

the iris bulges forward. Now turn off the current, and place the tip of the magnet in position to draw the metal through the pupil into the anterior chamber. When the metal is in the anterior chamber the operation is a simple one. Make an incision over the foreign body with a Graefe knife or a keratome, and extract with a small magnet. In operating with the giant magnet we should have a non-magnetic eye speculum and fixation forceps. If we operate through the sclera, we should have two non-magnetic retractors to hold the wound in the conjunctiva open.

Choice of anesthetics must be left to the behavior of the patient. Cocain will be sufficient in most cases. All magnets of this kind should have a rheostat, and the magnet should touch the eye before applying any electricity. The rheostat should always be moved slowly in order not to use any more force than is necessary.

DISCUSSION.

Dr. HENRY GRADLE—I wish to cite the case of a young girl who had a chip of iron enter the sclerocorneal junction, penetrating through the lens. She came to me a few hours after the injury with a large rent in the lens capsule the external wound still open. I immediately made an iridectomy, extracted the lens, entered a small magnet, but could not get the foreign body. Cyclitis set in. A few days later, partly for diagnostic purposes and partly with the vain hope of accomplishing something, I placed her against the field pole of a ten-horse power motor, not differing very much in strength from this large magnet. She felt nothing. On bringing the eye in contact with it there was no visible change, but on enucleating a few days later the chip of iron was found displaced in such a way that I attributed its displacement to the application of the magnet. The foreign body was found in a position which it could not have reached by following a straight path or by subsequently sinking.

Dr. WILLIAM H. WILDER—It seems like inflicting unnecessary injury on the eye to draw a piece of steel forward, then around the lens, possibly injuring the posterior capsule, then through the suspensory ligament, making a rent in it, and then, in addition, running the risk of tearing the iris for the purpose of bringing the foreign body into the anterior chamber. I really can not see the rationale of having the foreign body make such a wide excursion with imminent risk of wounding important structures of the eye, when it is positively demonstrated that it is in the vitreous chamber.

Dr. WARE—I think we can determine very largely where the foreign body is located by the pain that it causes to the patient, by the impact of the foreign body against the eye toward the magnet. It strikes me that in an eye that is already inflamed and sensitive it would be difficult for a patient to localize the exact spot where the pain is.

Dr. FISHER (closing the discussion)—In regard to the statement of Dr. Wilder, of wounding important structures in extracting a foreign body with this magnet, it is not necessary to use enough force to cause serious injury to any of the important ocular structures, particularly when we have a rheostat to regulate the current. He spoke of drawing the foreign body through the posterior capsule. I stated in my paper that this should not be done unless the lens was already opaque. A foreign body can not be drawn through the lens, but by using enough force to draw it through the zonula one can see the iris bulge, then turning off the current, turning the magnet around, and coaxing the foreign body into the anterior chamber. In this way very little or no damage is done. Haab, who has probably extracted more foreign bodies with this instrument than anyone, uses the same method which I have demonstrated to-night. Reasonable care must be exercised in doing this operation, and not enough force should be used to injure important structures of the eye.

ACUTE OBSTRUCTION OF THE BOWELS.*

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I shall deal with acute obstruction of the bowels from a surgical standpoint, for I am convinced that the few cases which recover without operative interference but emphasize its importance. The results of operations for the relief of the various conditions that produce obstruction are all the while improving. These results, however, are not what they should be. The mortality is too great. When physicians come to a full realization of the importance of prompt and active interference, when they become willing to call immediate surgical aid, then will the mortality be reduced still further. So long as we are content to leave the cases to nature, and content ourselves with pumping our patients full of water or air, and giving them all sorts of drastic purgatives, just so long will we send more and more of these unfortunate victims to untimely graves. These are dangerous agents, and as a rule, they only serve to intensify the condition, produce greater shock, and an earlier demise.

Carefully prepared statistics show that less than 25 per cent. of these cases are amenable to medical treatment. Shall we, then, in the face of such statistics, confronted with such a mortality, persistently employ medical measures for four, five, six, eight, ten days, or longer, hoping for the improbable, but simply hastening the inevitable? It is only necessary to appreciate correctly the causes of acute obstruction to be convinced of the utter futility of medical treatment in any but exceptional instances.

By comparing acute obstruction from intra-abdominal causes with like conditions due to strangulation of an external hernia, a better understanding is had.

Leaving out individual idiosyncrasies, the pictures presented by the two conditions are almost identical. This is notably true of the internal herniæ, whether the hernia be into the duodeno-jejunal, pericecal, or intersigmoid fossa, or through the foramen of Winslow, slits in the omentum or mesentery, or underneath bands of adhesions or diverticulæ. While hernia of the diaphragm is a parietal hernia, it is really an internal hernia, and should be so classed. Kinking of an intestine, volvulus, foreign bodies, gall-stones, enteroliths, tumors within the intestinal wall, strictures, pressure from intra-abdominal growths, enteritis, peritonitis, or appendicitis, may cause an acute obstruction. Intussusception is also a frequent cause of obstruction, but typical cases present such a clear-cut picture as to make the diagnosis easy and positive. We must not be led into the error of looking for the characteristic symptoms of intussusception in the other forms of obstruction.

There is one cardinal symptom of all the varieties of acute obstruction; that is, failure to get a passage of either feces or gas. The lower bowels may be emptied by enemata, but it is impossible to get a through action. There is usually sharp pain, accompanied with nausea, vomiting, and not infrequently, marked signs of shock. These symptoms may be intermittent, or progressively increase to stercoraceous vomiting and profound collapse. The temperature in the beginning is normal or subnormal. When the

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obstruction is due to or associated with inflammatory conditions, there is elevation of temperature. The pulse is usually increased in frequency, but diminished in volume and force. The facies abdominalis is frequently well marked. The skin is at first cool and pale, then moist, later bathed in perspiration. The clinic picture is the exact analogue of a strangulated external hernia, minus a visible tumor.

Intussusception presents the additional symptoms of a sausage-like tumor in the abdomen, small mucous or bloody mucous stools, and occasionally the head of the invaginated gut may be felt per rectum.

The diagnosis of obstruction is comparatively easy; a correct differential diagnosis, quite difficult. A history of appendicitis, typhoid fever, laparotomy, or abdominal traumatism would naturally lead one to suspect strangulation by adhesions or by a band of organized lymph; of occasional short, sharp attacks of pain, associated with nausea and vomiting, followed by sudden and complete relief, hernia into one of the normal peritoneal fossæ. The location of the pain, tenderness on pressure and muscular tension, are also of some value. Increased peristalsis of visible coils of intestine and local meteorism are of diagnostic importance in cases seen early, before there is general distension. It is not only of great importance to make an early diagnosis of obstruction, but to locate the obstruction as well.

The increased peristalsis of visible coils of intestine which uniformly stops at the same place would naturally lead to the conclusion that the obstruction was near that location, and while this sign is of more importance in chronic obstruction, it is also of value in acute obstruction. The determining the location of the obstruction is very helpful in arriving at a definite diagnosis. Valuable time should not, however, be wasted in trying to make diagnoses that are often impossible. The pathology of acute obstruction is of very great interest. The shock, the nausea, the vomiting, and the manifold and grave symptoms produced by acute obstruction of the bowels can not be accounted for by the simple constriction of the lumen of the gut. In most cases a profound impression is made at once upon the sympathetic nerves and carried by them to the great abdominal brain. Changes take place in the intestinal wall, and also in the intestinal contents, very rapidly. The micro-organisms, many of which are under ordinary conditions saprophytic, become under these conditions, dangerously pathogenic. Fermentation takes place rapidly, and ptomaines are formed within the intestines; these produce irritation and pathologic secretion, and this combined influence still further poisons the local tissues, and by absorption and transmission, the entire nervous system. The intestinal wall, that in its normal state prevents the passage of micro-organisms into the surrounding tissues, becomes disorganized, and allows them ready passage into the peritoneal cavity, the liver, spleen, etc. In cases seen late it is often impossible to differentiate between obstruction and a beginning peritonitis from other causes.

The treatment of no condition more thoroughly tests a surgeon's skill and judgment than does that of acute obstruction of the bowels. The surgeon who operates for the relief of obstruction should be prepared to deal with any one or more of its various causes. He must have at hand the necessary mechanic aids, and have his head and hand trained to meet intelligently and treat skilfully whatever he may

find. Acute strangulation by a Meckel's diverticulum is frequently mistaken for appendicitis. Surgeons of note and large experience in abdominal work have several times made this mistake. They have diagnosed appendicitis, and operated for it, when the trouble was of an altogether different character, requiring an entirely different procedure for its relief.

The method of dealing with the obstruction will depend largely upon its character, as well as upon the length of time intervening between the onset of the disease and the resort to surgical interference. Early operations are simpler, and promise much better results than do late ones. It is such a simple measure to break up adhesions or bands that may be causing obstruction, to deliver an incarcerated intestine from one of the peritoneal fossæ, or to release it from the embrace of a Meckel's diverticulum when the operation is undertaken early, and the results of these early operations are so gratifying, that one would hardly seem justified in resorting to the more dangerous and far less effectual medical measures. An intussusception can be dealt with more safely, more scientifically, and with greater facility, intraperitoneally than it can per orum or per rectum. The intussusception can be reduced, if reduction is possible, or where it is not, an immediate resection may be done while there is a fair chance of success. If the lower bowel is distended with water or air it is always a question whether the pressure will be exerted upon the intussusceptum or wasted upon the healthy bowel. Even where the full force is brought to bear upon the condition, it is the exceptional case that is relieved. Nor are these procedures free from danger. The intestinal wall rapidly becomes thinned and weakened, and has been ruptured by very moderate pressure. Three feet of hydraulic pressure has caused rupture of the infantile intestine. It is impossible to estimate correctly the amount of pressure which the weakened, incarcerated intestine will bear, and it is therefore unscientific and dangerous to have recourse to these methods, unless one is prepared to go ahead and operate if relief is not immediate and complete. A careful study of the statistics of successful operative cases shows that the best results have been obtained in the late cases by the establishment of an artificial anus, either temporary or permanent. Mr. Treves has shown very clearly in a recent paper published in the *London Lancet*, why this is so. He has shown that it is simply a further exemplification of the great principle of drainage. The intestine is filled with the most poisonous material. Its walls are thinned and distended with gas, and it is incapable of resuming its normal functions, even though the obstruction be removed. The establishment of an artificial anus, even though the obstruction remain untouched, allows the escape of this dangerous pent-up material, and permits the intestine to assume more normal conditions. Sometimes, and not infrequently, nature thus aided, completes the cure. When this happy result does not take place, the surgeon may undertake further operative procedures under far more favorable conditions than could possibly have obtained at the time of the primary operation. It is often a question with the surgeon as to whether he will allow the affected gut to remain, or do a resection. Where the gut, after being released, rapidly resumes its normal color, and where it has not lost its gloss, there is no question about leaving it intact. But

where the circulation returns very slowly, leaving discolored and abnormal looking patches, and where the peritoneal covering has completely lost its luster, the intestine should be watched carefully for some time, and if there is not constant improvement, it should be at least anchored to the abdominal opening, so as to be readily accessible in case of a breaking down. Where the gut presents a gangrenous appearance, where it is completely denuded of its peritoneum, and where there is practically no return of circulation after removing the constriction, then a resection should be done, when the conditions are favorable; or an artificial anus established in the more desperate cases. When resection of the bowel is done, the resected ends may be united by simple suture, or by the intervention of one of the mechanic aids. Mr. Treves claims in the paper above referred to that sixteen years ago he used a collapsible rubber bag practically identical with that recently introduced to the profession by Dr. Halsted, but that his experience with the instrument demonstrated its worthlessness. Where time is an important element, as it always is more or less in these operations, an end-to-end anastomosis with the Murphy button can be done in a very few minutes. The Murphy button to date has given better results, and has been more largely used, than any other mechanic device. The LaPlace intestinal anastomosis forceps, however, are even more ingenious than the Murphy button, and the operation may be done almost as quickly as with the Murphy button, and without the disadvantages of pressure necrosis and its consequent dangers, even though remote they be, or the leaving of a foreign body within the intestine. Theoretically, this instrument seems to be a decided step forward, and it has been used very successfully, both on the lower animals, and on human beings. A Meckel's diverticulum should be cut off, and the resulting opening in the intestine closed in the usual way. Obstruction due to general peritonitis does not offer very much to the surgeon. Without operation, however, the condition is absolutely hopeless. Where the cases are seen early, and the general condition permits of operative interference at all, brilliant and gratifying results may be obtained. The faithful, conscientious surgeon will not withhold his helpful hand in desperate cases for the sake of his statistics. Each life thus saved is as a brand snatched from the burning, and is a surgical triumph far-reaching in its consequence.

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PHYSIOLOGIC RHYTHMS.

THE PRACTICAL VALUE OF THEIR RECOGNITION IN TREATMENT OF FUNCTIONAL NEUROSES.

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All the normal rhythms are physiologic, are the expression of organic activity, but there are many which are gross exaggerations in their intensity, and some unphysiologic in their morbid expression; but rhythms, diurnal, weekly or monthly, which demonstrate an alteration in either the psychic or physiologic conditions, and as such, must be studied and utilized when treating psychic or functional disturbances.

Every living cell, and the multifarious resultant products and ultimate complete organizations due to

the activity of cells are controlled, governed and developed through rhythmic action. Sunlight and darkness, the ebb and flow of tides, the regularity of the seasons, the periods of growth and decline, activity and rest, fecundation and sterility, exaltation and depression, nutrition and decay have a law of regularity and alteration fixed and immutable. These coarser variations in the rhythms which are a part of our environment are duly acknowledged, and our habits adapted accordingly.

The nutritive variations in individuals are as sundry as the numerous vocations, habits, environments and hereditary influences which contribute to make up the human social fabric. The central nervous system is particularly sensitive to nutritive changes and irregularity. A faulty or undeveloped gland disturbing the nutritive conditions under which the neuron normally responds, will destroy the harmonic action of the entire nervous system. Daily food rhythms are organically based, but habits, customs, social or business demands oftentimes ignore the periodic necessity of recognizing them, and the result is some form of nervous revolt, which can only be quieted by a prompt and absolute obeisance to the neglected claim of a somatic regularity.

All rhythms depend on variations in the stimuli, and changes in the physiologic condition of the system will produce these varying stimuli. Hence, if there is a slight disturbance in the normal physiologic habit, it will often only be demonstrated in an altered rhythm, which altered rhythm may so disturb the psychic centers as to culminate in one of the distressing and annoying functional neuroses.

All cells, in order to preserve function and complete their cycle of activity, must be constantly stimulated. It is a normal necessary process. Food is a stimulant and does the least harm to the elements, as these elements are undergoing a constant and regular disintegration which nothing can prevent. In studying neurasthenics it is generally found that through some occupation, habits, or social demands, the normal nutritive rhythm has been disturbed, and the regular physiologic demand for its stimulant food is demonstrated by fainting attacks, extreme weakness, pallor, cold perspiration, rapid, weak pulse and a sense of general nervousness, although the patients will say they have eaten heartily, though irregularly. These individuals will be found to be somewhat hungry during these attacks, for they are really suffering from exhaustion due to lack of nourishment. This absence of nutriment is the result of neglecting the regularity of the human system, and although food has been forced into the stomach, it has been passed along the intestine undigested, and the weakness, the nervous depression, is partly due to autointoxication through faulty metabolism and non-assimilation. Such cases are often seen among newspaper writers, society persons and actors, all those whose lives and occupation are distinctly antithetic to physiologic periods of rest and activity, nutrition and decay. Fortunately, man's nervous system is so pliable, so adaptive, that changes in habits will bring about certain variations in organic activity, so that the man of nocturnal habits will have his diurnal rhythms reversed but regular. Only will this fortunate condition prevail as long as man recognizes that he must obey the physiologic rhythms, and that his nights are physiologic days, and days physiologic nights, and not attempt to force upon nature the third habit of crepuscular conviviality.