the plain vesicular type he had. He has made it a rule in infants under 6 years of age not to interfere.

Another interesting case showed the effects of Unna's thiosinamin soap on a scar caused by fire. He also exhibited cases of infantile eczema which he called reflex eczema, a term for which he has fought during the last ten or twelve years. It is most common in boy children, and disappears after circumcision. If it occurs in girls regulation of the diet seems to favor its disappearance. The chief thing is to find the cause and eliminate it, then the simplest sort of treatment is effective.

Other cases of infantile syphilis, pediculosis lesions, psoriasis and chloasma in a colored person were also exhibited.

LIMITATIONS OF NON-SURGICAL TREATMENT IN ACUTE INTESTINAL OBSTRUCTION.*

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The term "acute obstruction of the bowel," broadly used, embraces all of those conditions, however varying in their etiology and pathology, which suddenly obstruct the lumen of the intestine to the extent of interfering with the passage of its contents. It is well known that the intestine may be obstructed by omental bands, fibrous bands, the result of peritoneal adhesions, as in appendicitis or peritonitis (*ante et post operationem*), by Meckel's and other diverticula, or at the neck of an internal or external hernia; that it may become kinked or twisted as in volvulus; that one segment of the intestine may become telescoped into a neighboring segment, as in intussusception; that the lumen of the intestine may be obstructed by gallstones, enteroliths, foreign bodies or its own normal contents; that it may be narrowed by pressure of tumors from without; that its lumen may be narrowed by benign or malignant strictures, or by the pressure of neoplasms or acute swellings arising within its own walls, and by the presence of embolism or thrombosis of the arterial or venous circulation of the bowel wall. Symptoms of acute obstruction may also develop suddenly in cases of malignant, syphilitic or gonorrheal stricture.

In all of the above enumerated conditions the obstruction may be said to be purely mechanical. Cases of apparently purely functional closure of the intestine—intestinal spasm—are recorded. Heidenhain and others report a few cases of purely spastic or reflex tonic contracture. In Heidenhain's cases, the contracture seemed to be complete and irreducible. Quintard¹ collected fourteen such cases from the literature. Quintard's list is doubtless incomplete, but nevertheless cases in which complete contracture of the intestine is thus brought about by reflex irritation must be quite rare. Perhaps operation and very careful direct ocular examination in these cases would have left fewer of them recorded as of purely reflex origin. It is well known, however, that the syndrome known as ileus, as a purely reflex phenomenon, may attend or be consequent upon torsion of the pedicle of an ovarian tumor, or pinching of the spermatic cord, and that in an inorganic or functional form it may be due to ptomain poisoning or to dysentery or other inflammatory conditions in the large or small intestine. No one knows how many cases of reflex or functional interference with the procession of the intestinal contents have been included in the list of cases of

mechanical intestinal obstruction cured by internal therapy.

If a surgeon, speaking from the standpoint of a limited personal experience and observation, may assume to enumerate the forms of acute obstruction of the bowel which may be cured by internal medication, the writer would include the following: First, simple coprostasis. It should be borne in mind, however, that behind the picture of simple impaction may be hidden deep strictures benign and cancerous, or compression of the colon from without by adhesion bands, etc.; second, cases of incomplete stenosis of the small intestine from chronic peritonitis. Heidenhain states that many of these cases are cured by thorough and repeated rinsing of the stomach, the use of enemata and proper dieting; third, volvulus of less than 180 degrees when involving the colon; fourth, reflex closure of the intestinal lumen. Medical treatment of reflex ileus is not only valid, but it is our best resource. The preparations of hyoscyamus are useful agents in this form of obstruction. A single hypodermic injection of morphin may, by one brilliant stroke, efface every symptom of a violent reflex ileus, as noted by Dr. Hugo O. Pantzer of Indianapolis. It is in ileus of the reflex type alone, however, that morphin is useful, and even in cases strongly suspected of being of reflex origin, the administration of morphin or antispasmodics should not be continued too long; fifth, functional obstruction due to dysentery or other ulcerative and irritative processes, such as ptomain or lead poisoning. In such cases the cause of the ileus may usually be removed by non-surgical methods; sixth, intussusception of the colon during the early stages.

Körte has called attention to the fact that the symptoms of incarceration of gallstones are often so similar to those of a suddenly developing ileus with obstruction of the bowel, that a mistaken diagnosis of stricture or volvulus may have been made. Celiotomy is clearly indicated in such cases. Cholelithiasis is, as is well known, a surgical disease, notwithstanding it is not necessarily fatal, and is occasionally amenable to medical treatment. The ileus produced by it should be relieved by surgical removal of the cause.

No doubt in very rare cases invagination has been reduced by the forced introduction of air into the rectum, or by high colonic injections of water, but that the vast majority of these cases must be given over to the surgeon, is, or should be, well known. A volvulus of 180 degrees in the first stage of the disease may be reduced by air or water; however, in cases of volvulus reaching 250 or 300 degrees, it becomes impossible to inject water into the closed-off segment. The stenosis is complete. No one would presume to be able accurately to estimate the amount of twisting of the bowel in any given case before operation, or to specifically diagnose volvulus at all. As for internal stenosis due to organic stricture, it is hardly imaginable that such a case could be successfully treated by other than surgical means, and it is generally taken to be undebatably concluded that obstruction due to bands, diverticula, strangulation of herniæ and the presence of neoplasms must be dealt with surgically.

It would be obviously very difficult accurately to determine the number and character of cases spontaneously relieved or cured by non-surgical means, since after the subsidence of symptoms and cure of the patient, the abdomen not having been opened, the nature and cause of the trouble must remain in the dark. We find ourselves here on the ground of pure hypothesis. We know how difficult it is to determine the exact nature of an

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. J. M. Anders, Frank A. Jones and W. S. Thayer.
1. Murphy, *Prac. Med. Series*, 1901.

obstructing intestinal lesion by consideration of the external signs and subjective symptoms alone.

In cases of definitely diagnosed mechanical obstruction of the intestine of any sort, there are few surgeons who, with instruments at hand, would adopt any less radical measure than that of operation. The non-operative methods of treatment may, under very extraordinary circumstances, be used in mechanical obstruction by one who, for various reasons, feels that he dare not open the abdomen. For one, however, with proper surgical means at his disposal, to stand by with folded hands, or deal with these cases by the so-called palliative means, requires upon his part a reckless degree of indifference indeed. The palliative means are nearly always ineffectual in cases of mechanical obstruction, are often deceptive in their effects, and are never free from danger.

Even very young children stand abdominal operations remarkably well, and there is no reason why a celiotomy, if indicated, should be withheld from an infant, even if it be only a few days old. Here the methods of inflation and injection are not devoid of danger. Knaggs reports eight instances of fatal injection. In seven of these ruptures occurred. In one case, that of a young infant, only nine ounces of water were injected when a rumbling noise was heard in the abdomen, which was immediately followed by death. (Maylard.)

It will appear to any one familiar with the anatomico-pathologic nature of the condition that the reduction of intussusception of the small intestine by the injection of water or air will hardly be possible after the onset of symptoms. It is doubtful whether in the adult it is possible to force water through the ileocecal valve. In the cadaver this may be done. Here the valve may leak, but it should be remembered that this phenomenon, though it may be demonstrated by the use of force in the cadaver, can hardly be produced in the live subject.

It must be conceded that in acute intussusception, the lesion being almost always in the small intestine, little can be gained by the injection of water. Irritating enemata may stimulate peristalsis in the lower intestine, and the movements may in some degree be transmitted to the small bowel. This will hardly suffice to release the intussuscepted small intestine if sufficient time has elapsed for the establishment of a clinical diagnosis. For by this time the intussuscepted bowel will have become quite thickened and choked, or even gangrenous. The employment of massage or taxis blindly through the abdominal coverings has never accomplished anything in any case of intussusception of which the writer has any personal knowledge. The toughness of the adhesions between the layers of the intussusceptum and the sheath or intussusciptions and the rapidity of their development are extreme.

A few cases in which symptoms of intussusception had existed for from six to nine days have been, according to reports, relieved by the combined conservative methods. The Almighty only knows how many thousands have been lost through the employment of these so-called, but misnamed, conservative methods. Operation will conserve the lives of a certain small percentage of cases of intussusception. It represents, therefore, in the strictest sense, conservative treatment. Many cases of successful excision of acute intussusceptions have been reported, and in many more cases lives have been saved by the employment of the at once less brilliant and less dangerous methods of operation.

A favorable result sometimes follows irrigation of the stomach and colonic injections of water, or insufflations

of air. The physician permits himself to be deceived by the comparatively good condition of the patient, and the operation is postponed until the patient is moribund, when an operation is allowed and surgery is charged with a mortality.

Successful treatment of intestinal intussusception is only possible by operation performed early, while the panites is still slight and the patient is in relatively good general condition. Later, distension of the intestine becomes so great that often, with the abdomen opened, the most careful and zealous surgeon can not find the obstruction at all.

It would be well if there were unanimity of opinion among surgeons and physicians as to the proper treatment of a malady in which the mortality is not less than 75 per cent.

Laparotomy in such a case is always a dangerous operation, but the disease unoperated is distinctively more dangerous.

Nature has shown us the way to deal with intussusception. When, as rarely happens, she effects a cure, she does it by sloughing and gangrene and discharge of the intussuscepted segment through the bowel. It may seem quite superfluous for one to declare at this day the necessity for prompt diagnosis and prompt operation in cases of intestinal obstruction of this character. But the fact is that physicians, as a rule, are not promptly making differential diagnoses in these cases, nor operating them until the patients are in *extremis* with subnormal temperature, flickering pulse and abdomens blown out as tightly as a snare drum.

Already many successful operations for intussusception in young children are recorded. Karsberg² operated on a boy 3 years and 9 months old, with invagination of the ileocecalis subchronica with complete success. Bryant³ describes a case of acute double intussusception in a girl baby of 9 months, operated on twenty-four hours after the onset, with rapid recovery. A. B. Mitchell⁴ describes a case of retrograde intussusception in a boy 4 months old. It was reduced by operation thirty-six hours after the appearance of symptoms and recovery followed. Wright and Renshaw⁵ reported successful operation on a 3-year-old child with invagination of the appendix into the cecum, and Eve⁶ successfully operated on an intussusception at the ileocecum in a baby. Poppert of Gies⁶ saved an 8-months-old child with intussusception by prompt operation, and Sells⁶ also operated successfully on an infant 4 months old, 18 inches of the ileum having passed through the ileocecal valve. Several dozen similar cases have been reported. Northrup⁶ on the other hand, reports relief of a child seven months old with intussusception by high colonic injections of water, and Ouvry⁶ successfully treated a case of acute colonic invagination in a male infant 9½ months old by catheterization of the invaginated bowel.

The surgeon, however, will ask, with a shrug, whether these and other similarly palliatively treated cases were really intussusceptions. Relief in Northrup's case followed free movement of the bowels and the only indications of intussusception were a sausage-shaped tumor under the liver and bloody dejections.

Fitz's statistics give fifty-one cases treated without operation, with sixteen recoveries and thirty-five deaths (69 per cent.). Pilz reported in 1870 ninety-four cases in patients under 1 year, with a mortality of 84 per cent.

2. Hospitaltidende, 1896, No. 5.

3. Lancet, Oct. 12, 1901.

4. British Medical Journal, June 12, 1897.

5. Lancet, Aug. 31, 1901.

6. Gaz. Hebdomadaire, June 20, 1901.

From 1870 to 1891 135 cases in patients under 1 year gave a mortality of 59 per cent.⁷ More recent statistics would show a much smaller percentage of mortality after operating, as the result of earlier and more skillful surgical intervention.

A case of invagination reported by Jaboulay⁸ is instructive, for the reason that no operation was made, and the autopsy showed that surgery would doubtless have saved the patient's life. The case was received into the clinic forty-eight hours after the appearance of symptoms. There was no stercoraceous vomiting. On the following day there were bloody stools. Operation was withheld because it was assumed that after seventy-two hours the vitality of the intestine must be practically lost, and, moreover, the lesion could not be accurately located. Administration of opium was followed by improvement, then the symptoms grew steadily worse. At the autopsy on the tenth day there was found a high intussusception (about 18 inches from the stomach) which was readily released by delicate traction. The intestine was in relatively good condition.

When considering operation, it often becomes a difficult matter to determine whether a given condition of ileus has been mechanically produced, or produced by peritonitis, for it is well known that the most vicious peritonitis may proceed without fever. Lejars has called attention to the fact that tubercular peritonitis may produce all the phenomena of intestinal obstruction without the slightest mechanical obstruction being present. Here the doubt should weigh in favor of operation for since the operative treatment of peritonitis promises relatively good results, the operation is therefore specially indicated. In point it may be mentioned that Turner⁹ operated on a case of obstruction due to tubercular peritonitis with prompt recovery and rapid disappearance of the peritoneal tubercles.

Volvulus or twisting of the intestine is a comparatively rare cause of obstruction. There are, in most cases, no symptoms sufficiently distinctive to admit of differentiation from obstruction due to other causes. Were it possible to diagnose these cases, they would in the very nature of their development and formation lend themselves rather favorably to treatment by abdominal taxis, or if in the colon, to treatment by injection or inflation. Rigorous shaking with manipulation of the abdomen, and stimulation of peristalsis by enemata may rarely untwist the involved gut. As a matter of record, however, it is rarely indeed that anything avails in severe cases except operation, and the same rules regarding early operation should apply here as apply in cases of mechanical obstruction of other forms.

The direct untwisting of the volvulus before great thickening and destructive changes have taken place in the obstructed part is often comparatively easy. A few days will place its reduction beyond the highest skill of the surgeon.

In early operation lies our greatest hope in all cases of mechanical intestinal obstruction. Naunyn collected from the literature 288 cases of operation for ileus. From the record of these cases it appears that by far the best results were obtained after operations on the first or second day after the beginning of symptoms. Results of laparotomy for intestinal obstruction in individuals suffering from hernia were particularly fortunate. These were, of course, not cases of incarcerated hernia, but cases of ileus as the result of stasis, adhesions

and torsions in the neighborhood of the hernial openings.

The reason for the surprisingly good results in these hernia cases is to be sought in the fact that the operators knew where to look for the obstruction, and operated early. This fact forcibly impresses one with the value of accurate localization of the obstruction before operation, and early operating. The fact seems to stand forth in very clear light that in all diagnosticated cases of mechanical obstruction, and all cases in which there is doubt as to the nature of the obstruction, the so-called conservative methods, the administration of morphin, stomach lavage, injection and inflation of the colon are not only almost valueless, but often really dangerous. Morphin is especially treacherous. In giving it we "fall back upon the soft pillows of Providence," in most instances stultified and deceived, awaiting the messenger with the inverted torch.

In paralytic reflex ileus following abdominal operations, it must be conceded that the expectant plan of treatment is the better to follow. Unfortunately, it is not easy to distinguish this form from mechanical ileus; moreover, the former may develop into the latter. Here, again, doubt must weigh in favor of operation.

Post-operative adhesions producing obstructions must be dealt with promptly by reopening of the abdomen. In such adhesions are assumed to be present when oil and salts in generous doses fail to pass the intestine, and high colonic injections administered by one who really understands how to fill the colon with water fail to give relief.

The value of laparotomy as a purely diagnostic measure should not be underestimated. Notwithstanding Treves, Maylard and others have laid down very useful rules and precepts for differential diagnosis in intestinal obstruction, it is nevertheless very well known by those who frequently deal with these cases that the exact nature of the lesion is rarely made out before anesthesia has to some degree relaxed the abdominal wall, and usually not until the abdomen has been opened and the cavity explored.

In addition to the great number and variety of conditions which are well known as causes of intestinal obstruction, there are many which we would hardly consider as common causes of acute ileus, yet they are causes, and they are purely surgical conditions, and can be dealt with in no other way. For example, a case of obstruction due to cyst of the ileum and cecum is reported by Hochenegg, and Magnoux reports a case of invagination due to the presence of a myoma. This author collected from the literature reports of eleven cases in which this condition was caused by myoma. Morison records a case of obstruction due to polypus of the small intestine.

Neoplasms of the intestine may suddenly produce symptoms of obstruction of the bowel without previous warning. It is probable that in such cases hypertrophy of the muscularis above the obstruction compensates for the narrowing of the lumen, but with the lodgement in the constricted segment of some unusually large or hard mass of intestinal contents, an acute fulminating ileus suddenly develops. The sudden appearance of ileus does not always mean that a recent lesion is the cause.

It has been said by Treves that in ileus too much prominence must not be given to the mere circumstance that the bowel is obstructed, that to be sure obstruction of the bowel is often the prominent symptom, but not the sole basis upon which the malady depends. It can hardly be denied that the issue of a given case will

7. Fischer, N. Y. Med. Jour., Feb. 21, 1903.

8. Province Med., 1896, No. 5.

9. Lancet, April 12, 1902.

depend more or less directly on the length of time during which the intestine has been obstructed, regardless of whether the intestine be strangulated or plugged with its own contents. But mere plugging will not often produce the classical condition of ileus. The bowel may be completely plugged for weeks, and the patient make a good recovery. If, however, the intestinal wall be strangulated, its circulation blocked, the symptoms immediately become urgent. Here we must think of "strangled vessels," and beginning gangrene. Unfortunately, we too often confuse these cases of strangulation with mere obstipation or impaction.

It should be borne in mind that the condition of ileus with strangulation of the bowel is very rarely produced by mere plugging, and that when the symptoms of genuine ileus appear, nine times in ten the time of usefulness of the syringe and the enema is gone. I would not place a low appreciation upon the colonic douche. Its proper use requires brains and art and patience, and in no case should radical surgical means be considered until the colonic douche has been faithfully tried, but as a rule lavage of the stomach, inversion of the patient and colonic injection of oil, air and water are at best only palliative. Capillary puncture, abdominal massage and the administration of opium are perilous and reprehensible in practically all cases. With prompt diagnosticating, prompt operating and better operating the mortality will be steadily lowered.

It may be said that, as a rule, the urgency is not so great in obstruction of the large intestine as in closure of the small gut. In the former sedatives, hot stupes, taxis and enemata may be justly employed for a longer time than in the latter.

To some it might seem unnecessary to urge the necessity for early operation in cases of intestinal obstruction with ominous symptoms. This excludes mere obstipation, for the reason that impaction *per se* does not produce severe symptoms, as before observed, but physicians, for the most part, are for some reason not recognizing intestinal strangulation promptly enough, except it be consequent upon sudden descent of a hernia, and are not promptly advising operation.

It is a dangerous surgeon who counsels operation merely for the sake of operating, and who would operate in a "stable with a pocket knife," but he who bears the name of surgeon, and who is adequately equipped, and can provide a reasonably aseptic environment, but who stands by with folded hands, resigning these cases to Providence and the rectal douche, is ten times more dangerous. The surgeon who does not realize the limitations of his art is a dangerous man indeed, and he who is not aware of its possibilities is useless. But no man is more dangerous nor more useless in his community than the physician who would cling to a case of mechanical strangulating intestinal obstruction which he has been unable to accurately diagnose, and which he has not the facilities nor the intrepidity to treat in the only way which avails, that is by operation.

Abuse of the Medical School at Zurich in a Novel.—A Swiss authoress has written a novel which claims to portray the life of a medical student at Zurich. It is abusive in tone and has aroused much indignation. Professor Krönlein has written to the daily press explaining away the misconceptions, and a mass meeting of the students was held to protest against the statements in the book. The writer was a student in the literary course at the university. Her novel has been widely advertised by the protests, which is perhaps what she intended.

BACILLARY DYSENTERY (SHIGA).*

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GENERAL REMARKS.

Dysentery has been, from the earliest times, a disease of great importance, and especially has this been the case in the tropics and in the camps of great armies in the field. My own impression, gained from something over two years' service in the tropics, is that intestinal disorders far outnumber all other diseases, and that, of these, dysentery is of overshadowing importance, both on account of its high rate of mortality, and because of the invaliding which results from it.

In the medical history of the War of the Rebellion something over 259,000 cases of acute dysentery and 28,000 cases of the chronic type are reported to have occurred in the Federal Army alone; and, again, during the Spanish-American War the same disease played havoc among our troops in Cuba, Porto Rico and the Philippines; in the South African campaign it was widely prevalent.

In the tropics it is endemic at all times, and its importance may be gathered from the observations of Strong that of 1,830 cases in soldiers admitted to a hospital in Manila in sixteen months, only one-third returned from there to military duty, and that the deaths from dysentery in the Army in the Philippines were nearly four times as great as from any other single disease.

For many years an epidemic form of bacillary dysentery has prevailed in Japan in the late summer and fall; in 1899, there were some 130,000 cases, with more than 26,000 deaths.

The disease occurs all over the world, increasing in frequency and importance the nearer we approach the tropics. In the temperate zone it occurs sporadically at times assuming an epidemic form, which, even in cold climates, may be widespread and fatal; and this is especially apt to be the case in institutions such as insane asylums, or other places where there is overcrowding and bad hygienic conditions. Dysentery is especially a disease of the late summer and autumn, and in the tropics is most prevalent toward the end of the rainy season, though it occurs at all seasons. Age and sex have apparently no other influence than that resulting from the greater exposure incident to the life of the male adult.

ETIOLOGY.

The dysenteries have been variously classified from an epidemiologic, clinical and pathologic-anatomic ground, and the varieties described by different authorities have been as numerous as their points of view.

On the one hand, some writers believe in the essential unity of all the dysenteries, while on the other it has been held that many forms of bacteria and several varieties of amebæ were each responsible for a particular form of the disease. Since the discovery by Losch, in 1875, of amebæ in the stools of dysenteric patients, these organisms have been regarded as the cause of tropical dysentery by many authorities. Between that date and 1897 nearly all the varieties of intestinal flora have been accused of being the causative agents of dysentery; but it was not until the latter year that Shiga, studying an epidemic of acute dysentery in Japan, was able to demon-

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