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# Gastrojejunal Ulceration

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(Read before the Ayrshire Division of the British Medical Association.)

RECENTLY I have treated a number of complications of gastroenterostomy and felt some investigations would be profitable. I also began to suspect that many practitioners must be wondering why their patients arrived home minus a portion of the stomach when a simple anastomosis would seem to offer a cure.

This evening I wish to present to you some figures, some facts and some conclusions concerning gastrojejunal ulceration and its dreaded complication gastrojejuno-colic fistula.

Let me say at once that peptic ulceration in this hospital is considered to be a medical problem and that only when the patient fails to improve, or to maintain improvement, under a strict medical regime is the surgeon called in. Gastrojejuno-colic fistula, however, is always surgical and anastomotic ulcer nearly always so.

The incidence of gastrojejunal ulcer is difficult to assess. Ogilvie states that 20 per cent of persons with anastomosis ultimately suffer from an anastomotic ulcer; Lewisohn, 25 per cent, Lahey, 15 per cent. There is general agreement that 1 per cent or less of patients after gastrectomy suffer a recurrence of trouble. Of the last 74 patients, other than perforations, who have undergone a supposedly curative operation on the stomach at my hands, 14 were suffering from the results of surgery—10 had a gastrojejunal ulcer and 4 had a gastrojejuno-colic fistula.

The cause of stomal ulcer is no more known than is the cause of peptic ulceration. That the acid factor has a bearing seems indisputable. It is certainly true that the duodenal ulcer patient, the hyperchlorhydric, is more prone to recurrent ulceration than the patient with gastric ulcer, and that achlorhydria is almost a sure preventative of further ulceration.

Experimentally<sup>1</sup> it has been proved that the further down the gut is an anastomosis established, the greater is the liability to recurrent ulceration. This confirms the clinical findings that a long loop, as seen in the anterior gastroenterostomy, makes for a dangerous operation.

Years ago gastroenterostomy was used almost indiscriminately as a cure for duodenal ulcer. Failures became prominent and reservations were made so that only those unfortunates who did not respond to medical treatment were taken to the operating table. Even then one was far too often faced with post-operative complications—and as always a surgical failure carries greater penalties for the patient than a medical failure.

Many surgeons, and I among them, then commenced performing gastroenterostomy only when we considered pyloric stenosis to be present. Re-examination of the patients often shows that both the pylorus and the stoma are in use. The original obstruction was due to oedema and spasm; these subsided after operation and the patient is a candidate for recurrent ulcera-

tion. I now reserve gastroenterostomy for poor-risk patients, with a low acid who, at operation, show a firm fibrous stenosis at the pylorus.

This last statement is a very confident one—too confident! At the moment in my wards are two patients on whom I have recently performed a gastroenterostomy. One is justified because all three of the above criteria are fulfilled in his case. The second patient, however, should have had a gastrectomy but I was driven to do an anastomosis because he was such a bad risk. He has a very bad pulmonary emphysema and bronchitis, and he arrived in hospital very badly dehydrated, and with plasma proteins down to 4.3. Even cautious intravenous therapy was fraught with danger as was proved one night when his lungs suddenly became very moist. We found it impossible to bring him into fluid balance and he went to the operating table with plasma proteins of 5.6 and urine chlorides of 3. Following the anastomosis, the use of drip-feeding and a vareo diet has happily resulted in a great improvement. He left his bed the day after operation and is quite fit now. I believe that I can start to worry about a gastrojejunal ulcer at any time now!

The length of time after operation before symptoms appear is usually stated to be about two years; although the patient states this, I find that close questioning often elicits a story of distress commencing within six months. As an example, one of these patients gave a history of a gastroenterostomy twenty years ago. He stated that symptoms had recurred ten years ago. On close questioning I found that mild symptoms of distress and a sense of fullness in the abdomen after food with some eructations had been present ever since he left hospital, but he considered these as the normal penalties a man must suffer after an assault by a surgeon. This man had the biggest secondary ulcer I have ever seen. It involved the pancreas, extended right round the jejunum and had so involved the colon that colonic mucosa formed the base of the ulcer anteriorly.

The symptoms may be quite mild for a time, but sooner or later the pain becomes constant and severe; it lacks the remission periods so common with peptic ulcer. Radiation of pain to the back and to the lower abdomen is common.

Examination reveals tenderness above and to the left of the umbilicus, sometimes a mass is palpable there. A barium meal may show an actual ulcer-crater or only persistent spasm and tenderness.

The important complications of anastomotic ulceration are three:

1. Acute perforation occurs and carries a mortality of 50 per cent.
2. Haemorrhage is frequent, it is rarely massive and may be all the more serious for that, as the blood, being in small quantity, is passed along into the bowel.
3. Gastrojejuno-colic fistula, which we shall consider in a moment.

Surgical measures, I believe, are necessary in every gastrojejunal ulcer. Medical treatment sometimes result in healing of these ulcers, but I very much doubt if a single one remains healed.

The ideal treatment of this condition may well turn out to be vagotomy, but the operation has not so far lived up to expectations. The re-establishment of a strongly acid stomach-content in one or two years has been repeatedly demonstrated. Re-activation of ulceration and indeed the formation

of new ulcers has been shown to occur after a supposedly adequate operation. Direct attack on the ulcer constitutes the most common method of treatment. To undo the anastomosis and perform a gastrectomy is the aim—it carries a mortality of 20 per cent. I have done this on six patients, one of whom died from an acute perforation of an unrecognized ulcer in the jejunum.

For one reason or another it may be considered safer to simply undo the anastomosis and return the parts to the anatomical normal, this of course can only be done if the pylorus is patent and the duodenum not grossly diseased. I have done this four times. No patient died, but one returned to me for a gastrectomy for recurrent duodenal ulcer.

Gastrojejuno-colic fistula is the complication most to be dreaded. It occurs in about 14 per cent of gastrojejunal ulcers<sup>2</sup>.

The symptoms here are well-known. Eructations of foul gas, faecal vomiting, frequent loose frothy stools. Vomiting is occasionally vicious, so much fluid being lost that it is almost impossible to regain a correct fluid balance. One of my patients was vomiting 2-3 pints as often as four times a day. Occasionally, the patient is superficially not too badly upset, and is able to go about. One man recently recounted how embarrassed he was on buses when eructations occurred; to counter the distressing odour he decided to always smoke a cigarette. Once, however, a neighbour on the bus remarked what terrible cigarettes he smoked and enquired, "did he buy them at the Co-operative Stores?" Investigation showed how badly upset was his body chemistry. His prothrombin time was grossly lowered; his plasma proteins were down to 3, and his measurable fluid balance was on the negative side by 20 ounces in twenty-four hours.

After careful treatment, with particular reference to plasma proteins, chlorides and heavy medication with a sulphha—I use Phthalylsulphathiozole and Vitamin K—surgery can be instituted.

The treatment is a trying and grave matter. A review from the Mayo Clinic<sup>3</sup> shows that in 13 patients inadequately prepared the mortality was 61.5 per cent. In those adequately prepared 27.7 per cent died.

This latter figure is agreed by other authorities provided no resection is done, but then if the stomach is not resected 60 per cent return because of recurrence of original symptoms.

I have dealt with four of these fistulae, one had a gastrectomy, one had a pyloroplasty, and two were returned to the anatomical normal. They all survived, thanks to the unremitting care of my house surgeons and nursing staff.

It is only fair to state that Lahey<sup>3</sup> by a two stage operation has, in one series, reduced the mortality to 7.7 per cent. This is a figure to be aimed at by all surgeons. I feel it will be attained by few.

The end of worry in these cases is not in sight at the completion of the operation. Of all the possible complications three, I believe, take pride of place.

1. *Paralytic Ileus*: A routine check of bowel sounds will give the earliest indication of the onset of ileus. When no sounds are heard our routine treatment is commenced, the passage of a Miller-Abbot tube, repeated small doses of morphia, and intravenous therapy, followed later by the judicious use of acetyl choline has had happy results. In the

last two years, one patient with ileus has died, twenty-four were diagnosed.

2. *Pulmonary Embolism*: The twice daily palpation of calf muscles, and the widespread use of heparin has prevented embolism in any of the last 1700 major surgical operations.
3. *Chest Complications*: Our Electrotherapeutic Department commences teaching patients the day of admission, and the patient is encouraged to leave his bed the day after operation. We do see pulmonary atelectasis but have not so far had a serious chest lesion in my recollection.

Gastrectomy for a peptic ulcer which has failed to react to medical treatment carries just about the same mortality as does gastroenterostomy. It varies for each operation from 0.85 per cent to 7 per cent. My own mortality in the period covered by this series of cases is 4.5 per cent for Gastroenterostomy, and 4.6 per cent for gastrectomy. In no case was death due directly to the ulcer or the operation—e.g. one of cerebral thrombosis, another of hepatic cirrhosis.

I do not deny that there is a place for gastroenterostomy, but I feel that there must be strict reservations on its use. The operation ultimately carries a very much greater mortality than gastrectomy.

I would suggest that the only way to reduce the mortality from secondary ulceration is to consider as very serious any complaints of abdominal pain by a patient with a gastroenterostomy; to treat such a patient as urgent and very ill, remembering the grave chemical upset which must be overcome before successful surgery can be instituted.

I would end by quoting a phrase from Lord Moynihan—"We have made surgery safe for the patient, we must now make the patient safe for surgery"—and one might add "and from surgery."

#### References

1. Mann and Williamson (Ann. Surg. 77.409/23).
2. Marshall (Ann. Surg. May, 1945).
3. Mayo Clinic (Arch. Surg. Nov., 1941).
4. Lahey (Amer. J. Dig. Diseases, Vol. VI—No. 9).

# The Nutritional Aspects of Butter vs Margarine

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THE production of margarine was first described by a French chemist, Mège-Mouries, in 1869 during the Franco-Prussian war, in response to a contest sponsored by Napoleon III to develop a substitute for butter. It was first patented in the United States of America on December 30, 1873. It is prepared by blending animal or plant fats with salt and milk, properly cultured and ripened. The flavour and other physical characteristics of good margarine are very similar to those of butter.

There have been three stages in relation to preference and use of basic fats in its manufacture, (1) beef and mutton tallow, (2) oleo oil, (3) coconut, palm-kernel and similar oils and more recently hydrogenated oils, such as cottonseed, corn, soy bean and whale oils. The variability in basic ingredients which depends on availability and cost, is shown in Table I and represents modern practice. It should be noted that this use renders edible, fats which would not ordinarily be considered palatable except in hydrogenated form as shortening.

TABLE I

Distribution of Fats used in Manufacture of Margarine expressed  
as millions of pounds annually

Fat	U. S. A. 1941	Great Britain 1937	Germany 1935
Cottonseed Oil.....	150	31	0
Peanut Oil.....	2	69	29
Soybean Oil.....	76	0	60
Palm Kernel Oil.....	1	22	126
Coconut Oil.....	30	60	99
Whale Oil.....	0	148	470
Tallow.....	21	16	7
Lard.....	8	2	4
Miscellaneous.....	2	11	69
Total.....	295	359	864

The process of manufacture begins with pasteurized milk or cream which is inoculated with a culture of lactic acid bacteria, *Lactobacillus*, and "ripened" at 70° F. for 12 to 30 hours. The basic, refined and deodorized fat in liquid state is churned into the milk at 80-100° F. Coloring dye may be added and an emulsifying agent, such as sodium phosphate, lecithin or sodium monostero sulphoacetate is frequently used. Churning continues for ten minutes; then

the charge is emptied into chilled tanks or votators and the solid "paddled" in a butter worker or blender to remove water and to incorporate sodium chloride, flavouring (diacetyl) and vitamin concentrate (fish liver oil).

The term "oleo" arose from an older practice in which fat from caul, heart and kidney of beef was recovered from slaughterhouses and processed into oleo oil or stock and oleostearin representing 70 and 30 per cent of the total fat respectively. The former was used extensively in the manufacture of oleo-margarine. Under present conditions three types of margarine are often recognized, (1) animal, (2) vegetable, (3) nut, depending on the predominant basic fat.

A typical analysis, compared with butter, is shown in Table II on the basis of a sample, fortified with vitamin A according to the law in the U. S. A. setting a minimum of 9,000 I.U. per lb. In England vitamin D must also be added. Butter, however, is variable in its vitamin content depending on season but most months of the year it is about 10,000 I.U. per lb. (2,500-20,000 I.U.).

TABLE II  
Composition of Butter and Margarine

	Margarine	Butter
	%	%
Water .....	14.7	15.5
Fat .....	80.9	81.0
Protein .....	0.6	0.6
Carbohydrate .....	0.5	0.4
Salt .....	3.0	2.5
Vitamin A .....	2,000 I.U.	2,400 I.U.
Vitamin D .....	....	35 I.U.
Calories .....	733	733

Margarine has been manufactured in large quantities in Europe for many years. Its production in the United States is dependent on federal and state legislation and it has been restricted by discriminatory taxation with respect to coloring. It is not generally known that in Canada coloring of butter is permitted under our Food and Drug Act. This is both unjust and objectionable from a nutritional point of view in that the presence of carotene is masked and a false impression given to the consumer. This is important because 60 to 75% of the vitamin A activity is in the form of carotene.

The amounts of fats used in Canada, the U. S. A. and the United Kingdom are shown in Table III. As compared with the pre-war level of 1935-39 there have been marked changes during the past ten years. In the U. S. A. consumption has risen from about 2 lbs. per person per year to about 4 lbs. and from 17% of the butter used to 37% in 1945. In Great Britain the change is very notable. The world situation however, as regards fats is still very abnormal.

In Canada the manufacture of margarine was permitted during World War I but the product marketed was of poor quality. In the early 1920's this permission was withdrawn and its manufacture has never been allowed since that time. Canada's butter supply is such that Canadians eat more butter per head of population than almost any other nation. It was 31 lbs. in 1939. An edible fat, cheaper than butter is economically now desirable because the consumption of bread is governed in large measure by the supply of a fat spread and bread is our basic food. It is therefore, important to assess the relative value of butter and margarine on a strictly nutritional basis. The problem is fundamentally one of the relative value of butter fat and commercial plant oils in terms of their vitamin content and of fatty acids.

TABLE III

Supplies moving into Civilian Consumption (lbs./head/yr.)

	Canada			U. S. A.			U. K.		
	1935-39	1945	Change %	1935-39	1945	Change %	1935-39	1945	Change %
Butter.....	31.0	28.6	- 8	16.7	11.4	-32	24.8	9.5	-62
Margarine....	.....	.....	.....	2.9	4.2	-45	9.0	17.4	+93
Lard.....	3.9	4.7	.....	11.0	11.8	.....	.....	.....	.....
			-13			- 5	9.3	9.2	- 1
Shortening...	10.6	7.9	.....	11.7	9.8	.....	.....	.....	.....
Other.....	1.8	1.4	-22	6.3	6.2	- 2	8.2	4.6	-44
Total.....	41.4	37.2	-10	44.7	40.4	-10	45.5	36.4	-20

Numerous experiments were carried out between 1912 and 1922 on various animals, especially rats and dogs. These showed clearly the superiority of butter fat as a vehicle for vitamins A and D over plant oils and lard with reference to growth, calcification and keratinization. As methods for vitamin assay, chemical and biological, have improved this fact has been confirmed. An exception has been found only in certain oils from grains which are much richer in vitamin E than is butter.

The relative digestibility of commercial fats has been measured and the degree of digestion and assimilation has been found to be about 95%. Fats with high melting points, such as cocoa butter and the tallows, were somewhat less readily digested. Holt and his co-workers showed in 1935 that premature infants grew better on vegetable oils than on butter. The coefficients of absorption were 97% for corn oil, 94% for soy bean oil and 89% for butter.

There has been an extensive controversy in the recent scientific literature over the question as to whether butter may not have some special fatty acids which are nutritionally essential. A small quantity of linolic acid has been accepted as a necessary dietary element for some time but plant oils are richer than butter in this respect. A group of investigators in Wisconsin (1940-43) thought that they obtained better growth in very young rats with butter



and lactose as the sole carbohydrate constituent than with vegetable oils, when all necessary vitamins were supplied. There was no difference when other carbohydrates were fed in place of lactose. They believed that the essential difference was to be found in the saturated acid fraction. This is a rather academic question as applied to human nutrition. However the conclusions of the Wisconsin group have been denied by Deuel and his co-workers (1943-44). They were reaffirmed by Elvehjem and his group who tested seven varieties of margarine under similar conditions and concluded that they were slightly inferior to butter. Deuel *et al* however, explained this difference on the basis of flavour without adequate protection against rancidity and the fact that the rats were permitted to eat the diet *ad libitum*. In 1945 Deuel *et al* showed that it was possible to feed and rear rats through ten generations on fortified margarine added to the Sherman B diet which contains whole wheat and whole milk powders. They conclude "that a vegetable fat such as that contained in a margarine can serve adequately in place of butter fat for growth and reproduction on a diet otherwise nutritionally satisfactory."

So the matter rests at present. Generally, nutritionists are agreed that fortified margarine is nutritionally equivalent to butter in human dietaries. This has been established very recently with 267 children in controlled dietary experiments over a period of two years (Leichenger, H., Eisenberg, G., and Carlson, A. J., J. Am. Med. Assoc. 136, 388, 1948). The general opinion, however, favours the legal regulation in England which requires a minimum content of vitamin D as well as A in fortified margarine. By providing a good substitute for butter it would not only be an economic boon but it would also release more whole fluid milk to the market or for the manufacture of cheese—both nutritionally desirable. As all those who served in the Canadian forces during World War II will know, it is difficult to distinguish between margarine and butter in physical characteristics. It is not simple even by chemical means but it can be done on the basis of the refractive index and the Reichert-Meissl value. It is deplorable that a matter of such nutritional importance should assume such political significance and that a relatively small group of dairy farmers should be able to prejudice the good health of Canadians, especially the normal growth of children, in our poorer economic classes.

# What Do You Expect ?

or

## The X-Ray in Oto-Rhinology\*

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A FEW years ago I presented a paper entitled "How to be Wrong: The X-ray a Quick and Easy Method."<sup>1</sup> Infection of the accessory nasal sinuses with the complication of osteomyelitis of the skull was its subject matter with a bare reference to the temporal bone. This time perhaps it may be in order to make a few remarks with special reference to the X-ray and the diagnosis of inflammatory disease of the ear. Permit me to emphasize at the very beginning that it is purulent disease only that will occupy our attention. The selection of this as a subject was prompted by several cases recently admitted to this hospita.

The first patient had had a pain behind the ear. Her doctor had sent her to the roentgenologist to find out if she had a diseased ear! On the strength of the X-ray findings she was admitted for operation for "acute mastoiditis." On inquiry and examination there was neither a suggestive history nor clinical evidence of disease of the ear. The post auricular pain was subjective evidence only and proved to be functional in character. To be confused by post auricular is quite excusable, if not familiar with the most likely areas of tenderness. And even the roentgenologist can be excused on the basis of lack of familiarity with the normal variations of the temporal bone. I am inclined to believe that he thinks for example in terms of the femur and applies the same conception of the abnormal to the temporal bone. The femur is a femur and that is the beginning and end of the matter. You never heard of a femur being permeated with air-containing cells—or of two distinct varieties of femur each with many variations and all unrelated to inflammatory disease. Obviously you cannot apply the standards of the femur to the temporal bone.

The second patient was admitted for "chronic mastoiditis." This patient had a very small perforation secondary to a perforating injury of the drum near but not involving the periphery at about 8 o'clock associated with a recurring purulent discharge. The discharge cleared up after a few days treatment and will probably not recur when the blood (Hgb. 56%) is restored to normal. The impairment of hearing seems however, to be out of proportion to the clinical evidence of disease and a case of this kind is worthy of observation. Deafness is of course, not necessarily associated with inflammatory disease. But why should chronic mastoiditis have been diagnosed by the radiologist? I think the explanation is that on the one side there existed a perfect example of a well pneumatized bone of the mixed cell variety whilst on the side of the diseased ear there was in marked contrast the diploic, the rarest of the acellular type. But there was no evidence whatsoever to suggest mastoiditis.

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\*Delivered at the Victoria General Hospital before the Halifax Medical Society, April 14 1948.

A few years ago I had an X-ray of the temporal bones of a female aged 35 and the report was that the right mastoid was the subject of disease but that the left was apparently healthy. But it was the left I was treating for a chronic discharge. When I suggested the films must have been wrongly marked, I was told that if I stayed in at night I would not be so muddled in the morning. "If you stayed in at nights"—the very words! So there and then I telephoned regarding the bone of contention and asked which ear had I been treating. The left and furthermore that she had no knowledge of ever having had any trouble with the right. On returning to the shadows I asked the radiologist how long had the deceiving appearance been present—ten days, ten months, or ten years, and the answer was "It is impossible to tell." What then is the diagnostic value of an appearance that may be anything from thirty days to thirty years old.

Whilst preparing this paper I had an X-ray taken of a mastoid case which showed a well pneumatized bone the cell outlines were indistinct, and the whole area hazy. It was the typical picture supposedly secondary to acute inflammation. I asked a student roentgenologist what he thought of it? He was of the opinion that it showed evidence of inflammation. Correct! He then brought joy to my heart by asking when this patient had been ill. Had I said ten days ago there would have been no reason to doubt, and he would have taken the picture to have been first class evidence of the diagnostic value of the X-ray in acute mastoiditis. As a matter of fact this patient had a very severe and acute double mastoiditis in April, 1942. One side was operated on and the side now being discussed finally recovered without surgical interference. The film taken last week is identical with that taken at the height of her illness and another taken a year later. I am under the impression that the appearance is secondary to the acute inflammatory disease of April, 1942. But am I sure? Of course I am not—as I lack a photograph prior to this illness. So you see I can only assume that the acute condition of 1942 brought about those permanent changes.

Let us pass to the chronic discharging ear of many years' duration—surely to goodness this is the one situation in which the X-ray must prove itself invaluable from the standpoint of pathology and especially if a cholesteotoma is present. Without going into particulars this latter condition may be thought of in terms of an ever expanding tumor which causes bony absorption as it enlarges. Prof. S. H. Mygind<sup>2</sup> of Copenhagen (when reviewing 886 cases of chronic middle ear suppuration, 556 of which came to operation) disposed of the X-ray in two lines.

Perhaps X-ray examination may assist us. Our experience up to now has not been quite satisfactory but we intend to persevere.

Over 800 cases of any single pathological state is a very large number and you will note that 556 were operated on—the one and only way of satisfactorily answering predictions and estimating their clinical value.

Surely an area of bony necrosis can be recognized here as readily as elsewhere in the body. The answer is "No." As H. Graham Hodgson,<sup>3</sup> the English Roentgenologist writes:

On the one hand the cell walls may actually be eroded, but on the other long continued infection and consequent hyperaemia will cause decalcification and there-

fore non-opacity of the cell walls, and we have no radiological means of distinguishing between the two conditions. It is better, therefore, to describe this appearance by saying that—the cell outlines are invisible.

It then amounts to this: If there is no suggestive history of clinical evidence of disease all blurriness and shadows are meaningless to your immediate diagnosis. If the radiologist's description of what he sees seems to harmonize with the history and clinical examination—no harm is done. If the description does not agree—no attention should be paid to it. In other words the handling of the patient should be uninfluenced by this type of examination in so far as it may suggest pathological changes.

Why do I have an X-ray taken of a diseased ear? Postulating infections of a common virulence, attacking ears of individuals of like sensibility and power of resistance, with the clinical features of the inflammation expressed in varying degrees of severity, the ultimate behaviour and even the possible complications are determined by the anatomical type of bone.

The answer to the question, why do you resort to the X-ray, is because of the value of the X-ray in the realm of anatomy rather than in that of pathology. It is the only possible way of finding out short of operation if the mastoid process is

- (a) Cellular or acellular.
- (b) If cellular what is the distribution of the cells? Do they extend beyond the recognized normal limits? Is the cortex thick or thin?
- (c) If acellular it is diploic or sclerotic—the latter is a developmental not a pathological type as might be inferred from the name.
- (d) Are the processes symmetrical?
- (e) The position of the lateral sinus (as a matter of fact this can be deduced from the type).

As Mr. Asherson<sup>4</sup> said in his Hunterian Lecture, Royal College of Surgeons of England, 1942:

Normally only topographic data are to be derived from radiography of the mastoid. A diagnosis cannot be made from radiography alone; in conjunction with the clinical picture some inferences may be made. The chances are so remote of gaining any vital information from radiography of the temporal bone (other than the texture of the process) that operating should never be delayed for an X-ray.

Before closing a few references will be made to the closely allied subject, the accessory nasal sinuses. What has been said about the X-ray and the ear applies with equal force to infection of these air containing cavities connected with the nostrils.

Lillie<sup>5</sup> of the Mayo Clinic is of the opinion that

It can be said in general that roentgenologic examination gives more accurate results for conditions other than infections, such as osteoma and malignancy.

It should be emphasized that roentgenograms must not be relied on for accurate diagnosis in a case of disease of the sinuses but they must be taken into consideration along with the history and the physical findings resulting from competent observation in the case.

May I quote from the recent text of Ballinger<sup>6</sup> who after listing three-quarters of a page of modifying conditions writes:

In view of the above modifying conditions, it is illogical to assume that a diagnosis can be made from films alone. A secondary place perhaps should be given to the roentgen ray, and the main reliance should be placed on clinical means.

Proetz<sup>7</sup> in his address before the Canadian Medical Association last year said:

During a given illness, unless one has access to films made of the patient at some previous time under the same relative radiological conditions, one has no way of knowing whether some local density is recent or not.

If it should happen that the patient is not clinically improved and clinical signs point to the offending sinus, then we proceed regardless of the X-ray shadows. If these are dense, we have learned nothing new; if they appear clear, we are still not assured that the sinus is unaffected.

On the one hand shadows of the most pronounced character may be meaningless whilst on the other a clear, perfect, and apparently excellent X-ray appearance may exist in the presence of great oedema of the mucosa, pus under pressure along with rapidly spreading osteomyelitis of the fronta bone, as in the patient whose case was reported on a former occasion!

The radiologist report should consist of an accurate description of what he sees. Just as soon as he begins to make deductions from the appearances he so accurately describes and expresses such in terms of a clinical diagnosis he is courting disaster. He should make it crystal clear that the X-ray is a laboratory aid of very limited value in the field of oto-rhinologic pathology of infective origin.

In view of the multiplicity of pitfalls in the examination of the temporal bone and accessory nasal sinuses the roentgenologist, if in a moment of exaltation he be tempted, should guard his report from gross error by such immunizing phrases as "the shadow is vaguely suggestive of", "there is the remote possibility of it being" or "keeping in mind the unreliability of this type of examination the appearance points in a wobbly manner to" when making an observation on a shadow supposedly related to infection. Of course the radiologist is right on occasion. Except when a fluid level can be demonstrated no man can be sure of the occasion. As Hamlet would say "there's the rub."

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# Case Reports

## Two Unusual Abdominal Emergencies in Children

March 12, 1948

Dr. H. G. Grant  
Dalhousie Public Health Centre  
Halifax, N. S.

Dear Dr. Grant:

I am sending you two case records which might be suitable for publication in the Bulletin. Both of these were rather unusual in children and I thought they might be of interest.

With regards,

Yours sincerely

J. J. Carroll, M.D.

T.E.B., age 5 years

This child was admitted to hospital February 26, 1948, complaining of right sided abdominal pains and vomiting. His family history was essentially negative, his father, mother and one sister aged seven years are living and well. Has previously always been well and has never had any serious illness and gave no history of recurrent abdominal pain and vomiting. About twelve hours before admission, he developed a severe colicky pain in the epigastrium which later was referred to lower right quadrant. With the onset of this severe colicky pain he vomited several times but has not vomited since that time. His bowels had moved just previously to the onset of the pain but have not moved since. He had no dysuria.

On examination eyes, ears, nose and throat were essentially negative. The child was very well developed for his age and a very healthy specimen. Chest examination showed a normal chest. Heart examination showed a normal heart. Central nervous system was essentially negative, there being no Kernig, no neck rigidity or spasticity. Ambulatory system was essentially negative, there being no joint pain or stiffness. G. U. system was normal and the urinalysis was normal. The white blood count was 13,900, with 90% polys. Abdominal exam showed tenderness over entire right rectus, on the left there was no tenderness. Rigidity was very marked over lower right quadrant and there was no rigidity on the left. There was marked rebound tenderness over McBurney's point. Due to spasm of rectus no mass was elicited in lower right quadrant. The case was considered acute appendicitis and laparotomy advised which was done.

Under anesthesia it was noted that the right lower quadrant was rather full. On opening the abdomen a mass the size of a golf ball was noted in the caecum. On delivering the caecum, it was noted that the ileum had invaginated the caecum for a distance of about twelve inches and that there was a mass at the apex of the intussusception. The appendix and the head of the caecum were also invaginated into the caecum and ascending colon. The intussusception was very easily reduced and there was no bowel damage noted. The appendix was moderately inflamed and was removed. The previously

noted mass was a tumour of the ileum which pointed into the mesentery. This was dissected out and it was noted that it arose from the sub mucous coat of the ileum. The ileum was closed and the abdomen closed without drainage. The child made an uneventful recovery.

The tissue reports showed a thinned walled cyst-like structure measuring 3 cm. in diameter and weighing 9 grms. On cutting into the tissue a clear fluid was exuded. A section of the cyst wall disclosed it to be lined with a single flattened layer of cuboidal epithelium and surrounded by a fibrous capsule. Sections of the appendix disclosed the presence of acute and chronic inflammatory cells sparsely distributed in nests throughout the organ. Diagnosis was Enterogenous cyst with intussusception and sub-acute appendicitis.

This case is presented as an intussusception of rather unusual cause.

#### **Case History**—L.B. age 7 years.

This child was admitted July 13, 1947, suffering from acute pain in abdomen and vomiting. The family history was essentially negative. Her previous history was also essentially negative. Tonsils and adenoids were removed two years ago and there had been no other serious illness. This child was seen by me several days before her admission, suffering from a vague abdominal pain and was very nervous. She had not vomited, showed no gross abdominal tenderness or rigidity and blood count was taken which was within normal limits, except moderate increase in eosinophiles, and she was considered to have worm infestation.

Three days later this child came in again and looked acutely ill. She had vomited all the previous night and had severe abdominal colic pain, her bowels had moved and there was no diarrhoea. Blood count taken this time showed a count of 21,500 with 89% polys and no eosinophiles. Her urinalysis was negative except for acetone.

Examination of the child showed eyes, ears, nose and throat were essentially negative. Chest was normal, kidneys were normal except as previously noted. Central nervous system was normal and the ambulatory system was normal. Abdominal examination showed a general rigidity, there being more rigidity on the right. There was marked tenderness over the entire lower abdomen. Rebound pain was very marked over entire lower abdomen. At this time I believed that she had acute gangrenous appendicitis and laparotomy advised, which was done.

On opening the abdomen the appendix was found moderately infected and was removed. The ileum was explored but no diverticulum was noted. On examining the pelvis a massive hemorrhagic cyst of left ovary and tube with necrosis from torsion was found. These were removed. The child made an uneventful recovery.

The laboratory reports were interesting. The appendix was found to contain adult forms of oxyuris vermicularis and there was odema of the vessels and an inflammatory cellular infiltration in the superficial layers of the appendix.

The other mass removed consisted of a tube, ovary and a large rounded cystic mass which measured 7 cm. in diameter, and was situated immediately inferior to the tube. The external surface of the cyst-like mass was smooth; the wall varied in thickness. On section it was noted to contain a central cavity with clear fluid and a large amount of clotted blood in the walls. The

ovary measured 2.5 x 1.5 x 1.5 cm. On section it was noted to contain mainly hemorrhagic material. The tube measured 6 x 1 cm. It was dull red in colour and the walls showed extensive hemorrhage. On microscopic examination there was destruction and degeneration of the architecture of the tube, ovary and cyst because of enormous congestion of the vessels. The diagnosis was parovarian cyst with torsion of pedicle, peri-appendicitis and oxyuris infestation.

These two cases are reported as rather unusual acute abdominal emergencies in children.



# Personal Interest Notes

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## Veteran Doctors Given Honorary Life Memberships

DOCTOR H. A. Payzant and Doctor G. G. Gandier of Dartmouth were honoured for their fifty years in practice by the Halifax Branch of The Medical Society of Nova Scōtia at the annual meeting held in Halifax on April 28th. They were each presented with an illuminated scroll and an honorary life membership in the society.

Doctor Payzant, a graduate of the old Dalhousie Medical School in 1897, started practice in Liscombe, Guysborough County, went to England for post-graduate study and has practised in Dartmouth since then. A past president of the Society he has been for over thirty years a Public Health Officer.

Doctor Gandier graduated from the Halifax Medical School in 1898, also went to England for post-graduate study, and then practised in Pictou for three years. For the last forty-four years he has been practising in Dartmouth.

Dr. G. H. Murphy of Halifax received the honorary degree of Doctor of Laws at the commencement exercises of St. Francis Xavier University on May 26th.

Doctor V. D. Schaffner of Kentville was among outstanding medical men who addressed a two-day meeting of district medical officers of the C.P.R. in Montreal early in April. Discussion covered medical factors involved in the running of railways, steamships, air lines and hotels.

Doctor A. R. Morton of Halifax and Doctor M. R. Macdonald of Sydney attended the annual meeting of the Canadian Public Health Association in Vancouver which opened on May 20th.

Acting Surgeon Commander F. G. W. MacHattie of Toronto, former principal medical officer at the Royal Canadian Navy Hospital in Halifax has been appointed Assistant Medical Director General at Naval Services Headquarters in Ottawa.

Doctor G. H. Murphy, Jr. and family who have been residing in Rochester, Minn., for the past three years are at present visiting in Halifax. Doctor Murphy has completed a three years Fellowship course at the Mayo Foundation in pathology and bacteriology and received the degree of Master of Science (Pathology) from the University of Minnesota (Mayo Foundation); also the Diplomat in pathology, granted only on examination before the American Board of Pathology. Doctor Murphy has accepted the position as Pathologist and Director of Laboratories in the Winchester Memorial Hospital, Winchester, Virginia, and with his family will return to the States to take up his service in June.

Doctor Gordon R. Hennigar, Dalhousie 1945, has been awarded a research fellowship in medicine at the University of Illinois Graduate School. Doctor

Hennigar, a member of the Faculty of the University of Maryland, is at present a pathologist at South Baltimore General Hospital.

Doctor Arthur G. Shane, Dalhousie 1942, has accepted a post with the Birmingham Eye Hospital in Birmingham, England. Doctor Shane has just completed two years as house surgeon at the Birmingham Ear, Nose and Throat Hospital.

The powerful British Medical Association abandoned its stand against the Government's socialized medicine plan on May fifth and announced it would advise the medical profession to co-operate.

Association officials said co-operation would be conditioned on the understanding that Health Minister Bevan will continue talks on terms and condition of service. The plan is scheduled to start July fifth. It will provide free medical attention and hospitalization for all Britons.

Doctor J. L. Akin, Dalhousie 1945, recently returned from Montreal and has started practising in Windsor.

The eye, ear, nose and throat specialists of the province met recently to organize a provincial society to be known as the Nova Scotia Society of Ophthalmology and Otolaryngology.

The newly elected slate includes, Doctor J. P. McGrath of Kentville, President; Doctor B. E. Goodwin of Amherst, vice-president; Doctor E. I. Glenister of Halifax, secretary-treasurer; and Doctor H. J. Davidson of North Sydney, Doctor C. K. Fuller of Yarmouth, Doctor H. R. McKean of Truro and Doctor D. M. MacRae of Halifax comprise the executive.

The first annual meeting of the new Society will be held in conjunction with the annual meeting of The Medical Society of Nova Scotia in September.

The Bulletin extends congratulations to Doctor and Mrs. D. K. Murray (née Ruth Skaling) of Liverpool on the birth of twin daughters, Victoria Ervin and Catherine Bruce, on April 9th; to Doctor and Mrs. William Inglis Morse, 2nd, (née Helen Jean MacDonald of Glace Bay) at present in Baltimore, on the birth of a son, Ewart Alexander on April 23rd; to Doctor and Mrs. D. S. Clark (née Margaret Strachan) of Moser River on the birth of a daughter on April 29th

## Society Meetings

### Halifax Medical Society

The annual meeting of the Halifax Medical Society was held on April 28th, when the following officers were elected:

President—Doctor H. D. O'Brien.

Vice-President—Doctor V. O. Mader.

Secretary-Treasurer—Doctor J. F. L. Woodbury.

Executive—Doctors D. J. Mackenzie, C. L. Gosse, H. C. S. Elliot, J. A. Noble and L. A. Rosere of Dartmouth.

# Obituary

Jordan W. Smith, M.D.

THE Medical Society of Nova Scotia lost one of its oldest and best loved personalities on May 6th, when Dr. J. W. Smith passed away at his home in Liverpool, N. S. Only a month before his death, perhaps with a touch of prescience, he had yielded to the urging of his friends and written a few notes entitled "Fifty Years of General Practice" for the BULLETIN. Had he found the time he could have written an absorbing book under that title.

Born at Selma, N. S., three years before Confederation, he grew up in a Nova Scotia sadly stricken by the series of misfortunes which followed that event, notably the decline and death of the great shipping industry; and in his person he was an example of these self-reliant Bluenose spirits who refused to be dismayed. Himself a graduate of the small country schools of the period, he taught school in Nova Scotia for some years and then with his small savings and some borrowed funds he went on to study medicine at Baltimore. Later, while serving as resident physician in a Baltimore hospital he was able to take a post-graduate course at Johns Hopkins under the great Osler.

Those who have read his brief reminiscences in the BULLETIN will recall how he returned to Nova Scotia at the age of 31, practised for a time in a small fishing village and then went into general practice in the town of Liverpool. At that time Liverpool was suffering sharply from the decline of its once-great lumber and shipbuilding industries and to cap its misfortunes it had just been swept by a devastating fire. The town and its surrounding district were inhabited chiefly by mill hands, ship carpenters, sailors, fishermen, river-drivers and lumbermen, many of them in small communities miles apart, accessible only by boat or by rough cart tracks.

For more than half a century Dr. Smith conducted his practice in this region, travelling about the countryside and through the woods in a buggy of his own design (and later of course by automobile), making frequent trips by boat to lonely islands and isolated fishing settlements along the coast, never refusing a call that it was in his power to answer. With no handy hospital facilities, with none of the modern aids for a good many of his years, he tackled the many and various problems of the country doctor in such a district with a courageous spirit and true Bluenose resourcefulness. To mention a single fact about his half-century of work he brought more than 3,000 babies into the Queens County air—a total almost equal to the present population of the town of Liverpool. Apart from his medical abilities he became increasingly valued in the community for his sound common sense, which with an intimate knowledge of the people and their problems made him the consultant of school boards, town and municipal officials, priests, ministers and others.

His house and office at the corner of Main and Market Streets in Liverpool became a kind of landmark, of which his stocky figure and vigorous mind were just as much a part as the old cannon at the corner of his lawn. Here all manner of folk came with their problems, medical or not. A man of supreme honesty and energy, he could be very blunt with the shifty and the shirkers, but no one with a proper claim upon his forthright nature ever went away unsatisfied. For fourteen years he served Queens County as a

member of the provincial legislature, and later he served on the board of the Nova Scotia Power Commission, with which the present prosperity of the county is so closely associated. These matters he accepted as part of his duty to the community, and the time spent upon them he made up with a renewed effort in his widespread medical practice.

Fortunately he was blessed with a strong constitution, and although somewhat impeded by a broken leg during his latter years he retained the full vigour of his mind to the very last. He will be missed not only by his devoted family but by all who came in contact with him in the course of the years. No one could be five minutes in his presence without feeling the uplift of a personality steady, strong, quiet, happy, the old-fashioned family doctor in the finest sense of the term, the Nova Scotian at his best.

Thomas H. Raddall

### Dr. Carl F. Messenger

The medical profession of Western Nova Scotia suffered a distinct loss in the sudden death of Dr. Carl F. Messenger of Middleton, who died of acute leukemia at the Halifax Infirmary on Wednesday, April 21st, where he was admitted on April 19th, having worked up until that time, operating for an acute appendix the evening before.

Dr. Messenger was born at Petite Riviere on November 12th, 1905, where his father, the late Dr. Freeman Messenger, was then practising. The family moved to Middleton in 1911, where he attended MacDonald School, later going to Acadia University, where he graduated in Arts, and then to Dalhousie University, where he graduated in Medicine in 1932. Following his graduation he first practised at Granville Ferry, and then took post-graduate work in Surgery at Kings County Hospital in Brooklyn, N. Y. He returned to Middleton where he became associated with his father in his large general practice.

Dr. Messenger was keenly interested in politics and civic affairs, being mayor of Middleton for five years, and at the time of his untimely death, was Chairman of the School Board. He was a charter member and president of the Middleton Lion's Club and a member of the Board of Management of Soldiers Memorial Hospital, and was greatly interested in the improvement and extension of that institution.

He was twice married. His first wife, Mary Bishop of Aylesford, died in 1942. His second wife, formerly Elizabeth Pineo, and three children, Jane, Carolyn and Susan, as well as his mother in Middleton and one brother, Charles of Boston, survive him.

A largely-attended funeral was held on April 23rd from the Baptist Church, Middleton, with interment at Pine Grove Cemetery with the Masonic service at the grave.

The BULLETIN extends sympathy to Doctor S. W. Williamson of Yarmouth, N. S., on the death of his mother, Mrs. Margaret Williamson, which occurred at Providence, R. I., on May 7th. Mrs. Williamson was in her hundredth year.

### DOCTOR WANTED

Doctor urgently needed in village of Wallace to serve village and large surrounding district. Modern home available. For full particulars apply to J. M. Charman, Jr.

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### DOCTOR WANTED

A doctor to assist in general practice. Good general surgical experience for right man. Desirable that applicant be prepared to remain at least one year. Apply to Doctor L. R. Meech, North Sydney, N. S.

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### OFFICES TO RENT

A suite of offices, nicely located in central downtown Halifax, is now available for lease by a doctor. Special consideration for first year's rental. Phone 3-6239 for information.

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### WANTED AN ASSISTANT

An assistant is wanted for a gold mining district in Northern Ontario, salary \$325 a month, plus 7c mileage. Further information may be secured by writing to the Secretary.

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### Artists, Beware!

If you plan to exhibit at the Chicago Exhibition (American Medical Association, June 21-25, 1948)—NOW is the time to write for entry blanks, rules, shipping labels, etc.

Haste is necessary because your entries must reach Chicago between May 1 and June 12.

For details, please write airmail to Francis H. Redewill, M.D., Secretary, American Physicians Art Association, Flood Building, San Francisco, California.