A Clinical Lecture
ON
CHRONIC INTESTINAL STASIS:
OR,
OUR MECHANICAL RELATIONSHIP TO
OUR SURROUNDINGS.*

BY
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Most of us are unaware of the extraordinary and remarkable evolutionary changes in the structure of the body which develop very rapidly during a portion of the lifetime of the individual. Some changes may be in progress many years before they become recognizable, while others may appear in a few years or even in a few months or weeks.

While in the dissecting room I studied the changes which the mechanics of the labourer undergo in consequence of the heavy and continuous work he performs, and I soon found that it was usually quite easy from the examination of the body to tell the occupation the labourer had followed during life. I formulated three simple laws:

1. Pressure produces changes in the structure and form of the bones and in the form and function of existing joints, while it determines the formation of new joints.
2. Strain produces change in the form of the bones and in the form of existing joints, and also produces new joints.
3. When, apart from the exercise of pressure or strain, it is important, from the altered mechanical relationship of the individual to his surroundings, that a mechanism should be modified or an entirely new one developed, such a change takes place.

The changes take many years to develop, and they increase in proportion with the length of time in which the individual has been engaged in his laborious occupation.

Another law is that the skeleton represents the crystallization of lines of force. Any alteration in the mechanics of the skeleton by injury is followed by a recrystallization, which takes place with extraordinary rapidity in infancy. A fracture with displacement of the fragments of a long bone at birth is followed in a very few days by abundant deposit of new bone along the lines of force, and extending from the extremities of the shaft. This capacity to restore the skeleton diminishes with age, but exists in a high degree in youth.

While the alterations in the structure and form of the bones and joints are readily intelligible, it is less easy to demonstrate those that take place in the soft parts. Perhaps the most difficult to illustrate, though they are in some way the most obvious, are the changes that take place in the brain in consequence of its mechanical relationship to its surroundings, and those comprised in what is called education. These changes, unlike those observable in the mechanics of the labourer, take place very early in life, when, as in the case of a fractured bone, changes are most rapid. The combinations which the brain cells form with one another become definite and fixed, and this is so marked that it takes a very long time subsequently to alter these arrangements, even if it is possible to do so at all. Such a combination of the cells of the brain may altogether unfit that organ for forming what might be called a common-sense view on any subject. By common sense I mean the capacity to arrive at a conclusion which would appear true to a number of people engaged in a variety of occupations.

The best example that suggests itself is the association of cells which results from the instillation of religious dogmas into the mind of the child at an early period of its existence. The Jesuit, a most highly educated and intelligent teacher, realizes this thoroughly. He knows, if

he can control the education of the child during its early years, that later in life it is difficult or often impossible for the individual to destroy that crystallization of the cells and of their communications and to replace it by others. I merely give this illustration to show that the intimate structure of the brain depends on its surroundings as much as, or perhaps infinitely more than, do the skeleton and joints. The importance of this influence all through life is tremendous, and should be studied by educationists and lawyers, neither of whom seem to have any reasonable grasp of the subject.

I will now consider the mechanics of the gastro-intestinal canal. We must regard the mechanical relationship of this tract to its surroundings in the same manner that we have regarded those mechanical relationships which influence us from without, and look upon it as being for all practical purposes outside the body and not contained in it, and therefore subject to precisely the same laws.

It is because most medical men are unaware of the laws I have enunciated that they cannot grasp the simple sequence of changes in the gastro-intestinal tract in chronic intestinal stasis. This is due to the fact that the method of medical education during the more receptive period of student life has established such a fixed combination of their brain cells as renders it difficult or impossible for them to understand any new principle. Dr. Jordan, in the introduction to his work, *A Radiological Study of Chronic Intestinal Stasis*, points out that

"Textbooks are, of necessity, arranged under headings classified according to organs or regions. This system, necessary for purposes of instruction, has a fundamental fault. It fosters the fallacy that disease involves individual organs, whereas, in truth, though only one organ cries out for help, the whole system is out of gear. This fallacy has imbued the medical profession for so many generations—indeed, centuries—that it is most difficult to eradicate."

The system in which are comprised our food supply and our drainage scheme appears excellently arranged for the purpose. For its perfect mechanical functioning it is necessary that the food shall contain a sufficient quantity of indigestible materials to afford work for the muscle fibre of the intestine throughout its length, and also that the contents of the tract shall pass along at a reasonable rate, and that they shall not accumulate in any particular section and so exert an abnormal strain on the mechanism by which the several parts of the canal are retained in position.

It is obvious that, as in the case of the skeleton and joints of the body, if any abnormal strain is exerted on such soft parts as the membranes supporting the several portions of the drainage scheme corresponding definite changes must result, and because of the softness of these tissues the changes must take place with much greater rapidity than in the case of the skeleton. I cannot lay too much stress on this, since it is of the most vital importance to the health and well-being of the individual.

Quite a brief period of stagnation of the intestinal contents may result in very extensive permanent modification in the mechanics of the structures retaining the overloaded intestine in position and consequently in the functioning of the bowel itself.

It is most important to remember that the younger the subject when exposed to this abnormal influence the greater is the change. This is on all fours with the recrystallization of the skeleton in fractures with displacement of fragments in infancy.

I am convinced that the bands which I shall consider may be formed very early in life, and that they are due largely to the constipation that accompanies artificial foods of any kind whatever which are used when the mother is unable to nurse the child.

I believe that the freedom in savage life from the gastro-intestinal disorder culminating in cancer which occurs only in civilization is very largely dependent on the fact that the infants, during the most important portion of their lives, in which they are, as I have shown, very susceptible to alteration in their mechanisms, are suckled by their mothers for a long period. In other words, the seeds of cancer are sown in infancy.

That which is universally accepted as true in medicine is almost always wrong.

* Delivered at the London (Royal Free Hospital) School of Medicine for Women.

In civilized communities it is generally assumed that one action of the bowel every day is quite sufficient for health, and when the infant ceases to wear napkins it is taught to be constipated for twenty-four hours. This habit of a daily action has apparently arisen from the steady and progressive elimination of all indigestible and bulky material from the food, in consequence of which the normal stimulus to more frequent actions is in abeyance.

Delay in the evacuation of the intestines leads to the accumulation of heavy solid faecal matter in the pelvic colon. This throws an excessive strain upon the outer layer of the mesentery of the colon about the junction of its iliac and pelvic segments which binds it to the iliac fossa. This determines the formation of thin bands or tags of peritoneum, which extend from the iliac fossa progressively to the mesentery and finally to the colon as far as its anterior band of longitudinal muscle fibre. These acquired bands, which are a crystallization of lines of force identical in character and function with the callus of a broken bone, gradually contract till they shorten and obliterate the structure and function of the mesentery, anchor the bowel, and finally rotate it on its longitudinal axis, and deform it to an extent corresponding to the degree of axial rotation. In these several stages of fixation the lumen of the bowel becomes progressively obstructed at this point, and its mucous, muscular, and peritoneal coats become in consequence chronically inflamed and are tender on pressure.

I call this anchoring of the iliac colon the first and last kink—the first because it is the earliest to develop, and the last because it is the lowest in the drainage scheme. I cannot exaggerate its importance, as I believe its capacity for harm is tremendous and far-reaching, and that it is responsible for all the changes which are due directly and indirectly to chronic intestinal stasis. It spells the failure of civilization and is a veritable Pandora's box. It causes a damming back of the contents of the large bowel with a further crystallization in the layer of the mesentery which chiefly supports the overloaded large bowel proximal to it. This is most marked at certain points—namely, at the level of the iliac crest, at the splenic flexure, and at a point below the gall bladder, where a band develops and, extending from the liver and gall bladder, descends and secures the transverse colon just beyond the hepatic flexure. An especially strong layer suspends the caecum, with the object of opposing its descent into the true pelvis. The caecum is also supported internally on its inner side by the end of the ileum and its mesentery which form its internal ligament, and on the under surface of this portion of the mesentery similar crystallization takes place as elsewhere in the colon and a decided kink and obstruction result. This, like all other acquired bands, and indeed all other structures which develop to help to meet man's mechanical relationship to surroundings, at first serves a useful purpose, but later tends to shorten life. The damming back of material in the colon results in an infection of its mucous membrane which progresses backwards along it from the situation of the last kink. It is commonly spoken of as "colitis," which simply means infection of the mucous membrane of the colon by the organisms which thrive in its stagnant contents. It is demonstrated radiographically by an extreme reduction of the lumen of the inflamed bowel.

The appendix, whether free, or anchored by acquired adhesions produced to support the caecum, may in consequence of this infection become acutely or chronically inflamed. When anchored to help to support the caecum and passing up to its attachment to the back of the mesentery, it runs behind the ileum and not infrequently controls and obstructs its effluent and accentuates the stagnation of its contents. To this condition I gave the name of "controlling appendix."

The accumulation of material in the small intestine, whether resulting from the overloading of the caecum or aggravated by an ileal kink or controlling appendix, produces a drag upon the duodeno-jejunal junction and a corresponding angulation and obstruction of the bowel at this point.

The stomach continues to force its contents into the duodenum; the contents of the obstructed duodenum cannot regurgitate into the stomach because of the sphincter

action of the pylorus, and are unable to get through the duodeno-jejunal junction, so that they overdistend the duodenum, and especially its first part, which is surrounded by peritoneum. The struggles of the duodenum to force on its contents produce the pain which has been called "hunger pain," for the reason that the entry of food into the stomach is followed by the closure of the pyloric orifice and the cessation of further distension of the duodenum by gastric contents and the consequent relief from pain.

The frequent distension of the duodenum results in the engorgement of its mucous membrane, especially of its first portion, and later in its abrasion and ulceration. The forcible impact of the gastric contents upon the spastic and obstructed pylorus tends to produce infective changes in the mucous membrane about that orifice and these are very liable to become cancerous. When the stomach dilates because of its inability to evacuate its accumulating contents through the obstructing pylorus, the strain exerted along the lesser curvature by their weight results in infective changes in the mucous membrane in this position. These tend to become cancerous later.

The oesophageal sphincter becomes spastically contracted in consequence of the imperfect action of the stomach and the obstacle afforded to the passage of food from the stomach; infective changes ensue in its mucous lining which tend to become malignant. The frequent passage of large masses of hard food through the portion of the oesophagus compressed by the bronchus occasionally determines similar changes in the mucous lining of this portion of the gullet.

So much for the most important mechanical changes which result from stagnation of the contents of the gastro-intestinal tract.

I would point out that the chief causal factor in the development of inflammatory foci varying in degree from engorgement to ulceration and cancer is traumatism. The change in the mucous membrane takes place invariably in just such situations as common sense assisted by a slight knowledge of mechanics would lead one to expect it to occur. These changes never arise by chance. The other factor in their causation is the presence in the contents of the gastro-intestinal canal of various infective organisms, which invade the mucous membrane, whose vitality and resisting power has been lowered by traumatism.

Curiously enough, the elongation and prolapse of the intestines which occurs in persons of low vitality, in whom there is only an imperfect attempt to control these effects by securing the intestine by acquired bands, has chiefly attracted the attention of surgeons, who do not realize that these conditions are sequelae and not the primary cause, which is situated in the kink in the left iliac fossa. To meet this dilatation, elongation, and prolapse of the viscera surgeons have performed many operations with the object of shortening the elongated bowel or fixing it in position. It is hardly necessary to indicate the futility of such procedures, except occasionally in the case of the pelvic colon. Ulceration of the mucous membrane rarely occurs in this asthenic type of stasis, but, on the other hand, organisms flourish with far greater readiness in the accumulated stagnant contents of the elongated, dilated, and wasted bowel, with dire consequences from septic absorption.

Besides these mechanical results of stasis, the sequence of which is obvious, we have those which are consequent on the fouling by organisms of the dammed-up contents of the small intestine, duodenum and stomach, with the extension of the infection along the hepatic and pancreatic ducts producing changes in the liver and pancreas, gall stones, and cancer. The mode of extension of the infection in these conditions is as apparent as the mechanical changes.

The next series of changes we have to consider come about by the absorption from the infected contents of the gastro-intestinal tract of more toxins, etc., than the liver is able to deal with. These noxious substances getting into the circulation are carried to every organ and tissue in the body, and produce disastrous results in proportion to the degree of the toxicity of the blood, which supplies them with nutrition and also carries away their effete products. In various people different tissues and organs appear to

react particularly to toxins, and these peculiarities may be hereditary.

The degenerative changes in the thyroid, adrenal, and other ductless glands, the heart and blood vessels, the nervous system, the eyes, ears, kidneys, liver, pancreas, uterus, ovaries, testes, prostate, breast, fat, skin, hair, lymphatic tissue of the naso-pharynx, and the gums and teeth—these two last being the most frequent and conspicuous of all—I have frequently described in detail, and I have shown how liable are certain of these degenerated organs—as the breast, uterus, ovary, and pancreas—to be infected with cancer. Among the nervous symptoms may be mentioned intense headache, neuritis, neuralgia, sleeplessness, misery, complete mental and physical prostration, melancholia, epilepsy, disseminated sclerosis, delusions, paralysis agitans, dementia praecox, etc.

Besides these changes which are the direct result of the supply of toxic blood to the tissues, we have a number of infections by organisms which occur because of the inability of the degenerated tissues to withstand their inroad. These infections are not able to obtain a foothold in a normal healthy subject.

Perhaps the most conspicuous at the present moment is cancer. *Cancer never affects a healthy organ.* In every case in which I have had an opportunity of verifying it I have found that the cancer patient was suffering from chronic intestinal stasis, and that the infection by cancer was an indirect consequence of this condition. Cancers of the skin and tongue which are produced by chronic traumatism alone are not included in this category.

If this assumption is correct, it is obvious that to prevent the development of cancer it is necessary to obviate the static changes in the gastro-intestinal tract which result from the diet and habits of civilization. That an enormous amount of benefit and a corresponding freedom from cancer has been obtained by the use of paraffin is in my opinion undoubted. I started to employ paraffin when I recognized the mechanics of chronic intestinal stasis, and have used it in every case since, as it would have been impossible and unnecessary to operate on all patients suffering from this disability. Its usefulness is also confirmed by the extraordinary manner in which it has spread over the whole world. I doubt whether any other material or drug has ever given anything like the same comfort and security from disease that it has. By its use the irritation and harm which result from the action of a purgative are avoided; it acts on the principle of the flushing tank, rendering the motion soft and ensuring two or three free actions a day.

The other diseases that affect the subjects of chronic intestinal stasis are rheumatoid arthritis, Still's disease, tubercle, Raynaud's disease, many splenic affections, ulcerative colitis, many skin diseases, diabetes, ulcerative endocarditis, gout, etc.

Our chief interest at the present time, therefore, should be to prevent the development of chronic intestinal stasis, and so to obviate the incidence of the several conditions which are due directly or indirectly to its presence, of which latter group cancer interests the public particularly because of its frightful mortality and the physical and mental anguish so frequently associated with it.

How is this to be done? It can only be effected by a complete revolution in our diet and in our habits of life. We must assimilate them to those of the aborigines, among whom the entire stasis sequence is unknown, and the more thoroughly we approach the conditions of primitive life the more successful shall we be in avoiding the occurrence of a very great number of diseases.

Roughly, it would seem that the diet should consist as much as possible of vegetable matter; that it should be consumed largely in a raw state to avoid damage to vitamins; that coarse indigestible material be retained in order to increase the bulk of the intestinal contents, and the stimulating action on the reflexes; that food which if kept becomes offensive and poisonous should be eliminated as much as possible; and that the consistence of the faeces be diminished and the frequency of evacuation increased. Last, but not least, every possible endeavour should be made by mothers to suckle their infants for a sufficient length of time.

So much for the prevention of stasis. As to the treatment of the existing condition apart from medical measures such as a Curtis belt, paraffin of high viscosity, kaolin,* and abdominal exercises, all operative measures on any portion of the gastro-intestinal tract should be started by an examination of the last kink, and by the careful freeing of the bowel from its acquired attachment to the iliac fossa. This must be done thoroughly and with the greatest care, and when the mesentery has been restored to its normal length and the bowel to its normal mobility any raw surfaces of mesentery must be accurately covered by peritoneum to obviate the formation of inflammatory adhesions.

Perhaps of all operations in surgery this procedure is followed by the most wonderful effect. The whole condition of the patient is transformed and he is rapidly restored to vigorous health. After all this is not surprising, since it is because of this obstruction that all the other changes in the gastro-intestinal tract, whether mechanical or toxic, ensue. I have on very many occasions derived the same advantages by this simple operation that I have previously had from colectomy at a considerably greater risk. Because of the remarkable results which can be obtained by this procedure I am anxious that its value should become recognized.

Having dealt with the last kink, the colon should be examined in its entire length to make sure that no secondary constriction has developed, and particularly in the region of the splenic flexure. Any acquired band found controlling the lumen of the bowel should be carefully divided, and any raw surfaces deprived of peritoneum must be covered in accurately. An inflamed or controlling appendix or an ileal kink should be looked for and dealt with if present.

A CASE OF RETROPHARYNGEAL LIPOMA.

(With Special Plate.)

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THE following case deserves to be recorded, if only on account of its rarity.

A gentleman, aged 41, was sent to me on May 13th, 1923, by Dr. Nesbitt. He complained of "phlegm in the throat" for a very long time, getting worse for the past year.

Inquiries addressed to the patient and some of his intimate friends made it clear that for at least twenty years he had not swallowed freely; food had to be taken in small quantities, very slowly and with frequent sipping. He found meat the most difficult and rarely attempted to eat it oftener than once a day. Pungent food always provoked a cough, and such things as sherry caused acute distress. The voice had the characteristic twang one associates with retropharyngeal abscess or tumour. For months past his breathing had not been free. At night it became so stertorous that people within earshot were kept awake, and it was on more than one occasion the subject of complaint in hotels.

On examination, the back wall of the pharynx was seen to be sharply bulged forward at the level of the base of the tongue, so as to come in contact with the epiglottis and prevent inspection of the larynx. The tumour could be reached by the forefinger and was quite soft, but gave no impression of fluctuation. His temperature and pulse were normal and there was no pain.

A radiogram taken by Dr. Hardman is reproduced in the accompanying plate (Fig. 1). It showed that a tumour lay in front of the vertebral column, behind the pharynx and upper portion of the gullet, separating these structures by a distance of at least an inch. The vertical line along the

* Kaolin, which is recommended to prevent decomposition in the intestines, may be dispensed by rubbing up with water and then gradually adding mucilage of tragacanth. It can be flavoured to taste. Details were given by Dr. Pirie in the JOURNAL of November 24th, 1923 (p. 1013). He recommends about 3 oz. of kaolin to 9 oz. of water, with 1 oz. of mucilage, and that a port wineglass be taken six times a day.