify for their accolade since other places are as badly out of balance on the radiological side. Neutrals might more wisely remark that responsibility induces a sense of balance. But truth is that since my training days began I have never ceased to be impressed with the failures in certain fields of cancer, of surgery alone and of radiotherapy alone, and by the better results obtained where radiotherapy and surgery are maintained at their proper level and where a becoming humility engenders a mutual respect.

I conceive it then to be the function of this centre, where surgery might be expected to dominate the scene, to provide that in a spirit of good will either side will give place to the other if out of the accumulated experience of the world or out of our own local experience results are improved by doing so. This makes very necessary the *Consultative Tumour Clinic* and the *Tumour Conference* where the views that make cooperation possible may be freely exchanged and debated.

Examples of our practice in cooperation may be cited:

I. *Gynecology*: Here the radiotherapist is used continually in close consultation. Let anyone interfere with his time allotted to that service and look out for the protest from its chief!

II. *Head and Neck*: Here cooperation is held to be most essential, for if both surgery and radiotherapy do not have a good grasp of both the powers and limitations of each other there is here such room for error. The differences of opinion—according to the personalities and the knowledge involved—can be very great. In the cure of Cancer, radiotherapy on the one hand, with its generally better results, but sometimes with its undesirable side effects, and extensive mutilating and deforming "commando" surgical procedures on the other, have to be seriously weighed. Neither side has a corner on knowledge and the patient needs the consideration of both.

III. *The Breast*: Here one might suppose that out of much experience the pattern would be very definite, the course clear. Yet if one considers the overall figures in cancer of the breast it should not be surprising that confidence in radical mastectomy should be so widely undermined and that other therapeutic agents should be finding an important place.

For some time we have accepted this sort of partnership with radiotherapy: For stage I tumours—if we are *very* sure of the stage—and who is?—perhaps surgery might be able to stand alone; for stage II, Radical Mastectomy with irradiation, preoperative, postoperative, or both, (the Radiumhemmet shows that both have a slight edge over preoperative), and for stages III and IV Radiation and Hormones take over entirely, for here surgery does more harm than good and can induce rapid metastatic spread and a shortening of the patient's life.

This is however not the end of the story. Even this tenuous hold by surgery is challenged and, speaking as a surgeon, I'm sure that we shall be happy to surrender even that if either radiotherapy or endocrinology comes up with better figures.

Examples of the place of radiotherapy could be extended. These must suffice. Its place, however, must be conditioned by many factors all of which have to do with the conditions under which radiotherapy has to work. Are the therapists thoroughly trained? Have they association with a well-trained biophysicist? Is the equipment adequate in power and is it sufficiently flexible to admit of such tangential application as shall avoid the pulmonary fibrosis and other distressing sequellae that are so often encountered? If not, then until those conditions are fulfilled old-fashioned methods had better continue and patients be deprived of benefits which newer knowledge makes possible.

True, this period is one of transition. Tomorrow the apostles of physiological chemistry may take over but until they do we must utilize such knowledge as exists to endeavour to reduce the mortality that is still so very high.

The programme of this Clinic then may be expressed under two headings:

I. To apply to the treatment of Cancer in all forms the best that is possible within present knowledge, avoiding the extremes of cultists. That will take some doing, but we are moving rapidly in that direction. The concentration of interest to one anatomical region by the different groups is bringing about an accumulation of knowledge and of experience not otherwise possible and already in the benefits that are obvious we find much justification for the step.

II. To provide a medium for the integration of all services which can contribute to (a) the better treatment of patients, and (b) to the sum total of knowledge with respect to Cancer.

With respect to the latter there is little or no thought as far as I know, of our being responsible in this clinic for any basic laboratory research, but we believe it to be definitely part of our duty and obligation, and it is part of our programme to provide and to develop better facilities for clinical research. We are meeting this obligation in the building up of our Tumour Registry. But the value of the Registry will be found to be influenced by several rather important considerations, some of which involve the interest of the doctors of this province. One of the first things to be recognized is that much time is required before any given practice or method can be evaluated. This of course gets looked after eventually—inexorably indeed—but it requires patience to wait for its results. A second thought is the number of cases here. As I have shown, the number must be large to be of any great research value, for otherwise the margin of error is too great. I have however no misgivings about this important element in the Clinic's success. We began only in March and already, on a day while I was preparing this, the list of patients for that day's clinic, representing one anatomical region alone, showed 16 patients—admittedly an unusual figure. I think we may take from that the fact that the numbers are forthcoming, and too, that this clinic is supplying something that is needed, not only by the people of this province but by the doctors who refer them. That those numbers will grow is inevitable if in this province we have the courage to ensure that the clinic gets the support by which it may properly develop and doctors get to realize how much more can be offered their patients under the new conditions.

While thinking of this the other day, the list of cancer deaths of the province, which I review every week, was put on my desk, and at about the same

time I received last year's report of the Radiumhemmet at Stockholm. I examined the week's list of Cancer deaths first, considered the proportion that had come through this clinic and speculated about the rest. Then I read part of the Swedish report and saw how that other hospitals there had arrangements by which their tumour cases were routinely sent on to the Radiumhemmet.

I am neither a politician nor a prophet but I foresee the day—though probably not in my time—when every doctor in this country, and every hospital, will be an integral part of the cancer service which we shall have provided for our people, and that we shall have a centre serving this province's less than a million people as effectively as the Radiumhemmet or the Manchester centre serve their four million plus.

I should like to say that there is one part of our work now in which it is our desire to keep the referring doctor in close touch with us and with the patients which he refers to us, and that is through reports to him when patients are returned to him, and in reports to us when for one reason or another patients have not returned and can not be reached by us. I well know that up to now reports to him have not been satisfactory. I had set an objective of 48 hour reporting but, through causes over which, so far, I have no control, that has not been realized, and with present limitations it may well be some time before it will. Some day it will be realized, until when I shall continue to suffer because of my inability to make the wheels of the gods grind less slowly.

In other aspects of our relations we are doing well. This clinic requires a 100 per cent follow-up on all cancer cases, and if the very excellent cooperation of the doctors of this province already experienced is to be regarded as symbolic, I am sure that as far as they are concerned it will get it. I am frequently disturbed however by the frequent word from patients called in for follow-up that they can't come because they can't afford the travel cost. Occasionally one of these excuses, from a patient 50 miles or so away, we know to be spurious, and it only requires a little firmer advice from their doctor as to the importance of it to get the patient in. Others require a different solution, in which someone must be financially responsible if the indigent are to receive that followup which everyone acknowledges is a necessary part of the overall treatment. I suspect that present legislation—express or implied—provides a municipal obligation in this regard, though no doubt municipalities would like to have someone else assume it. With the merits of that we are not now concerned, though we believe that only local authority can determine if patients require such help and to what degree. Our concern is that nothing shall stand in the way of adequate follow-up.

In helping such patients, however, we as doctors have a part to play. Some time ago the Cancer Society had its sympathies imposed upon—not to the extent of *assisting* a patient to get to hospital—but to the extent of *transportation to hospital by ambulance, about 300 miles, on medical advice that such was necessary*. No doctor who saw the case here saw the necessity for it and when the patient was told that she could return by train, the response was, "My doctor says I can't go by train and I'm not going by train." So she contacted her husband and it was ambulance again!

I am in the fortunate position of not knowing who the doctor was in that case so I can present this quite impersonally. It is obvious however that if charity is to be utilized to help such people the responsibility of the doctor improperly exercised can kill the goose that lays the golden egg. I happen to know how much money is subscribed to the Cancer Society in Nova Scotia for all its activities and how little of that is available for travel. Certainly that sort of thing would soon wipe out its whole welfare budget. That Society in most of the provinces won't touch travel under any circumstances, and the patients get in just as readily from distances much greater than any we have in Nova Scotia. Someone must be assuming responsibility for the indigent.

Finally, I think you would have me say a word on the Cobalt Bomb. Saskatoon, London, Vancouver, Montreal, Toronto,* and others have now or are to install, this piece of equipment, worth installed upwards of \$55,000, which includes the thick walls of the building which must house it. Word from St. John, New Brunswick, and from St. John's Newfoundland, indicates that they too are making preparations for it. In the United States 2 million volt X-ray machines and occasionally a Cobalt Bomb (as a comparable source of energy) and other machines up to 340 million electron volts are the order of the day.

As clinicians what are we to think about all this? I think that all this activity is to be interpreted in this way: There would seem to be in all these sources of energy no new ray of more specific selectivity. It is rather to be regarded as a serious and honest reaching out for something that will deliver doses of radiant energy at depths for which *present apparatus is now inadequate*. It is not for the majority of tumour cases that it is sought but for the much more intensive penetration which is necessary to deliver the dose at depth.

What the net over all result will be in the use of such instruments no-one can yet say, and I have no doubt that in Nova Scotia we shall sit tight for a while and see. But since already patients have been sent out of the province to the nearest bomb for treatment, and as already it would seem to have considerable advantages especially in Gynecological, Rectal, Thoracic, and Renal cases, I think it safe to assume that Nova Scotia will do something about it too some day, when some necessary building gets going, rather than have patients travel to Newfoundland or to New Brunswick for such special treatment.. Its use in other places is increasing greatly.

Since this address was given our Minister of National Health speaking at a ceremony in Ontario at which another Cobalt Bomb was "unveiled" or "dedicated" announced that with the completion of the new reactor now under construction at the Chalk River plant two bombs per month would be produced which it was hoped would enable them to take up most of the back-log of orders which at the moment the plant cannot fill.

The Surgical Importance of Henoch's Abdominal Purpura

Otto Bruckschwaiger, M. D.,
Glace Bay, N. S.

THE abdominal form of purpura was described by Henoch in 1868, and in 1904 Osler first drew the surgeon's attention to the importance of diagnosing and treating the visceral crises of the disease. Glanzmann called the whole group anaphylactoid purpura and included purpura simplex, purpura rheumatica Schoenlein and purpura abdominalis Henoch. It is generally understood to-day that these forms are only variations of the response of the body to an allergen, which can produce either form alone and periodically, or one form in succession to another (Chlemeris, Zervos).

The cause is always a hypersensitivity of the body to known or unknown allergens. Food, drugs, penicillin (Anderson), vaccines (Fournier) have been found responsible as well as streptococcal allergens (Gairdner). Storch could experimentally reproduce the pathological changes after specific sensitization (Arthur phenomenon) and could also reproduce the same changes in patients suffering from Schoenlein's or Henoch's purpura by local antigen injections without previous sensitization.

A familiar trend to allergic diseases is often found and was established very convincingly by Seidelmayer and by Kaemmerer.

The pathological anatomy is very uniform for all forms of anaphylactoid purpura. The capillary lesions represent active inflammatory perivascular changes with infiltration of inflammatory cells and destruction and dilatation of the capillaries. Balf stresses especially the precapillary spasm with stasis in the capillary vessels. In contrast to periarteritis nodosa which can simulate Henoch's purpura very closely and which is an arteritis of allergic origin, anaphylactoid purpura is predominantly a capillitis which again is not specific. It differs from the changes seen in ordinary inflammation only in its greater intensity. The capillary changes in anaphylactoid diseases and the Arthus phenomenon are hyaline thrombosis and gradual transformation of the thrombi into granulation tissue (Hilding Bergstrand).

The clinical picture may be very typical with skin manifestations such as petechiae, hives or eczema, and joint pains with swelling and effusions, and haemorrhage from the nose, gums, urinary and intestinal tract. If the abdominal symptoms like colic, melena or vomiting dominate the picture, it is diagnosed as Henoch's abdominal purpura. It has its highest incidence amongst children between three and twelve years of age but the disease has been noticed in adults by many authors since it was first reported by Henoch himself (Wagner, Zimmermann, Rehberg, Dinkler, Buynewitsch, Ramb).

The illness may start in one case with cutaneous haemorrhages, in another with joint pain and in a third with abdominal pain and haemorrhage per rectum. There is no rule as far as the sequence of the symptoms is concerned. Usually with only visceral symptoms present, the diagnosis of abdominal purpura is not made before operation and certainly not before the other typical symptoms appear in the general course of the disease. This was al-

ready known to Henoch who stressed in his address to the Medical Society of Berlin in 1868 that one or the other symptoms may be absent. This is most often true for the joint pains (Rosenow, Khantz).

The symptoms that gave the illness its name are abdominal, including severe colics in the umbilical region with tenderness along the transverse colon, loose bowel movements with admixture of blood and mucus in varying amounts. Vomiting of sour or biliary fluid is often seen, sometimes mixed with blood. It is often doubtful whether the blood which passes by rectum is of intestinal origin or from the upper gastro-intestinal tract. Noting the colour of the stool and relief of the abdominal pain following defecation may give a lead in differentiation.

It is erroneous to think that the skin lesions are simple petechiae. The word anaphylactoid gives just as much information as the word purpura. The lesions are erythematous, urticarial, papular, or scaly with a very variable number of petechiae. This is very different from the skin lesions in Werlhoff's thrombocytopenic purpura in which the lesion is a pure cutaneous haemorrhage. Case 1 of this paper and the case described by Bujnewitsch showed a generalized eczema, and secondary infection has been reported by Dinkler and by Schmidt. Necrosis of the skin was seen by Frontali.

The disease occurs in paroxysmal attacks. Pfaundler and v. Seth reported an average of four attacks. The interval can be a few months to many years. The recurrences are so frequent and so typical for this disease that Reimann has classed Henoch's purpura among the periodic diseases together with periodic fever, periodic abdominalgia, periodic arthralgia, periodic neutropenia, etc.

Death is usually due to one of the complications, which are also the reason for the interest which surgeons take in this disease. Exitus has occurred due to haemorrhagic glomerulonephritis (Hutinell), peritonitis after perforation (Wagner, Zimmermann, Silbermann), peritonitis without perforation (Hartglass) and intussusception (Gara, Schneider).

In spite of the difficulties in diagnosis of the complications during the course of Henoch's purpura they are more often recognized than missed. On the other hand, they are very often suspected and the patient subjected to surgery and no complications found. Althausen has called these latter cases "False acute abdomen" and everybody who has seen them knows how closely the presence of fever, leucocytosis, local tenderness and spasm make them resemble appendicitis, intussusception, etc.

The following complications have been reported in abdominal purpura— one case by each author: intussusception by Doebeli (1908), Gara (1912), Treplin, Schneider, Lederer (1913), Ballin (1930), Gamstedt (1934), Schwartzmann (1940), Clifford (1949), Fournier, Langeron (1950), and Seror (1952): intestinal perforation and peritonitis by Wagner (1886), Zimmermann (1874), Silbermann (1890), Nobecourt (1926) and Fiolle (1930): peritonitis without perforation by Hartglass (1949): acute appendicitis by Tuerkel (1914), Pirker (1936), Spitzer (1948) and Vallego (1950).

Case reports on three patients whom the author has observed are briefly presented to show the difficulties in diagnosis of abdominal complications.

Case 1—H.St., 53 year old male (Barmbeck, Hamburg). There was no history of past diseases except for the presence of a very sensitive skin. The onset of the present illness occurred on June 23, 1943, with appearance of hives on both legs, the trunk, neck and both hands. Later this was complicated by pustulation and impetiginization. He was admitted to the Dermatological Department of the hospital, where he was treated for generalized eczema. On July 6, 1943, a sudden onset of vomiting, abdominal colic, especially in the right lower abdom with diarrhoea was noted. He complained of rheumatic pains in the lumbar region. On July 8, 1943, melena was noted for the first time and the surgeon was consulted for this reason.

The patient was lying in bed, his legs drawn up, apparently in great distress. On face and abdomen the skin showed signs of eczema in the dry chronic stage. A few fresh petechiae were noted on both lower legs. His abdomen was distended, rigidity and tenderness was very marked in the right lower quadrant. No masses were palpable and the patient vomited a greenish offensive fluid. Stools were liquid and contained coagulated blood and mucus. The joints were not affected, but there was some tenderness in the lumbar region. The urine sediment contained red blood cells. Blood pressure was 160/95. Blood picture R.C.B. 4,400,000—Haemoglobin 65%—Colour Index 0.7—W.B.C. 20,000, Segments 83%, Lymphs 14%, Monos 3%. Thrombocytes 260,000, Bleeding time $\frac{1}{2}$ minute, Clotting time 3 minutes—Rumpel-Leede—positive. Sed. rate after 1 hr. 10 mm., after 2 hrs. 26 mm. An intussusception was strongly suspected and laparotomy was done on the same day by the author. The abdominal cavity contained sanguinolent fluid. The small intestine was distended and showed haemorrhagic rings alternating with normal bowel in the lower jejunum and upper ileum. In the affected areas the bowel wall was thickened and felt very solid. About 60 cm. proximal to the ileo-cecal wall a 15 cm. portion of the ileum was invaginated into the distal portion. The loops could be easily disengaged and it became apparent that the head of the intussusception was formed by a haemorrhage in the bowel wall corresponding to the size of a plum. The mesenteric and parietal peritoneum too showed multiple small areas of haemorrhage. The abdomen was closed. Post-operatively the patient developed a wide spread purpura in the skin and the mucous membranes but improved gradually until July 21 when a new attack of abdominal pain and cutaneous purpura occurred although much milder than the first one. The patient had to be discharged prematurely because of war damage to the hospital on July 27, 1943, but was seen again in March, 1945, in good health.

Case 2—60 year old male (Barmbeck, Hamburg). Following a twenty-four hour period of anorexia and nausea, the patient started to vomit and to suffer from severe colic in the lower abdomen. He was admitted to hospital on June 18, 1944.

The patient appeared in good general condition with no skin lesion, no jaundice, no joint pains. Repeated vomiting of greenish fluid and loose bowel movements mixed with bright red blood were noted usually immediately following periods of abdominal cramps. There was a diffuse tenderness of the entire abdomen and some rigidity around the umbilicus. The rectal examination did not reveal any abnormality.

Lab. examination—N.P.N. 24 mg. %—Uric Acid 3.24 mg. %—Cryoscopy—0.562 degrees—Bilirubin 0.5 mg. % Stool negative for pathogenic bacteria. Urine diastase 38°/30', 16 units. Sed. rate after one hour 58 mm. after two hours 97 mm. Blood picture—R.B.C. 5,200,000, Hb. 96%, Colour index 0.9, W.B.C. 13,600, Segments 70%, Juv. 4%, Stabs. 10%, Monos. 5%, Lymph. 11%. Thrombocytes 285,000, Urine: albumen—positive, the sediment contained few pus cells. Bleeding time 3½ minutes. Clotting time 4 minutes.

The following two days the attacks of vomiting and abdominal pain and passage of blood per rectum became more frequent and more severe and an intussusception could no longer be ruled out with safety. A laparotomy was done (Treplin): a great amount of serosanguinolent fluid was found in the peritoneal cavity. No signs of inflammation were noted. About three feet above the ileo-cecal wall the small intestine showed a great number of half-circular and full circular haemorrhages in the bowel wall which led to thickening and tumefaction of the involved areas. About seven feet of the small intestine were involved. Multiple petechiae were scattered all over the mesenteric serosa and the mesenteric lymph nodes were greatly enlarged. There was no evidence of past or recent intussusception.

The post-operative course was complicated by increased haemorrhages and secondary anaemia. The patient became somnolent and showed encephalitic signs which were interpreted as due to haemorrhages into the basal ganglia. At the same time a typical cutaneous purpura appeared and the Rumpel-Leede test became positive. Under symptomatic therapy the patient improved gradually and was discharged on August 8, 1944.

A follow up examination in March, 1945, showed the patient well and free from relapse.

Case 3—B.G., 42 year old Amhara, (Jimma, Ethiopia). This Amharic native became ill following the taking of cousoo, a well known and highly appreciated vermicide among the natives of Abyssinia. He noticed densely scattered eruptions of petechiae and haemorrhagic macules, at first on both legs and the abdominal wall, later involving the whole body. It came on in crops at intervals of one to two days associated with severe joint and muscle pains with swelling in elbow, finger joints and right shoulder. The condition improved slightly in the hospital on neoantergan, 2 cc. B.I.D., I.M., but he became subject to a second very severe attack fourteen days later, this time associated with vomiting, melena and frequent abdominal colics. The anti-histaminic treatment was repeated and the symptoms disappeared promptly in one week.

The more we see of these diseases, the more it becomes apparent that that diagnostic errors are many and varied. Many patients have been operated upon for suspicion of appendicitis and none has been found, as in the case of Zothe, Fraser, Knoflach, Ramp, Koenig, Molesworth and Sastin. In these cases often no pathological findings were seen on the appendix but in a few the appendix was thickened by intramural haemorrhage (Tuerkel). Only very seldom a true inflammation was found (Spitzer, Pirker, Vallego). Vallego's case was a fifteen year old boy with four attacks of typical Henoch's abdominal purpura during the last of which signs of appendicitis dominated the picture. A suppurative appendicitis of streptococcal origin was found

associated with haemorrhages into the wall of the appendix. Rosenow clarified a diagnosis in one case by abdominal paracentesis on obtaining a sero-sanguinolent fluid.

Another diagnostic pitfall is intussusception. The arrangements of the haemorrhages can easily be explained on anatomical grounds. The vessels which enter the bowel from the mesentery divide into its branches which run circular in the non-contracted and spiral in the contracted bowel (Wolf, Heidegger). This is the reason why the blood extravasation produces a narrowing of the bowel lumen from all sides giving rise to increased peristalsis to overcome the resistance and eventually to the intussusception. The proximal loop is pushing the narrowed and solid portion into the distal non-contracted loop (Propping, Nothnagel). If a tumor cannot be felt, the exclusion of intussusception in the presence of a suggestive history and other clinical signs is often very difficult. X-ray examination after barium swallow may be of some value (Whitmore and Patterson). Often it will be wiser to do a laparotomy. Only very few cases are known where the invaginated sloughed and was expelled per rectum (Ledeler). Nearly all cases in the literature show the lesions in the ileum and the jejunum. Rindfleisch observed two patients with the picture of acute duodenal stenosis and he thought that the haemorrhage may have been near the duodeno-jejunal flexure.

Peritonitis is another abdominal complication. It can be due to perforation of the bowel following circumscribed bowel-wall necrosis (Zimmermann, Wagner, Silbermann), or gangrene of the invaginated portion or due to permeation of organisms through the intact but damaged bowel wall (Hartglass). The picture can vary extremely and can simulate ileus (Zothé, Gielman), appendicitis (Knoflach, Ramp, Molesworth and others), mesenteric thrombosis, periarteritis nodosa, erythema nodosum of the intestine (Treplin), erythema exudatum multiforme (Osler), haemorrhagic enteritis due to anthrax, streptococcal intestinal phlegmon (Wassiljew, Rix, Hamazaki), intestinal tuberculosis (Leitner).

Until recently the treatment of abdominal purpura was purely symptomatic. Finkler was able to demonstrate a Vitamin C deficiency in many forms of haemorrhagic purpura and saw improvement of the Henoch type after administration of large doses of Vitamin C. Sapinski tried a very different way. He treated a patient with purpura due to food allergy with ultraviolet radiation and saw, following a short period of aggravation of the bleeding tendency, a very drastic improvement. He thought that this was due to the liberation of histamine-like substances with desensitizing action. A similar action may be the rationale of the X-ray therapy advocated by Lazarus. Antihistaminic substances were tried but not on a comparable basis. The third case in this paper seemed to have responded very well to Neoantergan.

The anaphylactoid purpura being an illness of allergic origin was very likely to respond favourably to ACTH and Cortisone and the first results have already been published. Kugelmass reports his experience with Cortisone in purpura of children and found that in the Henoch type the gastronintestinal disturbances cleared within 36 hours, purpura manifestations within 48 hours and capillary fragility within 73 hours, blood in urine and stool in 84 hours.

ACTH has been used by Stefanini and co-workers on a three year old child and by Pribilla on two cases. Both report good results but Gairdner found results disappointing.

The French school favours very much the idea that the abdominal signs are of sympathetic nature (Langeron, Nolf) and Seror has recommended repeated lumbar sympathetic blocks at the onset of the abdominal symptoms and early in intussusception.

The relatively great number of cases collected from the literature shows that dangerous complications during visceral crises in abdominal purpura are not at all rare and that laparotomy should not be delayed in the hope that it may only be a "False acute abdomen". In no case in the literature has the operation, even if done for exploratory purposes alone, altered adversely the course of the disease, whereas deaths have occurred due to too conservative an attitude.

REFERENCES

1. ANDERSON, A. B.: *Med. J. Australia*, 1: 305, 1947.
2. ALTHAUSEN, T. L.: *Ann. Surg.*, 106: 242, 1937.
3. BALF, C. L.: *Arch. Dis. Childh.*, 26: 125, 1951.
4. BALLIN, MORSE: *Amm. Surg.*, 91: 203, 1930.
5. BERGSTRAND, HILDING: *Act. path. et microbiol. Scand.*, 91: 11, 1951.
6. BICKLEY, J. W.: *J.A.M.A.*, 143: 406, 1950.
7. BUJNEWITSCH: *Klin. Vorlesgn. Knauen* 1936.
8. CHAREMIS, C., ZERVOS, N.: *Helv. paed. Act.*, 6: 2, 160, 1951.
9. CLIFFORD, D., MARTNER, B.: *Paediatrics* 4: 102, 1949.
10. DINKLER: *Dtsch. med. Wsch.*, 64: 523, 1938.
11. DINKLER: *Dtsch. med. Wsch.*, 4: 104, 1941.
12. DOEBELI: *Schweiz. Korrespondenzblatt* 201, 1908.
13. FOURNIER, M. A.: *La Presse Med.*, 58: 1026, 1950.
14. FRASER: *J.A.M.A.*, 95: 1299, 1921.
15. GAIRDNER: *Quart. J. Med.*, 41: 95, 1948.
16. GAIRDNER: *Practitioner*, 168: 49, 1952.
17. GAMSTEDT: *Act. Chir. Scand.*, 75: 3.
18. GARA: *Jahrbuch f. Kinderheilkunde* 1912.
19. GLANZMANN: *Schweiz. Med. Wsch.*, 1943, 1937.
20. GLANZMANN: *Schweiz. Med. Wsch.*, 1261, 1940.
21. HAMAZAKI: *Zbl. f. Inn. Med.*, 108: 72.
22. HARTGLASS, M.: *Mem. Acad. Chir.*, 75: 242, 1949.
23. HENOC: *Berl. Kl. Wsch.*, 1874.
24. HENOC: *Prag. Med. Wsch.*, 11: 494, 1886.
25. HEIDEGGER: *Schweiz. Med. Wsch.*, 13: 477, 1941.
26. KAEMMERER: *Muench. Med. Wsch.*, 1: 459, 1924.
27. KKAUTZ: *Arch. f. kl. Chir.*, 80: 542, 1908.
28. KUGELMASS, I. N.: *N.Y. State J. Med.*, 51: 2439, 1951.
29. KOENIG: *Volkman's Sammlung kl. Vortr.*, 36, 1892.
30. LAZARUS: *J. Urol.*, 62: 354, 1949.
31. LANGERON, L., NOLF, V. etc.: *La Presse Med.*, 58: 1036, 1950.
32. LEDERER: *Zsch. f. Kindhk.*, 4: 227, 1913.
33. LEITNER: *Zbl. d. Tbc. forschg.*, 43: 305, 1935.
34. MOLESWORTH: *Lancet*, London, 5150, 1922.
35. OSLER: *Am. J. M.Sc.*, 110: 629, 1895.

36. OSLER: *Am. J. M. Sc.*, 127: 75, 1904.
37. PRIBILLA, K.: *Muench. med. Wsch.*, 94: 431, 1952.
38. PROPPING: *Mitteilg. Grenzgeb. Chir. Med.*, Vol. 21.
39. RAMB: *Zbl. f. Chir.*, 42: 1973, 1941.
40. REHBERG: *Zbl. f. Inn. Med.*, 47: 498.
41. REIMANN, H. A.: *J.A.M.A.*, 141: 175, 1949.
42. RIX: *Virch. Arch.*, Vol. 309, 1942.
43. ROSENOW: *Med. Klin.*, Vol. 9, 1931.
44. SAPINSKI: *Wien. kl. Wsch.*, 3/4: 51, 1944.
45. SCHNEIDER: *Jahrb. f. Kindhk.*, 1913.
46. SCHMIDT: *Klin. Wsch.*, 11: 46, 1935.
47. SEROR, M.: *La Presse med.*, 59: 1245, 1952.
48. STEFANINI, M., ROY, A. CH.: *J.A.M.A.*, 144: 1392, 1950.
49. STORCH: *Ref. in Bauer H. Muench. med. Wsch.*, 94: 639, 1952.
50. SUSTIN, N.: *Chirurgia ;Russ.* 2: 78, 1948.
51. SEIDELMAYER: *Zsch. f. Kindhk.*, 61; 217.
52. SILBERMANN: *Paed. Arbt. Festschr.*, Berlin 1890.
53. SCHWARTZMANN: *Arch. f. Paed.*, 57: 389, 1940.
54. TREPLIN, G.: *Muench. med. Wsch.*, 72, 1913.
55. TUERKEL: *Zbl. Chir.*, 59: 8, 1941.
56. VALLEGO, E. A.: *La Presse Med.*, 37: 28, 1950.
57. WAGNER: *Arch. f. Heilk.*, 10: 361.
58. WASSILJEW: *Russ. Arch. f. Path. Anat.*, 146, 1937.
59. WHITMORE, W. H., PATTERSON, G. M.: *Radiology* 46: 373, 1946.
60. WOLF: *Schweiz. Med. Wsch.*, 13: 477, 1941.
61. ZIMMERMANN: *Arch. f. Heilk.*, 3, 1874.
62. ZOTHE: *Zbl. f. Inn. Med.*, 59: 657, 1938.

TWO ASSISTANTS WANTED

General Practice in an industrial town including the practice of medicine, surgery, obstetrics, and industrial work. If interested write for particulars. Salary is \$500.00 a month plus car expenses for one who has had a years rotating internship in a hospital and \$600.00 a month plus car expenses for one who has had two years hospital work or general practice. A new modern hospital is now being built in the town.

Dr. H. H. Harvie,
Drawer 608,
Espabola, Ontario.

Carcinoma of the Cervix

M. G. TOMPKINS, JR., M.D.
Halifax, N. S.

THE treatment of carcinoma of the cervix has undergone several periods of change since it was initiated.

Since 1941 at Halifax in the Gynecological Department of the Victoria General Hospital the method of treatment has been revised as follows:

(1). Radiation is the primary method of treatment. Deep X-ray combined with radium placed in shielded containers is used. Particular stress is laid on protection of the bladder and the rectum.

(2). Correction of body deficiencies is of prime importance. Blood levels are maintained by multiple transfusions; vitamin deficiencies corrected by intensive therapy. High protein diet with protein feeding between meals is also stressed to maintain plasma proteins. This is of vital importance in the process of repair.

(3). Patients are followed closely for 5 years; then at yearly intervals from then on. This is also an important stage of the treatment, for a recurrence or a poor result from radiation may be recognized early when some alternate form of therapy may be instituted.

(4). Radical surgical procedures are utilized upon obtaining a poor result in suitable cases. The results obtained during these years are tabulated below.

CARCINOMA OF THE CERVIX

Five Year Survival—1942

Class	Total Cases	No. Living	No. Dead	% Cure
I	8	3	5	37.5
II	21	5	16	23.8
III	7	0	7	0
IV	1	0	1	0
Total	37	8	29	21.6

CARCINOMA OF THE CERVIX

Five Year Survival—1943

Class	Total Cases	No. Living	No. Dead	% Cure
I	12	7	5	58.3
II	20	8	12	40.0
III	14	1	13	7.2
IV	2	0	2	0
Total	48	16	32	33.3

CARCINOMA OF THE CERVIX

Five Year Survival—1944

Class	Total Cases	No. Living	No. Dead	% Cure 100
I	4	4	0	
II	22	10	12	45.4
III	15	3	12	20.0
IV	3	0	3	0
Total	44	17	27	38.6

CARCINOMA OF THE CERVIX

Five Year Survival—1945

Class	Cases	Living	Dead	% Cure
I	9	3	6	33.0
II	30	15	15	50.0
III	12	3	9	25.0
IV	2	0	2	0
Total	53	21	32	39.6

CARCINOMA OF THE CERVIX

Five Year Survival—1946

Class	Total Cases	No. Living	No. Dead	% Cure
I	12	9	3	75.0
II	30	11	19	36.6
III	10	3	7	30.0
IV	2	0	2	0
Total	54	23	31	42.6

CARCINOMA OF THE CERVIX

Five Year Survival—1947

Class	Total Cases	No. Living	No. Dead	% Cure
I	10	6	4	60.0
IIA	15	3	12	20.0
IIB	13	1	12	7.6
III	16	1	15	6.1
IV	1	0	1	0
Post-Hyst	2	0	2	0
Total	57	11	46	19.2

CARCINOMA OF THE CERVIX

Five Year Survival—1948

Class	Total Cases	No. Living	No. Dead	% Cure
I	15	11	4	73.3
IIA	15	8	7	53.3
IIB	8	1	7	12.5
III	4	1	3	25.0
IV	3	1	2	33.3
Total	45	22	23	48.9

CARCINOMA OF THE CERVIX—STATISTICS

Year	Total Patients	Class I	Class II	Class III	Class IV	% Cure
1942	37	21.6%	56.7%	16.2%	2.7%	21.8%
1943	48	25.0	43.7	29.1	4.1	33.3
1944	44	9.0	50.0	31.8	6.8	38.6
1945	53	16.9	56.5	22.6	3.7	39.6
1946	54	22.2	55.5	18.5	3.7	42.6
1947	57	17.5	49.1	28.0	3.5	19.2
1948	45	33.3	51.1	8.8	6.6	48.9
Overall five year cure rate 1942-46 inclusive —						36.0

CARCINOMA OF THE CERVIX

Five Year Results over the World 1942-46

Sheffield.....	21
Liverpool.....	25.9
Leeds.....	26
Brussels.....	27
Baltimore.....	28
London (Middlesex).....	30
Columbia.....	31
Milan.....	32
New York Women's.....	34.1
Philadelphia (Jeff).....	34.2
Toronto.....	35
Halifax, N. S.....	36
Sloane.....	36
Manchester.....	37
Basel.....	40
Saskatoon.....	41
Stockholm.....	43
Paris.....	46

The cases are classified according to the League of Nations classification.

Stage I The carcinoma is strictly confined to the cervix.

Stage II The carcinoma infiltrates the parametrium on one or both sides but has not invaded the pelvic wall or has infiltrated the vagina but has not involved the lower *third*.

Stage III Carcinoma has infiltrated one or both pelvic walls, or was in lower third of the vagina.

Stage IV Involvement of the rectum or bladder with distinct spread.

From these results several points are evident.

(1) A steady increase in the five year survival rate has been obtained. Although improved, they are as yet unsatisfactory.

(2) An increase in the number of patients treated. The incidence of carcinoma has not increased but patients who were formerly thought hopeless are now being referred to the Gynecological Department for treatment.

(3) An increase in the number of Class I cases. This undoubtedly is largely responsible for our increased five year survival rate.

(4) The survival rate in Class III is poor and in Class IV is nil.

(5) Primary surgery with simple hysterectomy was universally fatal. This again clarifies the old dogma that there is no place in the treatment of carcinoma of the cervix by simple surgery. There is a place for surgery but this must be radical. The cases must be closely selected.

Discussion

Since early diagnosis appears to be of primary importance some discussion of the subject is warranted. Several procedures are indicated.

1. VAGINAL EXAMINATION

(a) *Palpation*

In an early lesion little abnormality is detected but in advanced lesions there is no problem. It may be an ulcerative growth with destruction of the cervix and lateral vaginal walls or it may be a exophytic growth with a polypoidal lesion arising from the cervix. The growth may give a definite friable or mushy sensation to the palpating finger. Of course the parametric spread with fixation of cervix is easily detected as a hard infiltration of the tissues.

(b) *Speculum examination*

This is an essential part of all vaginal examinations. Far advanced lesions are easily detected. The early lesion may resemble a simple erosion and unless one is suspicious these may be missed.

(c) *Stick Test*

This is a very valuable aid in diagnosis. Characteristically carcinoma with the unretarded growth soon outgrows its blood supply with resultant necrosis of the superficial areas. A simple applicator used to probe the normal cervix will not penetrate into the tissue, but if a malignancy is present it does penetrate the tissue giving an unmistakable friable sensation and this is one of the most conclusive tests. Along with this there is usually some bleeding.

II. BIOPSY

All suspicious lesions regardless of age should be biopsied. This may be done as an office procedure or in hospital.

(a) If done in the office a biopsy forceps specially constructed for this purpose may be used. If so four or more punches should be used in order to get a sample from all areas; with this some lesions may be missed. With advanced lesions a simple sponge forceps is adequate.

(b) If the patient is in hospital under anaesthesia a more adequate circular biopsy is preferable. This may be obtained by the knife or by the cautery—the former is preferable.

III. PAPANICOLAOU SMEAR

This again is an office procedure and a routine part of the pelvic examination in suspicious cases. Secretions from (a) posterior fornix, (b) cervix and (c) cervical canal, may be obtained by means of a spatula and placed on a slide. These slides are placed, immediately before they dry, in a solution of equal parts of alcohol and ether for 30 minutes. Following this they may be wrapped and sent for microscopic appraisal. Although not infallible it is useful as a screening procedure.

Before any of these procedures can be utilized one must have an inquisitive nature and examine *all* patients with symptoms referable to their pelvis.

Summary

Carcinoma of the cervix is not a hopeless disease. If diagnosed early and treated adequately the five year survival would be greatly increased.

All facilities are available in the Province for diagnosis, free of cost to the patient. Before these facilities can be utilized a proper vaginal examination with visualization of the cervix must be done. This is true of all ages and races and under all conditions.

One of the big difficulties is the unwillingness of some patients to be examined while bleeding. Some physicians are also reluctant to make an examination during this period. But time is of the essence. If a woman has an early carcinoma of the cervix by the time one month has passed she has changed from a Class I to a Class II or III and her chances of survival have been cut from 80% down to 30%. Failure to make a diagnosis does not result from ignorance but from failure to make a proper examination.

I wish to thank Dr. H. B. Atlee, Professor of Obstetrics and Gynaecology, for his help and guidance in preparing this paper.

Dalhousie University Post-Graduate Programme

presents a

WEEK IN MEDICINE

MARCH 1st - 5th, 1954

Monday, March 1st, 1954.

- 9.00- 9.45 Outline of Endocrinology—Dr. M. M. Hoffman.
9.45-10.45 Diagnosis of Diabetes—Dr. M. M. Hoffman.
11.00-11.30 Diabetes—Diets and Education of Patient—Dr. M. M. Hoffman.
11.30-12.10 Demonstration of Diets—Dietetic Dept.
12.10- 1.00 Insulin—Types and Administration—Dr. D. J. Tonning.
2.00- 3.00 Diabetic Coma—Dr. M. M. Hoffman.
3.00- 4.00 Pre and Post Operative Management of Diabetes—Dr. C. W. Holland.
4.00- 5.00 Round Table: Diabetes in Childhood—Dr. G. B. Wiswell, Dr. M. M. Hoffman, Dr. C. W. Holland.
5.00- 6.00 Round Table: Cardiovascular and Pulmonary Complications of Diabetes—Dr. L. C. Steeves, Dr. C. A. Gordon, Dr. E. F. Ross.

Tuesday, March 2nd, 1954.

- 9.00- 9.30 Diabetic Neuropathy—Dr. C. S. Marshall.
9.30-10.00 Diabetic Nephropathy—Dr. D. J. Tonning.
10.00-11.30 Diabetic Ward Rounds—Dr. M. M. Hoffman and V. G. H. Staff.
11.30-12.45 Discussion Group—Diabetes—Dr. C. W. Holland, Dr. M. M. Hoffman, Dr. D. J. Tonning.
2.00- 3.00 Pituitary Diseases—Dr. M. M. Hoffman.
3.00- 4.00 Panhypopituitarism and Anorexia Nervosa—Dr. D. J. Tonning, Dr. J. F. Nicholson.
4.00- 5.00 Hyperinsulinism—Dr. M. M. Hoffman.

Wednesday, March 3rd, 1954.

- 9.00-10.00 Metabolic Diseases of Bone—Dr. J. F. L. Woodbury.
10.00-11.00 Recognition and Management of Adrenal Disease—Dr. M. M. Hoffman.
11.15-12.45 Round Table: Hormonal Therapy in Gynaecology and Paediatrics—Dr. M. M. Hoffman, Dr. H. B. Atiee, Dr. H. B. Ross.
2.00- 3.00 Present Status of ACTH and Cortisone—Dr. M. M. Hoffman.
3.00- 4.00 Ward Rounds—Dr. M. M. Hoffman and V. G. H. Staff.
4.00- 5.00 Round Table: Pathogenesis and Treatment of Oedema—Dr. M. M. Hoffman, Dr. L. C. Steeves, Dr. D. J. Tonning.

Thursday, March 4th, 1954.

- 9.00- 9.30 Office Biochemical Procedures—Dr. F. J. Moya.
 9.30-10.00 Etiological Factors in Hyperthyroidism—Dr. D. L. Roy.
 10.00-11.00 Diagnosis Graves Disease—Dr. M. M. Hoffman.
 11.00-11.45 Thyrototoxic and Other Myopathies—Dr. Walter Leslie.
 11.45-12.45 Other Forms of Goitre—Dr. M. M. Hoffman.
 2.00- 3.00 Thyrocardiac Disease—Dr. D. L. Roy.
 3.00- 4.00 Hypothyroidism and Abuse of Thyroid Therapy—Dr. W. A. Murray.
 4.00- 5.30 Round Table: Management of Goitre—Dr. M. M. Hoffman, Dr. N. G. B. McLetchie, Dr. A. L. Murphy, Dr. D. L. Roy.

Friday, March 5th, 1954.

- 9.00- 9.30 Gout—Dr. J. F. L. Woodbury.
 9.30-10.00 Hypercholesterolemia—Dr. C. M. Harlow.
 10.00-11.00 Malnutrition and Obesity—Dr. R. M. MacDonald.
 11.15-12.45 Round Table: Hormonal and Drug Therapy of Neoplasm—Dr. M. M. Hoffman, Dr. N. H. Gosse, Dr. H. C. Read, Dr. D. J. Tanning.
 2.00- 3.00 Round Table: Recent Developments in Therapy—Dr. R. L. Aikens, Dr. J. G. Aldous, Dr. M. M. Hoffman, Dr. J. W. Reid.
 3.00- 4.00 Ward Rounds—Medical Staff V. G. H.
 4.00- 5.00 General Question Period—Dr. M. M. Hoffman and V. G. H. Medical Staff.
 5.00- 6.00 V. G. H. Staff Conference—Programme by: Department of Medicine.

The Fourth Floor Clinic Room at the Victoria General Hospital has been booked for all course sessions.

The College of General Practice of Canada

It is urged that all general practitioners read the latest "Provisional Regulations" contained in the January issue of the Canadian Medical Association Journal. Further information will be contained in the March edition of the Canadian Medical Association Journal.

Please note that the Foundation Fund of the College is now open for subscriptions. It is hoped to obtain two hundred benefactors who will subscribe One Hundred Dollars each to carry on the work of the College. Subscriptions to be sent to Doctor Glenn I. Sawyer, Honorary Treasurer, College of General Practice of Canada, 244 St. George Street, Toronto 5, Ontario.

At a meeting in December, 1953 of the Halifax Branch of the General Practitioners' Society a committee was appointed to consider the feasibility of setting up an Emergency Service staffed by general practitioners on a rota system. This is a perennial problem and on this occasion was reviewed at the request of the Halifax Medical Society which had received a complaint from a local citizen who had been unable to obtain the services of a doctor in an alleged emergency at night.

A second committee was appointed to investigate the possibility and cost of setting up an exclusively Medical (and Dental) Telephone Answering Service.

F. MURRAY FRASER,
Secretary, General Practitioners' Branch.

Physicians Wanted

Vacancies are available for full time physicians interested in diagnostic and preventive medicine in industry. Preference will be given to those with experience in practice and certification in Internal Medicine.

Physicians are encouraged to maintain hospital, clinic and teaching affiliations. For further particulars apply to the Secretary.

Society Meetings

CUMBERLAND COUNTY MEDICAL SOCIETY

The semi-annual meeting of the Cumberland County Medical Society was held at the Fort Cumberland Hotel in Amherst on Wednesday afternoon December 9th, 1953.

The following doctors were present: B. E. Goodwin, A. E. Mackintosh, W. O. Coates, D. Crury, R. E. Price, H. A. Myers, B. MacCannell, J. A. Langille, W. T. M. MacKinnon, W. R. Morrison, H. E. Christie, W. M. Grant, and G. McL. Saunders of Amherst; J. C. Murray and J. R. Ryan of Springhill, D. M. Cochrane and E. G. Kelly of River Hebert; J. E. Park and D. R. Davies of Oxford; A. Elmik of Advocate Harbour; W. E. Hirtle and B. E. W. Barnhill of Sackville, N. B.; E. F. Ross and M. G. Tompkins, Jr. of Halifax.

Following a short business meeting, Doctor Ross was introduced by the President, Doctor J. C. Murray, and gave the members a very interesting and instructive paper on the treatment of fractures of the tibia and fibula. This was illustrated by a series of slides, with Doctor Tompkins acting as projectionist.

Doctor Ross then answered several questions on the subject, and was given a hearty vote of thanks by the doctors present.

The meeting ended with a dinner.

J. A. LANGILLE,

Secretary-Treasurer.

General Practitioner Wanted

There is a good opening for a general practitioner at Shelburne, Ontario. Further particulars may be secured from the Secretary's office.

Practice Vacant

There is a practice at New Glasgow, P. E. I. House with office available. For further particulars apply to the Secretary.

Abstracts

The Anatomic Basis for Ischemia Localized to Certain Muscles of the Lower Limb.

EDWARDS, E. A.; Surg., Gyn., and Obs.; 97: 87, 1953.

The arterial supply of each muscle of the lower limb, as revealed by dissection, is presented. The arterial supply to each muscle is essentially distinct from that to neighboring structures, and the muscles vary in the number of arteries supplying them.

This explains localized necrosis of a muscle or of muscle groups following occlusion of the supplying vessel, either by trauma, or by atherosclerosis. Similar though less profound changes explain ischemic pain in patients whose pedal pulses are palpable. The lack of significant collateral circulation to muscles of the lower limb is one factor in the frequent failure of sympathectomy to relieve claudication.

C. D. CHIPMAN.

Coin Lesions of the Lung

STOREY, C. F., et al.; Surg., Gyn., and Obs.; 97:95, 1953.

The authors report forty cases in which coin lesions were found which were all diagnosed histologically either at operation or at autopsy. They define a coin lesion as a solitary, round or oval shadow on the roentgenogram, surrounded by normal lung tissue, and producing no symptoms.

The average age of the patients in this series was thirty-three years and the incident of malignancy was 17.5%. It is pointed out that some of these lesions are walled-off tuberculous cavities which at any time may break open into a bronchus and result in dissemination of the disease. Calcification in the lesion, by itself, cannot be regarded as positive evidence against malignancy.

It is suggested that all such lesions be examined histologically at thoractomy, and that the extent of the operative procedure and the post-operative management of the case depend on the microscopic findings.

C. D. CHIPMAN.

An Evaluation of the Shunt Operation for Portal Decompression.

JAHNKE et al., Surg., Gyn., and Obs.; 97; 471, 1953.

The authors review thirty cases of portal hypertension which they have treated by operation. In twenty-two of the cases port-acaval shunt was done, and the remainder were treated by other surgical procedures including the splenorenal shunt. Pre-operative evaluation included liver function tests, manometric measurements of the pressure in esophageal varices, rectum to lung circulation times, and splenic venography in which X-rays were taken following injection of Diodrast directly into the spleen.

Their cases have been followed from one month to three years. In 56.7% the esophageal varices have disappeared completely following operation. In untreated cases a mortality of fifty to seventy per cent is recorded within one year after the first haemorrhage. Operative mortality in this series was 6.7%.

C. D. CHIPMAN.

Congenital Anterior Chest Wall Deformities of Diaphragmatic OriginBRODKIN, W. A.: *Dis. of Chest.* 24: 259, 1953.

In place of the terms "funnel chest", "pigeon chest", and "Harrison's grooves," the author uses depression, prominence, and grooves anteceded by—congenital chondrosternal—to label these conditions. He believes them to be of congenital origin and due to abnormalities of the diaphragm dating from the first inspiration at birth. The case for rickets has tended to be disproven by careful biochemical studies, and the fact that antirachitic therapy does not help. The theory that obstructive pulmonary lesions cause them is negated by their presence from birth and their occasional unilateral occurrence. However it is admitted that rickets, etc., will aggravate existing deformities.

He considers that funnel chest is the only condition likely to produce cardio-respiratory symptoms. Phrenosternolysis and chondrosternoplasty are the terms used to describe the corrective surgical procedures. Surgery is carried out as soon as possible, usually after the fourth month.

In his hands the surgical results lend support to this theory of their causation.

G. A. BLACK