

below the navel will be quite still, and this lack of motion can be considered a symptom of gravity. Hic-cough is not present in the early stage of inflammation, and when seen later it must be regarded as a grave symptom.

Auscultation.—Auscultation enables one to recognize that movements of the bowels are taking place, the gurgling of gas and other sounds being easily perceptible. Absolute silence over the belly, on auscultation, is an unfavorable symptom; it suggests intestinal paresis, and justifies a most grave prognosis.

Attitude of the Patient.—The patient will take the attitude which puts the inflamed portion of the body at rest; hence the recumbent position, the flexed right thigh, the removal of all compressing bands or substances which weigh upon the belly, and the absolute quiet which he maintains. The flexion of the thigh shortens the psoas and iliacus muscles which are adjacent to the inflamed area; and, to effect a still further shortening, the knee may be grasped and the thigh pulled toward the body. The facial expression varies greatly; the general expression is one of anxiety and uncertainty, and this expression becomes more and more pronounced as the disease advances. In septic peritonitis the Hippocratic countenance occurs. A flushed face, dry lips, etc., accompany fever, but the typhoid expression is not characteristic of an acute attack of appendicitis.

The Intelligence.—The intelligence of the patient is not affected; it is often very acute, and persists, notwithstanding the many changes in the disease, until shortly before death. Even when general sepsis is present, the acuteness of mind and intelligence may persist. Dark circles around the eyes and an apparent recession of the eyes into the orbits may be taken to indicate that peritoneal inflammation is serious and advancing.

Pain.—Pain commences suddenly; it may amount only to discomfort or it may be acute, even to the extent of incapacitating the patient from moving or seeking help in any way. While the pain may be severe the acme is not reached for a certain time. At first the pain is referred to the epigastric or umbilical region, but later it seems to shift, and the patient will refer it to the region of the appendix. Rarely is this noticed until some hours after the commencement of suffering, unless perforation takes place; but, sooner or later, pain in the region of the appendix is to be expected. It is perhaps noteworthy that while dry warmth, as a bottle of hot water or hot flannel, may relieve pain, the patient will never make pressure over the tender region; indeed, pressure increases suffering, a circumstance which distinguishes this disease from the colic of indigestion. Pain may be felt in the lumbar region, and this is especially noticeable when the appendix is behind the cæcum. The writer has noticed in chronic appendicitis, when discomfort was referred to the epigastric region, that support by a bandage applied to the right iliac fossa has sufficed to remove the epigastric pain. If the appendix is long and the inflamed end is in relation with the urinary bladder or ureter, pain in micturition and pain referred to the meatus are complained of, the latter being possibly acute. The desire to pass water frequently is then complained of. When the appendix is on the left side, or is so long as to extend to the left side, and becomes there inflamed, pain, as would be expected, is referred to that region. McBurney has called attention to the fact that pressure pain is most marked in many cases at a point situated two inches to the inner side of the anterior superior spinous process on the right side, along a straight line drawn from that process to the navel. At or about this place is usually situated the root of the appendix. If the inflamed organ lies anterior to the cæcum, the pain is more acute on pressure; but if it is behind the cæcum, deep pressure may be necessary to elicit an expression of pain, unless the peritoneal coat is already involved. When the end of the inflamed appendix hangs over the brim of the pelvis, deep rectal examination may give pain. It goes without saying that when the peritoneal coat of the appendix is implicated in an inflammatory

process, absolute rest is comfortable to the patient; hence whatever muscular effort will in any way relieve the movement of the abdominal muscles is unconsciously made use of by the patient. Thus, for example, while the lower abdominal wall, especially on the right side, will be quite still, it will be observed that the patient does his breathing by means of the thoracic muscles. As more and more peritoneal membrane becomes involved in the inflammatory process, so the pain becomes more and more extended, diffuse, and acute. Hence a fair knowledge of the amount of peritoneum involved can be obtained from the patient's expression of pain when pressure is made over different parts of the abdomen. Pain in the right iliac fossa, in the epigastric region, under the left ribs, in the rectum, may indicate that a general peritonitis is present. Pain in the right flank suggests the presence of the appendix behind the cæcum, or of matter tending to point in that direction. Should pain in the right iliac fossa in front be wanting, the opinion just expressed would be rendered wellnigh certain. A sudden disappearance of all pain, when taken in connection with the advance of the symptoms and with the great weakness, makes the prognosis very grave.

Vomiting.—Vomiting is often met with during the onset of an attack and may be taken to indicate severity. The material vomited will be that which the stomach contains; afterward, it will consist of mucus, perhaps bile-stained; but the so-called stercoraceous vomiting of strangulated hernia is not seen. Vomiting may be excited by taking substances into the stomach—water, food, etc., but it rarely persists beyond the onset of the attack. When general septic peritonitis exists, vomiting resembles regurgitation, and the material regurgitated will look like finely chopped spinach, so green will it be.

Pulse.—The pulse rapidly rises and the rapidity bears a close relation with the amount of inflammation present. In cases in which the attack is very sudden and the peritoneal coat is rapidly involved, the pulse increases with amazing rapidity. A rapid, full pulse suggests an advancing and perforative inflammation, especially if the rapidity continues. Perforation is characterized by a very rapid, feeble pulse. The pulse is a better index than the temperature, unless this latter is taken by both rectum and mouth and the two are compared. When death is impending and in rapidly advancing cases, the pulse will disappear from the wrist some time before dissolution.

The pulse seems to bear a close relation with septic absorption.

Fever.—The amount of fever apparent when the temperature is taken with a thermometer in the ordinary way, is deceptive. By the mouth or the axilla the temperature may be normal or subnormal. It is not at all unusual, especially when perforation of the bowel has taken place, for the surface temperature to be subnormal and the skin clammy and pale. In acute appendicitis the only bodily temperature that is worth considering is that which is taken by the rectum; and by this I do not mean the temperature which is taken just within the anus, but the temperature which is taken four or five inches above the anus, at or about the point where the peritoneum is reflected on to the rectum. The temperature by the mouth should be taken and compared with the temperature by the rectum. A difference of several degrees indicates peritonitis.

When the temperature of the mouth and that of the rectum are nearly the same, general peritonitis can be excluded. The temperature of the rectum then can be taken as a fair index of the gravity of the patient's condition. It is usual to consider that the pulse is a better index of the patient's condition than the temperature, but when the temperature is taken by the rectum and compared with the temperature by the mouth, valuable information is gained by the physician. A rectal temperature of 102.5° or 103° F. strongly suggests circumscribed suppuration about the appendix. It will be one or two degrees higher than by the mouth. A general peritonitis not walled off by adhesions will usually give a rectal temperature of 104° F. or higher.

A subnormal temperature by mouth or axilla, especially if the skin is pale and pulse rapid, suggests a determination of blood to the peritoneal cavity and always necessitates that the temperature be taken by rectum. An advancing temperature always suggests an advancing inflammation, but the absence thereof does not mean that the inflammation is at rest. A chill rarely occurs unless the peritoneum is involved and suppuration is imminent. The chill may be of such a minor degree as to attract no decided notice on the patient's part. The patient will sometimes complain of a little chilliness in the back, or ask that an adjacent window be closed, but a severe chill is exceptional. Chills at short intervals can be taken as a symptom of constitutional sepsis, rather than of local inflammation.

Subsidence of the temperature, when associated with slowness and strength of the pulse, is a good sign and indicates a favorable change in the patient's condition. It will be noticed during an attack of colic, and it suggests the removal of the cause that gives rise to the colic. When catarrhal inflammation of the appendix exists, there will be a free discharge of mucus into the cæcum; and when suppuration exists within the appendix, the disappearance of pain will indicate that the contents of the appendix are being emptied into the cæcum and that consequently the tension has diminished.

PERFORATIVE APPENDICITIS.

SYMPTOMS.—The symptoms which characterize perforation with extravasation into the general peritoneal cavity are marked. There occurs generally a sense as of something giving way followed by excruciating pain and pronounced collapse. The patient experiences a sense of profound illness or even of impending dissolution; he is restless and his voice is feeble and sighing. The surface becomes cold and clammy, the pulse very frequent and feeble, the skin pale and covered with sweat, the muscular system relaxed. The temperature at this time is subnormal upon the surface and in the mouth; in the rectum it is several degrees higher. If the extravasation is small and can be circumscribed, adjacent coils of intestine adhere together, and symptoms of an abscess within the peritoneal cavity appear. If the inflammation is general and not circumscribed, then in addition to peritonitis the symptoms of general septic absorption become plain. The rectal temperature goes to 104° or 105° or 106° F., the pulse rises gradually until it can no longer be counted, the abdomen either becomes board-like from the rigidity of the muscles or else balloons out (intestinal paresis). Auscultation shows no movement in the bowels. Tumor, formerly apparent in the right iliac fossa, disappears. A finger pressed on the skin leaves a white mark which disappears slowly, and the eyes are surrounded by dark rings and seem to recede in their sockets. Constipation is absolute, urination infrequent; the patient is thirsty and craves crushed ice; the tongue becomes dry; advancing restlessness is very apparent; intelligence is usually and unfortunately acute. Gradually the extremities become chilly and then cold, the pulse disappears from the periphery to the centre, and death closes the scene.

PROGNOSIS.—When the fever is not high and does not advance rapidly, when the pulse is full and not very fast, when the bowels are moved by mild purgatives, when the abdominal walls are not hard or rigid during respiration, when tenderness in the right iliac fossa is but slight, when vomiting has occurred perhaps once or twice only, when the patient sleeps without narcotics and experiences little general discomfort, and when the expression of the face does not indicate peritoneal inflammation, it may safely be said that an operation need not be undertaken immediately, and that medical means may be employed. When the pulse grows more rapid and the temperature rises steadily, when pain and discomfort increase, when rigidity of the abdominal wall is present and is becoming more marked, when pain in the right iliac fossa is more apparent than some hours previously,

when the bowels are constipated, it is to be recognized that the disease is advancing. With a rapid pulse, flushed face, high rectal temperature (that in the mouth being moderate), pain decided in the right iliac fossa and much increased on pressure, firmness of the abdominal walls and immobility of the parts in the right iliac fossa during respiration, and a leucocytosis present, it may be said with some decision that suppuration is present outside of the appendix. A very rapid, feeble pulse, a temperature of 103.5° to 105° F. in the rectum, elevated only a degree or two, perhaps subnormal, in the mouth, a pale skin, finger pressure on the skin making a white discoloration which slowly disappears as the blood returns in the capillaries, board-like abdomen or a ballooned out abdomen, urine in scanty amount, with or without a hardness in the right iliac fossa, and tenderness on pressure over the whole abdomen, justify a diagnosis of a general peritonitis and a very unfavorable prognosis. If, added to the above symptoms, the pulse cannot be counted at the wrist, the extremities are cold, and there is lividity about the mouth, ears, and over depending portions of the trunk, dissolution may be held to be not very far distant.

TREATMENT.—The treatment of appendicitis is to be considered in relation to the pathological condition present. It may be accepted that an inflamed appendix is not in its proper place when situated in the human body, and the sooner it is taken away the better, in order that the patient may have no more acute attacks and that the attack then present shall be cut short. So much for the general statement. But, unfortunately, this treatment, while it is good in general, will, in a certain number of cases, undoubtedly cause the death of the patient.

Medical Treatment.—In view of the evidences of previous inflammation about the appendix found post mortem, it is plain that many cases of appendicitis recover not only without operation but without treatment; and it goes without saying that surgical treatment is unnecessary in many instances, medical treatment sufficing to produce a cure—or, at all events, if not a cure, an amelioration of the inflammatory conditions existing, so that an operation between attacks is possible.

The medical treatment for appendicitis can be briefly summed up as follows: absolute rest in the recumbent position, abstinence from food, dry cold in the form of a rubber bag or bladder filled with ice kept over the right iliac region, and free purgation. The use of opium has not been beneficial in my hands, and I abstain from using it until the pathological condition of affairs in and about the appendix is plain. Where doubt exists opiates are contraindicated. I have not been able to see that free purging has ever done any harm or that it has induced a giving way of the appendix wall which otherwise might not have been expected; hence rest to the body and free purging are mainly to be relied on. Intense and agonizing pain in the region of the appendix should lead to operation rather than to the administration of opium. An additional reason for withholding opium is that by deadening the sensibility, the important symptom, pain, is rendered uncertain; and it is a very important symptom, often enabling the surgeon to recognize the condition of affairs present. Opium also constipates. Pain and inflammation occurring in the right iliac fossa accompanied by constipation justify a much graver prognosis than does the same amount of inflammation, if purging can be induced easily. When it is necessary to induce sleep, chloral in large doses, by the rectum if there is vomiting, can be given. Some of the coal-tar derivatives also may be used; but it is not wise to obtund sensibility and to produce constipation by drugs until the condition of affairs is quite evident. If opiates are given before an operation, the bowels will remain constipated after the operation, and so there is brought about a condition of affairs unfavorable for recovery.

Surgical Treatment.—In acute appendicitis, when the disease is limited to the appendix itself, the periappendicular tissue being but little involved and the appendix not yet perforated, if it is possible for the surgeon to

recognize this condition of affairs as present, it is unquestionably proper at once to remove the appendix. With modern methods the danger attending abdominal section and the removal of the inflamed appendix—the inflammation, however, not having extended to the peritoneal coat—is small, and incomparably less than when the appendix is allowed to remain. Furthermore, it is proper to do the operation immediately. Unfortunately, it does not often happen that the surgeon sees the case at this stage of the disease, because the patient may have been treated by a physician until this time has passed, or because the disease has passed beyond this stage before the patient has called attention to the trouble. Not infrequently the patient's attention is seriously attracted for the first time to his or her condition only when the peritoneum becomes involved, *i.e.*, when the pain becomes severe and the fever marked.

The following case is an example: A girl, aged nine, while at dinner with a friend, was taken with an acute pain in the abdomen. She left the table complaining, and went home. She vomited during the evening, and went to bed, suffering much pain. I saw her the following morning. There was then acute pain in the right iliac fossa, extending somewhat across the middle line of the body. Temperature by the rectum was 103.5° F., pulse 118, face flushed, thirst was complained of. I at once opened the abdomen, finding a ruptured appendix and a piece of fecal matter in the peritoneal cavity. Decidedly less than a day had elapsed since the first symptom of discomfort or illness had been complained of by the child. It is probable that in this case the occurrence of a perforation gave rise to the first symptoms recognized by the child and that ulceration of the mucous membrane of the appendix and of the muscular coat had been going on for some time without the patient's discomfort or knowledge. The child, up to the time of its attack at the dinner table, had been in active, vigorous health, to all appearances, and had been enjoying all the sports of childhood. Inasmuch as perforation, when it takes place during the first two or three days, is not so apt to be walled in by adhesive peritonitis as when perforation takes place at a later period, it is wise to remove the appendix and cut short the disease during these first two or three days—*i.e.*, providing the disease is advancing—lest general peritoneal inflammation supervene. In the acute cases this is the most favorable time for operation. Later, when pus forms about the appendix, there is then to be considered, not only the disease of the appendix, but also in addition an abscess which is walled in by the adhesions of coils of intestine, for the abscess is very generally intraperitoneal. In exceptional cases, in which the appendix lies behind the cæcum in connective tissue, the abscess is found to be extraperitoneal. Although it occupies a position behind the serous membrane, the tendency there, as has been already pointed out, is for the pus to move toward the loin.

The treatment of appendicitis associated with periappendicular intraperitoneal abscess is a subject of great moment and one in which it is not possible to lay down definite rules of practice, more particularly in regard to the precise time when the pus is to be evacuated. The danger is, that the general peritoneal cavity may become infected, and that a general septic peritonitis, with all its grave results, will follow. The appendix itself, which is the cause of the trouble, is perforated, or, at all events, if not actually perforated, it is unquestionably in that condition of inflammation which permits the passage through its walls of the organisms within its lumen. Under such conditions it is clear that the appendix itself should be removed. The abscess, with the tissues immediately surrounding it, should also be removed, and the peritoneal cavity should be rendered thoroughly clean. But just here we encounter a serious difficulty. The manipulations necessary to accomplish the desired purpose may cause a rupture to take place in the softened tissues and thus may lead to a general infection of the peritoneal cavity. When pus exists in this cavity it is imperative that effective drainage should be provided.

This may be provided either by strips of gauze or by some form of tubes. My personal preference is, in the majority of cases, for gauze; I use tubes very rarely and only in conjunction with gauze, or when gauze has shown itself to be a failure. It may be extremely difficult, when an abscess is present, to find the appendix, so buried will it be in the wall of the abscess. Is it right to search for and remove a diseased appendix, no matter what difficulty the operator may experience in searching for it, or to what extent he may open and infect a clean peritoneal cavity? Probably the best rule for the surgeon is to open freely the abdomen, evacuate the periappendicular abscess, search for the appendix carefully, and remove it unless such search and removal shall actually threaten to infect the hitherto uninfected peritoneal cavity. After evacuation of the pus, fill lightly the abscess cavity with gauze, which should be in strips and should project beyond the skin of the abdomen, thus serving as a drain.

Sometimes it will be found that the appendix has already sloughed off from the cæcum, and is lying free in the abscess cavity, or it may be washed out with the pus during the first few days following the operation. At times a little fecal matter appears in the discharge, and yet, notwithstanding this, the perforation may close without the necessity of suturing or applying a ligature. I do not think it wise to wash out with water the cavity of an intraperitoneal abscess at the time when it is first opened. Immediately after such opening the pus is to be evacuated and gauze is to be packed lightly in the abscess cavity, but no irrigation is to be made use of. This course is advocated because irrigation, even when effected by means of a gentle stream, may separate adhesions and so transport pus to the previously healthy general peritoneal sac. After a few days the adhesions will have become stronger and then general irrigation may be not only permissible but necessary, in order to cleanse the cavity. Irrigation under strong pressure is never expedient. When general septic peritonitis exists, no harm can follow the separation of adhesions, if such a step is found to be necessary in searching for the appendix or for outlying collections of pus. The general peritoneum everywhere is to be wiped with gauze until all pus and lymph shall have been removed, and gauze strands, many in number and of large size, should be packed among the intestines so as to drain from every direction. I am not enthusiastic in regard to the practice of employing large quantities—gallons—of water in washing out the general peritoneal cavity, as is advocated by some excellent surgeons. The results which I have obtained without such copious irrigation will compare favorably, I believe, with those obtained by the advocates of this procedure. The danger here, as it seems to me, lies in the possibility of infectious material being carried by the water to parts previously free from infection.

By way of preparation for the operation the entire abdomen should be shaved and cleansed, and the cleansing process should extend on the right side as far as the spine, for there is always a possibility that drainage through the flank may be required.

McBurney has called attention to the advantages offered by an incision in the line of the fibres of the external oblique muscle, an inch or two internal to the anterior superior spinous process of the ilium, and long enough to enable one to gain access to the belly. The middle point of this incision should fall upon a line drawn from the navel to the anterior superior spinous process. The incision having been made, the external oblique tendon should be split in the line of its fibres and its muscular fibres should be separated in the same way. When the edges of this incision are well retracted, there comes into view the internal oblique and then the transversalis, with fibres running at right angles to the skin and external oblique incision. These internal oblique and transversalis fibres are to be separated by scissors or knife, but not cut across. By retracting these two muscle layers in opposite directions access is given to

the peritoneal cavity, and in many cases it is possible through this incision to operate satisfactorily. No fibre of muscle has been divided, and after the operation the integrity of the belly wall is restored. When suppuration has taken place outside of the appendix, and more room is needed, this incision can be prolonged to give sufficient room: first, by separating the external oblique fibres over a longer distance, the skin incision of course corresponding; and, secondly, by extending the (deep) transverse incision so as to divide the anterior and posterior sheaths of the rectus. The epigastric vessels are easily seen and are to be tied with two ligatures and then divided. The muscle itself is not to be divided, but is to be drawn toward the median line by retractors. By extending McBurney's incision, therefore, the surgeon will obtain ample room for further operative work, except perhaps in cases of exceptionally large inflammatory areas around the appendix. The fascia under the transversalis and the peritoneum are to be opened to an extent justified by the necessities of the case. Should there exist a periappendicular abscess in front of the cæcum, the connective tissue outside of the peritoneum under the transversalis will be edematous, and if the inflammation be great, edematous connective tissue will be noticed as soon as the tendon of the external oblique muscle is divided. When the inflammation is confined to the appendix, one or two fingers put through the peritoneal incision will enable the operator to hook up the appendix, which can be drawn into the wound and removed. There is no necessity for making a very small incision. If the excellent advice of McBurney in regard to separating, rather than cutting across, muscular fibre has been followed, the integrity of the abdominal wall is assured after operation.

I find the removal of the appendix is best done as follows: After it has been drawn into the wound, the peritoneal cavity is to be walled off by gauze and the meso-appendix tied off, if voluminous, in segments; if not voluminous, by a single silk ligature. The peritoneal and muscular coats of the appendix are next to be cut circularly at a distance of about one-fourth of an inch from the cæcum, but the incision is not to be extended through the mucous membrane. The muscular and peritoneal tissues are then pushed back, away from the mucous membrane, until the cæcum is reached. An assistant should now grasp this denuded cylindrical tube of mucous membrane by means of two slender artery forceps, while the surgeon makes the dividing incision between the forceps. The free appendix is then to be removed, and the proximal end, close to the cæcum, well touched with pure carbolic acid. The operator may tie the appendix stump, if he feels inclined, but patients seem to do as well without such tying as with it. The stump of the appendix is to be turned into the cæcum, and the peritoneal surfaces of the appendix cuff are to be brought together by means of a Lembert suture, thereby invaginating the stump. If there is any doubt as to what is the condition of affairs, the operator may pass a probe into the cæcum after removal of the artery forceps from the mucous membrane of the appendix, but this, it seems to me, is needless. The wall of the cæcum having been united over the invaginated appendix stump, the same Lembert suture is to be employed in closing in the stump of the meso-appendix. Nothing but peritoneum is then visible. The operator may apply additional sutures to the peritoneal surface, if he feels so inclined. As a rule it is my custom to do this. The wound is cleaned and wiped with gauze, and the gut is pushed back into the abdominal cavity. The peritoneum is then sutured with fine silk, and the two layers of muscle are united separately with silver wire or other material, as the operator prefers. Finally, the skin edges are brought together. Silkworm gut or silver is my preference here. When a periappendicular abscess exists, and I find it necessary to drain the cavity, I bring the ends of the gauze to the surface for drainage, and I close the edges of the wound lightly with layers of removable sutures; for when drainage is employed, my

buried sutures are apt to become infected and to give trouble, as drainage precludes absolute cleanliness. If the appendix is swollen and stiff and cannot be invaginated, it is a good plan to tie a string around the base, to cut off that part of the appendix which is distal to the string, and then to leave the string to come away with the gauze packing with which the abscess cavity is lightly filled.

It is very comfortable for the operator to know that the appendix has been removed and that that source of trouble is eliminated from consideration. Whenever, therefore, it is possible to do so, the appendix is to be taken away. But it cannot be done in a certain number of cases without serious danger to the patient; hence in such cases it must be left. Sometimes no trouble is ever experienced from an appendix which has not been seen; but in other cases it may be necessary to do a second operation for the removal of the appendix. An operation is incomplete without the removal of the appendix, but the incompleteness of the operation is less dangerous than is the search for the appendix and the consequent tearing up of adhesions, with possible general infection.

A second operation is undertaken when the inflammatory area is in a quiescent state. Secondary operations and those undertaken for chronic appendicitis are very successful. When general septic peritonitis is present, free opening of the belly is necessary, for the preservation of life takes precedence of every other consideration. Hence the opening into the belly will be effected by an incision sufficiently long to enable the operator to reach all the seat of disease. Pus and feces are to be evacuated; the whole peritoneal cavity is to be carefully cleaned, dry gauze or gauze wrung out in hot salt solution being used for the purpose; any lymph that may be present should be removed when possible; and it may be thought best (although I have not done it) to wash out the peritoneal cavity. Hot salt solution of course will be employed for this purpose. I think I have had as good results by using dry gauze, or gauze wrung out, as stated already, in hot salt solution. The places where pus must be sought for and removed are the following: the outer side of the ascending colon, below the liver, the pelvic cavity, the side of the rectum, and between the folds of the small intestine. If necessary, the intestines are to be taken from the belly cavity, wiped and cleaned outside, but much shock follows such evisceration. The pelvis is the region which specially requires to be examined and cleaned. After the peritoneum has been cleaned, I think the recovery of the patient is aided by laying large strands of gauze in every direction in the abdomen, as has been already referred to. The edges of the incision are to be left wide open. There is scarcely a limit to the number of strands of gauze which a general peritoneal infection may call for. It may be wise in some cases, in order to provide more direct drainage, to make an opening at the back of the belly through the lumbar region.

In general septic peritonitis the bowels usually refuse to act, and, when this is the case, it may be well, as was first suggested by Dr. McCosh, of New York, to inject into the upper part of the small intestine, before the abdomen is closed, a couple of ounces of Rochelle salts dissolved in water. In order to accomplish this it will be necessary first to pass a small cannula through the intestinal wall. Then, after all the solution has been injected, the hole made by the cannula can be closed by a single Lembert's suture.

Operation for Chronic Appendicitis.—The best time for operating, in a case of recurrent attacks of appendicitis, is during the interval between two attacks, say two or three weeks after the subsidence of the first of these two, provided it has not been an attack of unusual severity. In the latter case the operation should be deferred for a somewhat longer period. The reason why an operation should not be done sooner is that sufficient time must be allowed to elapse in order that any periappendicular lymph may be absorbed, that any pus that may have collected within the appendix may have time to escape