NON-SPECIFIC ULCERS OF THE ALIMENTARY TRACT*

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IN the course of a large number of autopsies, a variety of ulcers are seen in the alimentary tract that do not have the characteristic gross appearance of any known specific ulcer. Bacteriological examinations for the determination of causal organisms fail to indicate an infection by any of the usual agents. Chemical examination does not show the presence of any poison, and histological examination of the ulcerated or inflamed areas fails to show any characteristic cell picture.

There is another group of autopsies, in which the clinical history is very strongly suggestive of a specific lesion, but the autopsy findings are very variable and quite unlike the changes usually noted with the specific infections. This group is of great clinical importance from the point of view of the treatment of such cases.

The third group, which will not be considered in detail in this paper, is the group of non-specific ulcers caused by obvious pathological processes like embolism, chronic obstruction, or a neighbouring acute inflammation like appendicitis or salpingo-oophoritis. Non-specific ulcers may also occur as a result of chronic congestion and œdema of the intestine, either in atrophic cirrhosis of the liver or congestive cardiac failure. Although these last are of very little significance from the point of view of pathologists, the symptoms of diarrhœa and blood and mucus in the stool sometimes continue for several weeks and in a few cases dominate the clinical picture at the time of admission to the hospital. In cases of congestive failure with obvious auscultatory changes in the cardiac area, the secondary nature of these symptoms is easily recognized, but in cases where there are no valvular changes, and particularly in cases of cirrhosis of the liver, the diarrhœa and blood and mucus have led the physician to suspect primary dysentery leading to nutritional œdema.

Non-specific ulcers of the alimentary canal, when considered in their strict pathological definition, thus form a very large and rather indeterminate group. Very often it is felt, that the failure to find a specific cause is more the result of the technical difficulties of investigation, than of a real non-specificity of the causal agent. Most of the workers in the autopsy room are familiar with the difficulties regarding the delay between the death and the autopsy, the difficulty of preventing contamination, the difficulty of a follow up by animal experiments, and the vagaries of serological diagnostic tests.

While the pathologist with his more rigid criteria oscillates between the two extremes of either accepting too many lesions as non-specific, because the specific cause could not be determined, or deliberately including all lesions in one or the other specific group with which the lesions had some similarity, the clinician definitely accepts the group of non-specific enterocolitis as a clinical entity with certain characteristic symptoms, signs, radiological findings and lines of treatment. Crohn *et al.* (1932) were the first to establish this disease entity.

The attention of the writer was first drawn to this group by the description of signs, symptoms, and the morbid changes in the colon, in a group of cases described as chronic non-specific non-ulcerative colitis, in a short article in the Leibieg Anniversary volume. The cases are of a type often met with here, both in clinical practice and in the autopsy room. The patients are middle aged; they have a chronic diarrhœa, with occasional periods of passage of blood and mucus; there is a moderate anæmia, œdema round the ankles, and a hint of ascites. Repeated stool examinations fail to show any specific agents. In a few cases on which autopsies are performed, the major change is in the rectum and the ileum. The colon is very slightly if at all affected. The rectum often forms a thickened rigid tube with irregular lumen and small fistulæ running into the neighbouring connective tissue, only for a very short distance. The fistulæ do not give rise to peritonitis or ischio-rectal cellulitis. The ileum shows a diffuse or patchy thinning of its walls. It is tempting to call such condition a variety of sprue, or bacillary dysentery. But most of the cases have had several lines of treatment for sprue and dysentery without any success. In the article mentioned above, a vaccine treatment had been described. The vaccine treatment will be referred to, in considering the bacteriology of this condition.

A number of articles have appeared recently in the surgical journals describing acute segmented inflammations of portions of alimentary canal, describing these as acute regional jejunitis, ileitis, or colitis. At the same time a series of similar cases were encountered in the autopsy

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(*Continued from previous page*)

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room. These were studied in detail and form the chief material for this paper.

In going over the autopsy records of the previous years, a number of suggestive case reports were met with, but the descriptions of the condition of the small intestine and colon were not sufficiently clear as to the exact position and distribution of the lesions, and in many cases a diagnosis of chronic bacillary dysentery was put down. In cases with chronic symptoms, both the symptoms and the autopsy findings were exactly like the ones described above. A number of cases with fistulæ and fibrosis of the rectum have also been recorded. But the diagnosis is not clearly set down. Gummatous inflammation of the rectum is considered to be the most probable condition. There is one museum specimen in which the diagnosis is left open.

As the acute condition was not recognized as a separate entity, there is no mention, and no detailed description of any lesions in the small intestine which can be construed to be regional enteritis.

Since 1937, the writer has been able to collect forty-four cases of non-specific inflammations of the alimentary canal. The distribution of the lesions was :—

	Acute	Chronic	Total
Œsophagus ..	8	5	13
Jejunum ..	3	0	3
Jejunum and ileum	4	? 1	5
Ileum	4	? 2	6
Mesenteric glands	4	..	4
Colon	6 plus ? 2	? 2	10
Rectum ..	3	7	10

Of the lesions included in this group, the inflammation of the œsophagus is not strictly speaking a part of the regional enteritis as a clinical group, but they can be included in the group of non-specific inflammations of the alimentary tract.

In the case of the colon and rectum, the writer does not feel satisfied that the number is really representative. This doubt is felt for two reasons. Two of the ulcers were associated with septic endometritis and one with ulcerative endocarditis. On the other hand, a large number of ulcers of the colon appeared to have the mixed characters of amœbic and bacillary dysentery, but no amœbæ could be found in the scrapings or sections and no bacilli of the lactose non-fermenting type could be obtained in cultures. These cases should have been included in the group. Still, because of the similarity with standard lesions, such ulcers have been definitely excluded from the group of non-specific ulcers. For this reason the group of regional colitis is not satisfactorily represented in this series.

The cases of chronic ileitis and jejunitis are also more interesting from the clinical viewpoint than as well-defined pathological entities.

Ulcers of œsophagus

Acute non-specific ulcers of the œsophagus were found mainly in the neighbourhood of the tracheal bifurcation. In two cases they were multiple, in the rest single. The ulcers were longitudinal in one case; in the rest, they were transverse. In all cases they had raised edges infiltrated with blood. The bases were free from slough. Histologically, a moderate amount of leucocytic infiltration was considered to be a necessary condition for considering the ulcers as inflammatory. Lyall (1937), who had studied a series of such ulcers, considered that an aberrant gastric mucosa was found in a majority of these ulcers. In the present series aberrant gastric mucosa was found in only one ulcer. Lyall also found associated peptic ulcers in half his cases. In the present series there was no associated peptic ulcer. All these ulcers were found incidentally. It is not possible to say whether there were any clinical symptoms.

Chronic inflammations of the œsophagus were chiefly found in cases of anæmia. Four were non-ulcerative in type, one was a chronic ulcer. Of these chronic conditions, four were found in females and one in a male. Definite symptoms of dysphagia were found in one; in two there was pain and vomiting and rapid wasting; in the other two, no clinical manifestations were noticed. In the case of chronic dysphagia, the lower half of the œsophagus was dilated in a fusiform shape, the walls and the mucous membrane were thickened, silvery grey in colour and thrown into irregular folds. The cardiac sphincter did not seem to be thickened, or ulcerated. The stomach was a little smaller. There was no ulceration or growth in the stomach. On section, the œsophagus showed a well-marked increase in the submucous connective tissue. The connective tissue was hyaline and showed small collections of mononuclear cells. There was no hyperplasia of the epithelium. The condition could not, therefore, be considered as precancerous.

The other three cases showed a thickened stiff œsophagus which was narrowed and tortuous rather than dilated. The stomach in all these cases also was free from peptic ulcers or growths.

The chronic ulcer was found to be just above the cardiac end; the edges were so much thickened as to suggest malignancy. The edges, though thickened, were not everted, but shelving towards the base. Sections showed non-specific chronic inflammatory granulation tissue. There were syphilitic manifestations in other organs.

Acute jejunitis and ileitis

The chief characteristic of these lesions is a segmental distribution and simultaneous involvement of all coats in the segment affected. On opening the peritoneum, portions of congested intestine are seen to alternate with portions of normal-looking intestine. Sometimes only one small length may show congestion. Seen at the

earlier stage, the appearance suggests a post-mortem artefact, but the presence of hæmorrhages on the serous coat, and usually also red, swollen mesenteric glands, suggest an enteric infection. Seen at a late stage—it seems to be a late stage—the massive congestion suggests infarction due to mesenteric thrombosis.

On opening the intestine, there is a well-marked hæmorrhagic infiltration, which may be in patches or diffuse, and the mucous membrane is necrotic in patches, which are raised up into everted, greenish folds, or round areas. Removal of mucous membrane and formation of undermined ulcers was considered to be against the condition being a non-specific inflammation.

The Peyer's patches were occasionally the seat of hæmorrhage, but did not show the primary swelling and ulceration, nor the pattern of dilated vessels converging towards them, seen so well in enteric infections.

The chronic lesions were not so distinctive. In four cases they consisted of punched out circular or transverse ulcers more in the jejunum than in the ileum. The ulcers did not show any tubercles at the edges, or on the serous coats. The white radiating lines in the serous coat, so characteristic of tuberculous ulcers were not present. Histological examination failed to show any tuberculomata. Strictures and hypertrophic thickening are described by several authors under a variety of names, but in this series no well-marked strictures or thickening were noticed.

The other chronic type of lesion was found in comparatively young persons, between the ages of 20 to 30 and in this group also females predominated over the males, 5 to 2; in these, symptoms of diarrhœa, wasting and anæmia were present in four. In two, operations were done for acute abdomen, although there was a history of pain in the abdomen for more than a month.

In these cases, portions of ileum showed a uniform thinning of all coats. The mucosa was covered with an excess of mucus over the thinner areas and while wiping away the mucus, fragments of mucosa were also dislodged. There was no congestion, but in the drainage area of the part one or two sentinel mesenteric glands were found, which were red with yellowish spots, but without any definite pus. Microscopic examination showed lymphadenitis with focal cloudy degeneration.

Although mesenteric glands have been mentioned separately in the table, they were not found as an isolated lesion, but had accompanied either acute or chronic enteritis.

Regional colitis

As explained previously, the number of cases included in this group is more probably too small than too large. In the acute group, only those cases are included in which there was either a simultaneous involvement of the colon and small intestine, or the primary condition of the colon had given rise to other infective foci in which non-specific organisms were found.

While the lesions in the small intestine were similar to those described by other writers, the lesions in the colon were not of the standard type. The best description of the colon is given by Burke in describing a group of cases, as phlegmon of the colon. 'The involved portion varies from greyish red to purple in colour. The serosa is covered with fibrinous exudate. The bowel feels doughy'.

The lesions in the colon were either circular bands of necrosis with raised everted hæmorrhagic margins or round ulcers which differed from those of amœbic dysentery in being raised and everted with greyish coagulated sloughs. The edges were not undermined. The patchy distribution and the round shape, instead of serpiginous outline, were the points by which the ulcers were distinguished from those of bacillary dysentery.

The chronic regional colitis was of the standard type, segments of pelvic colon and rectum being chiefly involved, and thickening and fistula formation being the chief abnormality. Histology was characterized more by absence of any specific appearance than by the presence of a characteristic cell picture.

Symptomatology

The age distribution of regional enteritis is, as might be expected, quite wide. The fact that a large number of cases were less than 40 years of age is more probably due to the fact that the majority of autopsies are done on persons of this age group. At the same time this age distribution must be considered to have some significance, because several authors, such as Clark and Dixon, have found that the majority of surgical cases in the wards are also from this same age group. Sixty-three per cent of Clark's cases were less than 30, and 84 per cent less than 40 years of age.

In the present series the age distribution was as follows :—

0 to 10	2
11 to 20	4
21 to 40	17
41 onwards	8

There is no specially significant sex distribution of these lesions, although in the present series the females were comparatively more commonly affected.

Amongst the thirty-one cases, females were eight and males twenty-three; the symptoms and duration differed according to whether the condition was acute or chronic. In the acute cases, the duration was between 2 to 10 days, and the symptoms were either those of acute abdomen, with or without a lump, of food poisoning, or of enteric fever. In the acute cases laparotomy was done in three instances.

The following symptoms were met with in the chronic or recurrent cases :—

Pain in the abdomen	..	.. In all cases
Diarrhœa	.. ..	.. „ 15 „
Anæmia and wasting	..	.. „ 9 „
Fistulæ	.. ..	.. „ 5 „

Radiological investigations were not carried out on any of these, but in the surgical and radiological journals, a tape-like appearance, narrowing and absence of haustrations are described as characteristic findings.

Ætiology

In studying the ætiology, both positive and negative findings must be considered as of significance.

The ætiology of this condition must be considered under two heads : the bacteriological findings and the possible predisposing factors.

In every case of this type, scrapings from the ulcers were examined for amœbæ. Culture of the scrapings was done on Endo's medium. A culture from the heart-blood and from the bile was done on glucose broth. Triple Widal was done with blood from the jugular vein. Only when these cultures and serum reaction failed to show any of the specific organisms giving rise to inflammation of the intestine, were the cases included in this group.

The presence of tuberculous foci elsewhere was also looked for, and, if present, smears from the affected portions of the intestine and neighbouring lymph glands were examined for acid-fast bacilli. Mayo considered that an acid-fast bacillus allied to the bacillus of Johne's disease in cattle is an important causal agent, but, in the present series, if acid-fast bacilli were found, the cases were rejected as those of tuberculosis of the intestine.

The positive findings in this series were *Bacillus coli* from an accompanying meningeal exudate from one case of acute ileitis, and streptococci from two heart-bloods. In one case, there was erysipelas and in another the chronic fistula had given rise to a psoas abscess and pyæmia.

Among the predisposing factors, the presence of worms was given special attention, but it was found that the worms were not more frequent in this group than in the other routine autopsies. In the few cases in which round worms had produced severe disturbances, acute or chronic ileo-colitis was not prominently present.

Anæmia was present in a comparatively large number of cases, but it seemed more often the result than the cause of this condition.

Observations on the bacteriological findings in these cases are given by a large number of writers. Some are based on the appearance of bacteria in stained section which cannot be given much importance.

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Examinations of the contents of resected loops by cultural examinations have given more reliable information. Monroe (1937) gives the following frequency with which various organisms are met with :—*Bacillus coli,* Bargen streptococci, hæmolytic coli, *Streptococcus viridans,* Salmonella, Gram-positive diplococci, *Bacillus alkaligenes.*

Bargen and his co-workers have investigated rectal swabs of a number of cases. Bargen has given much importance to a special variety of streptococcus. Like the work on streptococci by Rosenow this work has met with very adverse criticism by most writers.

A further detailed study of the coli-like organisms has been done with eosin-methylene-blue medium and a number of organisms have been also studied regarding their action on blood.

Christopher has studied a number of cases of ileo-colitis and is of opinion that amœbiasis plays an important rôle in the earlier stages of the condition. Later, the amœbæ disappear and that is why emetine or other anti-amœbic lines of treatment do not cause any improvement.

Felsen considers that bacillary dysentery may play a similar rôle and this writer examined the sera of such persons for agglutinins. The presence of anti-dysentery phages in the stools of these persons was considered by Felon, as evidence of the bacillary origin of this condition.

The bacteriology of this condition is thus in need of further detailed investigation.

Summary

A description of non-specific inflammations of the alimentary canal based on forty-four cases is given. Thirteen were lesions of the œsophagus, and thirty-one of regional enteritis.

The characteristic pathological appearance of the lesions is described. The chief symptoms were of two types, according to whether the lesions were acute or chronic.

The ætiological factors have been reviewed.

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NOTES ON COMMON SKIN DISEASES

II. RINGWORM OF THE SCALP

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RINGWORM of the scalp, tinea tonsurans, or tinea capitis, is essentially a disease of children. Children of the school-going age, between 5 and 15 years, are the worst sufferers, but adults may also contract the disease.

The disease is very contagious, the contagion spreading not only by direct contact with the