

CLINICAL LECTURES ON DISEASES OF THE LOWE BOWEL.

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LECTURE VI.

ALL mucous canals are liable to narrowing or stricture, as is every day illustrated in the urethra, œsophagus, and pyloric orifice of the stomach. Of all the intestines the rectum is most subject to this disease. I think the term "stricture" should properly be confined to narrowing of the tube caused by interstitial deposit or other structural change in the wall, and not extended to diminution or closure of the canal by the pressure of tumours or growths from without. Such changes may be classified into "simple," "specific," and "malignant." I do not think spasmodic stricture of the rectum has any real existence in surgery. The simple causes may be traumatic, such as the introduction of instruments, foreign bodies, too extensive application of caustic, actual or potential. In the female a special cause may operate—the compression of the bowel between the sacrum and the foetal head in tedious labours. This may explain the greater frequency of the disease in females than in males—a point insisted on by many authors. Under this head we may also include the results of ordinary ulceration, causing loss of substance and consequent contraction of cicatricial tissue. Repeated attacks of dysentery may lead to plastic exudations in the submucous tissue. This latter is not so common a factor in producing the disease, or we should meet with it more frequently than we do, having regard to the number of persons who suffer from this complaint in hot climates.

We should also, in this connexion, notice congenital, or, as they are termed, valvular strictures, from the appearance which they often assume. I have myself seen few examples which could be referred to this type, but, reflecting on the mode of development of the parts, I can easily understand its occurrence as an approach to true atresia or imperforate anus. Each termination of the digestive canal—the mouth and the anus—is developed as a distinct and separate piece by invagination of the epiblast. They are respectively termed stomodeum, which forms the mouth and pharynx, and proctodeum, which forms the anus. Various degrees of failure in the union of the proctodeum and the lower end of the rectum explain the different forms which atresia may present. A still slighter error of organisation at the point of adaptation explains congenital stricture, which consists of a fold of mucous membrane, crescentic in form, stretched across the canal of the rectum, or a mem-

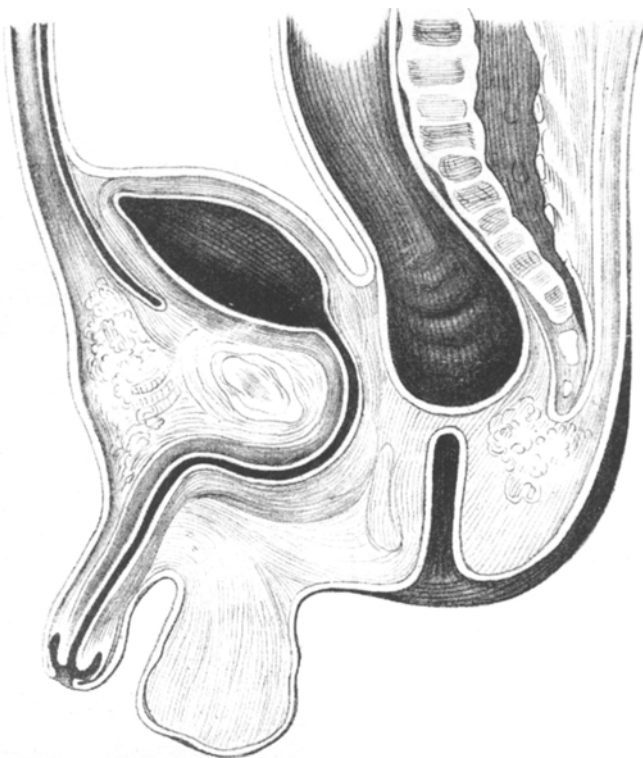
branous diaphragm, with an opening for the passage of fæces. Prior to and for some time after its union with the anal development the lower end of the rectum is a closed tube. By subsequent absorption of its extremity the canal of the rectum and the anal opening are continuous. Vestiges of this terminal wall constitute the essence of valvular stricture (see Plate). This frequently escapes detection during the earlier period of life, but in young adults may be indicated by habitual constipation, which is most obstinate; and yet it is a matter of wonder how little constitutional disturbance is caused by this error of function, nature becoming tolerant of the condition of the bowel. An examination with the finger will detect either a membrane or a sharp crescentic valve-like fold. This may be simply divided with a probe-pointed bistoury, and the dilatation maintained by the passage of a bougie.

Obstinate constipation is not a very common condition in the early period of life, and its presence should arouse our suspicion of congenital stricture.

As in the urethra so in the rectum strictures may present varieties as to shape and extent. They may be linear or pack-thread, valvular or membranous, continuous or tubular; they may be single or multiple. In the great majority of cases we find one stricture only, and it is within four inches from the anal verge.

All the symptoms of true stricture may be produced by the effects of pressure by various abnormal growths outside the bowel, obstructing its canal. The presence of these can be determined by carefully conducted physical examinations.

The second class of causes—syphilitic—are much insisted on by foreign writers, who seem to regard them as more frequent than all the others. I think, however, from my own observation, this position should be assigned to cancer. That chancre, or the soft sore of primary syphilis, may, more especially in the phagedænic form, extend from the verge of the anus into the rectum cannot be denied, but the existence of hard chancre or true syphilis any distance in the bowel must be exceptional and due to unnatural causes. I have heard of its having been frequent long ago in our penal settlements, but I have never seen a case of it myself, so that for all practical purposes I think we may exclude from our consideration primary syphilitic ulcers as a cause of stricture. Not so, however, the disease in its secondary and tertiary forms. There can be no doubt that where the blood is highly charged with venereal poison it will retard the healing of any traumatism which may arise, and, by the tendency to plastic exudation of an unhealthy kind, may be the cause of subsequent contraction, which may terminate in actual stricture. These cases explain the beneficial effects which are occasionally produced by small doses of mercury and iodide of potassium. The pressure of bougies also may stimulate the absorption of such deposits.



ATRESIA RECTI (ESMARCH).



CANCER OF THE RECTUM (AGNEW).

Whatever the variety of disease which occasions it the symptoms will be pretty much the same in all—irregularity in the action of the bowels—constipation, succeeded by diarrhœa; mucous discharge from the bowel; straining, with a feeling as if the evacuation was unsatisfactory; attacks of flatulent colic; the fæces appear in detached, broken fragments. The flattened, figured stools, so often alluded to, are really not indicative of stricture, but of spasm of the sphincter, prostatic enlargement, or some tumour pressing on the intestine. It may happen that the symptoms are so trifling and unimportant as to escape unobserved until some accidental circumstance leads to a physical examination. There may be only flatulent dyspepsia. I have met with a case in which the chief distress was palpitation and derangement of the heart's action, caused by pressure of the distended colon, simulating closely morbus cordis. These facts should impress us with the important caution not to be satisfied until we have made a careful physical examination.

The early symptoms are of necessity very obscure, and are referred merely to irregularity, until the narrowing becomes decided, when we have straining and difficulty of discharge. We have already alluded to the ewer-shaped folds of muco-cutaneous tissue which indicate the presence of stricture and its position low down in the bowel.

You must be prepared to meet very opposite conditions of the bowels. I have had recently under my care two cases which show this remarkable antagonism. In the one case a gentleman was brought to me with what was thought to be uncontrollable diarrhœa; in the other there was obstinate constipation, and these conditions may be met with in different stages of the same case. When the bowels become insufficiently evacuated owing to the constriction, nature adopts a very simple process to relieve them. As in urethral stricture, the bowel above is much dilated and the fæces are thus accommodated, but acting as an irritant they cause the lining membrane to pour out mucus in large quantity, by which they are rendered fluid, and then we have diarrhœa persistent for some time, reminding us of the stillicidium urinæ in urethral stricture. We sometimes imitate nature's process by injecting large quantities of linseed mucilage or soap and water, so as to assist in liquefying the fæcal mass. And as in urethral stricture there are abnormal openings in the vicinity of the narrowing, so in rectal stricture. It is, however, remarkable that in this latter case the abnormal openings more frequently exist below rather than above the stricture—a fact which we should carefully bear in mind when dealing with fistula in ano. The obstruction may be so complete as to cause symptoms of ileus; the neighbouring organs are engaged sympathetically; the bladder and uterus may suffer. Ulceration may attack the bowel and cause hæmorrhage; the stomach becomes irritable and refuses food; the abdomen becomes tympanitic; emaciation sets in rapidly, and the unhappy victim dies prostrated by inanition

and want of sleep. Notwithstanding the constant and repeated straining true prolapse is not as frequently observed as we would be led to expect. It may occur when the straining is violent and prolonged, and the stricture low down, the entire mass being forced out and protruded at the anal opening.

Having thus delineated for you the symptoms of simple stricture, it is easy to fill in the painful characters which constitute the sad picture of the malignant form.

This brings us to the most formidable of all diseases of the rectum, *cancer*, which, consisting of an infiltration in the great majority of cases, encroaches on the canal and produces stricture. Most of the varieties of the disease have been described as affecting this part—epithelioma, malignant sarcoma, carcinoma or scirrhus, as it is so often termed, and even melanosis.

The first is most usual, the latter two are rare. Now of epithelioma we recognise three varieties, and they to a certain extent accord with the histological varieties of normal epithelium. In one the morbid growth is made up of flattened scales or tessellated epithelium, as it is termed, a form which you see so frequently at the lip, and it is a remarkable fact that the nearer the verge of the anus the more likely is the disease to present this character.

The second form presents epithelium of the columnar type, and is usually seated higher up than the last, and would appear to take its origin in some diseased condition of the follicles of Lieberkühn, which are so extensively distributed over the surface of the mucous membrane. The crypts become enlarged and extend by growth in the submucous tissue.

The third form might be compared with the spheroidal epithelium which is so frequently found in the very inmost recesses of follicles and glands. This is generally regarded as a destructive change in the last variety, whereby the cells are loaded with a mucous or jelly-like fluid, which may be discharged by rupture and collected in alveoli or spaces, constituting what is usually termed "*colloid*" cancer.

Malignant sarcoma is generally developed as a soft tumour in the alveolar tissue beside the rectum, affects young subjects, grows very rapidly, and may give rise to rather sudden obstruction. It has the characters usually assigned to soft cancer.

Contrary to the generally received opinion carcinoma, hard or scirrhus cancer, is exceedingly rare in the rectum. The term "*scirrho-contracted rectum*," employed by Sherwin in 1789, has had a wide but misleading influence regarding the pathology of the disease.

Melanosis is more interesting as a pathological curiosity than for its bearing on actual practice in clinical surgery.

In cancer of the rectum we do not find the same tendency to hereditary transmission which has been insisted on for cancer in other situations.

It is all-important to remember that the symptoms generally so pronounced and unmistakable may be completely suppressed, and that it may run its course for a considerable time without its presence being recognised either by the patient himself, by his friends, or his medical attendant. If the disease is situated high up the most prominent and distressing symptom, pain, may be completely absent. There need not be any very marked disturbance of the function of the bowels. I know of no more instructive case than the one recorded by Mr. Allingham of a gentleman who was about to be insured at ordinary rates owing to his healthy aspect and the normal state of all his organs, when the history of some bowel trouble led to an examination of the rectum, in which cancer was found to exist beyond question. The symptoms of narrowing of the intestine being present, the fact of its being caused by cancer is evidenced usually by the lancinating character as well as by the severity of the pain, by the raddle-coloured discharge, by the anxious and distressed countenance, by the anæmic leaden hue of the skin, the implication of the inguinal glands, the liver itself being frequently the seat of the morbid deposit. In all cases the diagnosis must be cleared up by a physical examination, when the finger will enter a ring peculiarly nodulated and irregular, not easy to describe, but once felt never to be forgotten (see Plate).

In the female it should be remembered that the disease frequently extends from the uterus to the rectum, and *vice versa* cancerous ulceration may attack the posterior wall of the vagina, nature thus providing for the escape of intestinal contents. In the male ulceration may open the bladder and cause most intense agony. The fæces entering this organ occasion great irritation and subsequent inflammation, the suffering from which calls loudly for relief, frequently demanding colotomy. The pain is also intense where the fæces have to pass over an ulcerated surface of any extent.

The treatment of stricture of the rectum must be considered under three heads—dietetic, medical, and operative. The dietetic must not be too lightly esteemed; common sense would tell us that we must select for our patient food which will be easy of digestion, nutritious, and leave the smallest amount of residuum to swell the fæcal mass. Foremost among these stands milk and its derivatives, cream, koumis or fermented milk, freshly prepared meat essences, beef, mutton, chicken. You will find great difficulty in devising the requisite changes of dietary. The moderate use of stimulants is indicated by debility and the great depression of spirits. Medical treatment is chiefly concerned in keeping the evacuations liquid. Drastic purgatives must be carefully avoided, as they increase irritation and are fraught with danger. The aperient mineral waters, as Friedrichshall or Hunyadi, act very well. The compound powder of liquorice of the Prussian Pharmacopœia introduced

into our own is a mild and at the same time a very efficient laxative. Our choice in this respect is limited, as we must be careful not to upset the stomach already inclined to undue irritability. I have found *succus taraxaci* with the *succus conii* in combination act very well in such cases. Castor oil, which is much resorted to in domestic medicine, is not adapted to most stomachs, and I think its effects are likely to be followed by constipation. It is not desirable that the patient should seek to have the bowels move as often as in health, the *faeces* being kept under the natural amount by dietetic observances. In continued obstruction the enema of warm water and soap is most effectual in liquefying the contents of the large intestine. Anodynes are usually demanded. Belladonna has gained an undoubted reputation in alleviating the distress which these patients suffer, and should always be combined with opium whenever that drug is exhibited in such cases.

The operative treatment is either palliative or radical. Among the first we have bougies of various kinds for the purpose of effecting gradual dilatation of the narrowing, as we do in urethral stricture. Much mechanical ingenuity has been manifested in the construction of a variety of instruments for this purpose. Air, water, and metallic dilators have been for a time the fashion, and have each in turn been laid aside. I believe that everything which can be done by mechanical expansion can be accomplished by ordinary bougies sufficiently soft to be flexible and having the sizes very gradually increased. Much comfort may be obtained, and in many cases life may be prolonged, by their use, but your motto must be *arte non vi*. The greatest gentleness must be used; if they cause pain they will as a rule do mischief, and they must never be entrusted to the patient to use for himself. The frequency of the introduction must be determined by the effect which they produce. As a rule every second or third day is quite sufficient. Too great frequency causes irritation. It is also unwise to allow them to remain too long in the stricture. Ten minutes to a quarter of an hour may be taken as an average. Bougies with spiral grooves have been advocated by some surgeons with a view to applying medicaments to the part. The French surgeons use meches or rolls of linen soaked in various ointments for direct application to the diseased membrane. The frequency with which they note stricture of syphilitic origin must account for the benefit which is alleged to result from such treatment.

Tubular bougies, fitting one over another, have been advocated by Dr. Todd and Mr. Tufnell, with a view to more rapid dilatation. Instruments have been devised on the principle of Arnot's dilator for the urethra—a tube of membrana passed through and then distended with air or water. An ingenious form of this apparatus has been proposed by Ashton, and is figured in his work on “Diseases of the Rectum.” Tents of prepared sponge and laminaria have also had their advocates, and even

the principle of Holt's method for urethral stricture has been applied to the rectum. Of all such rapid methods I may say that they are alike dangerous and unsatisfactory. A very little force too much may rend the peritoneum, and the sudden expansion is followed by contraction. Where you come to use bougies of large size they should be supported by a narrow stem, so that they may not cause spasm of the sphincter, which occasions much pain and prevents the instrument being retained sufficiently long in the stricture.

The surgical treatment by operation ranges from notching the mucous membrane to complete extirpation of the diseased mass, or colotomy, as a palliative in cases which are hopelessly incurable. Curling, Gosselin, and Esmarch speak favourably of "multiple incision" as an adjunct to the treatment by bougie. It can be best done by a hernia knife, slipped flatwise along the finger and then turning the edge against any projecting bands which may be felt. It must ever be borne in mind that these incisions are beset with danger, and must be carried out with extreme caution. Unquestionably in the valvular stricture of congenital origin it is the only practice which really affords any reasonable prospect of success. Almost all surgeons admit that they must be followed up by the assiduous use of bougies.

The operation of "complete longitudinal division," *external linear rectotomy*, is steadily gaining ground as a means of palliation, and even radical cure, since its introduction by Mr. G. W. Humphry, of Cambridge. Based upon the good results obtained by external urethrotomy, as advocated by Rebard and Syme, this practice has much to recommend it. A division of the intestinal wall is made from above the stricture to the anus and extended outwards so as to include the sphincter muscles. The following means have been suggested for accomplishing this object:—The elastic ligature, the ecraseur, the knife, and the actual cautery. The elastic ligature for such purpose may be, in my opinion, dismissed from consideration as horribly painful, tedious, and unsatisfactory. The knife would seem undoubtedly to carry with it the great risk of hæmorrhage, but Mr. Allingham, whose experience entitles his opinion to the highest respect, prefers this method, and entertains no fear of bleeding. The ecraseur requires a good deal of manipulative skill to pass the wire, whipcord, or chain above the stricture; but when this is done the proceeding is easy enough. Mr. Luke practised this operation long before the present ecraseur was proposed. Van Buren advocates the use of the actual cautery with Paquelin's instrument. This can be accomplished with much facility. It divides the part freely, covers the raw surface with an efficient protective glaze, and gives to the adjacent parts a wholesome stimulus to healthy action. Thus freely laying open the bowel from above the stricture gives free escape for the fæcal matter, which was pent up in it, as well as irritating discharges, and affords

almost immediate relief from many distressing symptoms. I consider the galvanic cautery by far the most efficient means of all for carrying out this operation. A tubular needle of sufficient length, and fixed in a strong handle, can be readily passed along the curve of the sacrum, guided by the finger, introduced through the stricture. Slight pressure will cause the point to enter the cavity of the intestine. A platinum wire may now be passed along the tube and caught by a ring forceps with long blades, guided along the finger, and thus conducted through the anus. Advantage may be taken of any sinus or fistulous track favourably situated for the purpose. The ends may now be fixed in the conductor, and the current turned on. As soon as it is heated moderate traction will cause the wire loop to traverse the tissues, and we can gauge with accuracy the amount to be divided. Some surgeons prefer to make the incision always in the median line, posteriorly, as the blood-vessels are smaller and fewer in number. It is said the lateral incision heals more perfectly. This operation may be in many cases substituted for lumbar colotomy, being much simpler, less dangerous, and, if the results are equally good, much more convenient to the patient.

Complete extirpation of the lower extremity of the rectum has now been performed with sufficient frequency as to rank it among the standard operations for the treatment of this disease. Three or four inches have been removed with the sphincter, and yet the fæces have been in a great measure retained.

The names of Lisfranc, Velpeau, and Recamier are found in this field of surgery. The operation, which had fallen much into disuse, chiefly owing to its performance in unsuitable cases, was revived in England by Paget, Allingham, and others. It has also been performed in most of our Dublin hospitals.

The method of performing this operation advocated by Mr. Cripps is without doubt the most satisfactory. It consists of a combination of excision and the use of the ecraseur. Maisonneuve has devised a plan for ingeniously intersecting the entire wall with loops of whipcord, which are made to cut through the bowel by the action of the ecraseur, but the proceeding is unnecessarily tedious and complicated. The bowel can be with much facility detached from its connexions posteriorly and laterally, the chief difficulty being experienced in separating it from its anterior attachment to the prostate and urethra in the male, and the vagina in the female. The bleeding, which is smart enough, although seldom to any serious extent, comes from vessels which descend in the coats of the bowel, may be controlled by pressure, while the chain of the ecraseur is being applied around the bowel, well above the disease. Some surgeons advocate connecting the divided end of the rectum with the skin, but this is found to be utterly useless, as the stitches tear away. The wound should be left perfectly free, and, by raising the patient's body, kept in

the most depending position, and frequently syringed with some antiseptic, so as to allow of the free escape of all fluids and the intestinal contents. The amount of control which patients have over the bowel after this proceeding is most marvellous.

Much of the disrepute into which such operations have fallen is due to want of care and discrimination in the selection of suitable cases. These do not average more than twenty per cent. of all the examples of rectal cancer which present themselves to the surgeon.

DISINFECTION IN ENTERIC FEVER.

IN a paper by Dr. James C. Wilson, "On the importance of the thorough Disinfection of the Stools in Enteric Fever," in the April number of the *American Journal of the Medical Sciences*, he states that not only is it "possible to greatly restrict enteric fever in its prevalence, but that, as has been suggested by Flint, it is also possible in course of time to get rid of it altogether." He believes that safety lies in the thorough disinfection of the stools immediately after they have been voided. Where so much is at stake it is a matter of grave importance that the method and agent employed should be efficient. In discussing this point he quotes Koch as authority for the statement that the only certain disinfectants are chlorine, bromine, and corrosive sublimate. The result of his studies and experiments have led him to the conviction that we have in corrosive sublimate a most efficient disinfectant, which is moderate in cost, free from colour and odour, and convenient to use and rapid in its action; and to this agent he gives the preference for use in preventing the spread of enteric fever. As to the method of using, he recommends that the physician himself, to avoid accidental poisoning, take to the house of the patient two drachms of corrosive sublimate and dissolve it in a gallon of water in a large bottle or demijohn, which is to be labelled, and given into the charge of the nurse. Immediately after the bed-pan has been used, a sufficient quantity of the solution should be poured over the faecal contents to cover them. Hard lumps, when present, should be broken up in the solution. The pan should be allowed to stand for fifteen minutes before emptying, and if emptied into a water-closet the valve must be kept open long enough to secure the thorough flushing of the trap. A small quantity of the disinfectant solution should then be poured into the basin of the water-closet and allowed to remain, and some of the same solution should also be kept in the bed-pan in the intervals of its use. The linen should be sprinkled with the same solution, and portions stained with the discharges must be thoroughly wet with it, or even allowed to soak for a time before sending it to the laundry. The clothing should also be boiled for some hours, and thoroughly rinsed before being handled by the washerwoman.