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DIAGNOSIS OF INTESTINAL TUBERCULOSIS.*

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This paper was called forth by the number of cases of tuberculous ulceration of the intestines which came to the autopsy table without previous symptoms, and the number which showed the common symptoms of intestinal tuberculosis without intestinal tuberculosis being present. As is generally recognized tuberculous ulceration of the intestines presages a fatal termination and since the prognosis is so absolutely bad it is of great importance that the condition be diagnosticated, and, if it is impossible to diagnosticate it, it is of equal importance that this impossibility be acknowledged.

This study is on the last hundred cases which came to autopsy in the Phipps Institute, and the cases, therefore, were in no way selected.

Of these one hundred patients the youngest was nine, the oldest fifty-seven, and the average age was thirty-one; seventy-four were males and twenty-six females. Seventy-six showed ulceration of either the small or large intestine or both, and twenty-four no ulceration.

The symptoms ordinarily recognized as being at least probably diagnostic of intestinal tuberculosis are diarrhœa and abdominal pain, tenderness, and rigidity, especially in the region of the ileocœcal valve.

Of the seventy-six patients with ulceration thirty-one (40.8 per cent.) had diarrhœa; of the twenty-four patients without ulceration seven (29.2 per

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cent.) had diarrhoea; of the seventy-five patients with ulceration in which pain was recorded twenty-one (28 per cent.) had abdominal pain; of the twenty-three patients without ulceration in which pain was recorded seven (30.4 per cent.) had abdominal pain. Of the seventy-six patients with ulceration twenty-three (30.3 per cent.) had abdominal tenderness; of the twenty-four patients without ulceration seven (29.2 per cent.) had abdominal tenderness. Of the seventy-six patients with ulceration nineteen (25 per cent.) had abdominal rigidity; of the twenty-four patients without ulceration six (25 per cent.) had abdominal rigidity. In other words, these symptoms taken singly add little or nothing to the diagnosis of intestinal tuberculosis.

Taking now the combination of the four symptoms, namely, diarrhoea, abdominal pain, tenderness, and rigidity, in the seventy-six cases with ulceration they were all four present five times (6.58 per cent.); in the twenty-four cases without ulceration they were all four present once (4.2 per cent.). In the seventy-six cases with ulceration they were all four absent twenty-six times (34.2 per cent.); in the twenty-four cases without ulceration they were all four absent nine times (37.5 per cent.).

Taking now the symptoms in all their various combinations we find that of the seventy-six patients with ulceration five had all these symptoms; four had diarrhoea, pain, and tenderness without rigidity; two had diarrhoea, pain, and rigidity without tenderness; two had diarrhoea, tenderness, and rigidity without pain; three had diarrhoea and tenderness without pain and rigidity; two had diarrhoea and rigidity without pain and tenderness; four had diarrhoea and pain without tenderness or rigidity; two had pain and tenderness without diarrhoea and rigidity; three had tenderness and rigidity without diarrhoea and pain; nine had diarrhoea alone; four pain alone; four tenderness alone; and five rigidity

alone; in one case pain was not recorded; and in twenty-six cases all these symptoms were absent.

Sometimes we fail to find ulceration, but do find from a few to many small macroscopic tubercles in the intestines. These tubercles represent probably the first infection of the intestine and later develop into ulcers. Moreover, these tubercles might be capable of causing diarrhœa.

Tubercles without ulceration occurred in this series three times. Of these three one had and two did not have diarrhœa; one had and two did not have abdominal pain; one had and two did not have tenderness; rigidity was absent in all three instances.

Symptoms in connection with ulceration of the different parts of the intestine and with nonulceration:

	Ulceration of						No ulceration.
	Jejunum alone.	Ileum alone.	Small intestine alone not including jejunum alone or ileum alone.	Cæcum alone.	Large intestine alone not including cæcum alone.	Both intestines not including previously mentioned single parts.	
Diarrhœa, pain, tenderness, and rigidity	0	0	1	0	0	4	1
Diarrhœa, pain, and tenderness	0	0	1	0	1	2	1
Diarrhœa, pain and rigidity..	0	0	1	0	0	1	0
Diarrhœa, tenderness and rigidity	0	0	0	0	0	2	0
Diarrhœa and pain.....	0	0	0	0	1	3	1
Diarrhœa and tenderness....	0	0	1	0	0	2	0
Diarrhœa and rigidity.....	0	0	0	0	0	2	0
Pain and tenderness.....	0	1	0	0	0	1	3
Pain and rigidity.....	0	0	0	0	0	0	1
Tenderness and rigidity....	1	0	0	1	0	1	2 ¹
Diarrhœa alone	0	1	1	0	0	7	4
Pain alone	0	0	0	0	1	3	0
Tenderness alone	0	0	0	1	2	1	0
Rigidity alone	0	0	0	2	1	2	2
Pain not recorded.....	0	0	0	0	0	1	0
No symptoms	1	3	1	2	2	17	9
* Totals	2	5	6	6	8	49	24

¹In one of these cases pain was not recorded.

Moreover, I would like to say that these patients had been in a hospital in which it is imperative that complete examinations be made and complete records preserved. In the study of these cases all the records were carefully gone over, even the nurses' records. It would not be possible, therefore, to miss the symptoms if they were present, for the reasons that, first, the number of bowel movements are recorded on a temperature chart every day and this temperature chart was consulted; second, the night nurse makes a record every morning of the condition of her patients during the night, therefore, when a patient vomits, has diarrhoea, or complains of pain she records it and her record is bound with the history of the case; third, all the patients who die in the institute are autopsied and the comparison of the clinical and pathological findings are brought before the staff every Monday evening, which makes the clinician careful with his records; and, fourth, examinations at stated times are compulsory. True, it sometimes happens that a patient dies within twenty-four or forty-eight hours after admission and before the clinician has made a complete examination. I have included no such case in my statistics.

GASTRIC DISTURBANCE IN RELATION TO INTESTINAL
ULCERATION.

	Gastric disturbance present.	Gastric disturbance absent.
Ulceration of small intestine.....	2	11
Ulceration of large intestine.....	5	9
Ulceration of both intestines.....	15	34
No ulceration	5	19

Besides the symptoms ordinarily attributed to ulceration of the intestines I have endeavored to see if other symptoms and conditions would aid in the diagnosis. A symptom that might be considered to have some bearing is gastric disturbance. A study

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of the accompanying table, however, shows that it adds nothing to the diagnosis.

ULCERATION OF INTESTINES IN RELATION TO ISCHIORECTAL ABSCESS.

Ulceration of	Ischiorectal abscess present.	Ischiorectal abscess absent.	Ischiorectal abscess not recorded.
Small intestine	0	13	0
Large intestine	0	12	2
Both intestines	8	41	0
Rectum	0	1	0
No ulceration of intestines..	1	22 ²	0
Totals	9	89	2

This table shows that in ninety-eight cases in which the presence or absence of ischiorectal abscess or fistula in ano was definitely recorded at autopsy, ischiorectal abscess or fistula in ano was found nine times. Of these nine cases of ischiorectal abscess or fistula in ano eight showed ulceration of both intestines. In other words, it would seem that a predisposition to ischiorectal abscess is possibly accompanied by a predisposition to intestinal ulceration.

Of course it is evident that the absence of ischiorectal abscess means nothing, since in seventy-five cases of ulceration of the intestines ischiorectal abscess was absent sixty-seven times.

ENLARGEMENT OF MESENTERIC GLANDS IN RELATION TO DIARRHŒA.

	Mesenteric glands enlarged.	Mesenteric glands not enlarged.
Diarrhœa present	34	4
Diarrhœa absent	54	8

²This table shows only twenty-three cases of no ulceration of the intestines instead of twenty-four as stated in previous tables. The reason is that one case of ulceration of the rectum without ulceration elsewhere was previously reckoned with the cases of no ulceration of the intestines. This case gave only the clinical symptoms of abdominal tenderness and rigidity.

In addition I looked for conditions that might give rise to a diarrhoea apart from the ulceration of the intestines. For instance, I looked first at enlargement of the mesenteric glands in connection with diarrhoea. Out of eighty-eight cases in which the mesenteric glands were enlarged diarrhoea was present thirty-four times and absent fifty-four times.

Again I tabulated diarrhoea and albumin with and without ulceration, but it added nothing.

Relation of albumin, casts, indican, and diazo reaction in the urine to ulceration of the intestines.

	Ulceration of						No ulceration.
	Jejunum alone.	Ileum alone.	Small intestine alone not including jejunum alone or ileum alone.	Cæcum alone.	Large intestine alone not including cæcum alone.	Both intestines not including previously mentioned single parts.	
Albumin alone	0	1	1	1	1	14	4
Casts alone	0	0	0	1	1	3	5
Albumin and casts.....	2	1	0	1	3	15	11
No albumin or casts.....	0	1	3	3	2	10	3
Albumin or casts not recorded	0	2	1	0	1	7	1
Indican:							
Present	0	0	2	3	2	19	11
Absent	1	1	2	1	0	9	7
Not recorded	1	4	2	2	6	21	6
Diazo reaction:							
Present	0	0	2	0	3	11	4
Absent	0	3	3	6	4	27	19
Not recorded	2	3	0	0	1	11	1

The table shows the association of intestinal ulceration with albumin and casts in the urine, but there seems to be no relationship between the two, as can be seen from the following two items: Out of forty-nine cases of ulceration of both large and small intestines albumin or casts or both were present in thirty-two and out of twenty-four cases with-

out ulceration albumin or casts or both were present in twenty.

There is apparently also no relation between indican or the diazo reaction in the urine and intestinal ulceration. Indican was present in the urine in sixty-five per cent. of the recorded cases with ulceration and in sixty-one per cent. of the recorded cases without ulceration. The diazo reaction was present in the urine in twenty-seven per cent. of the recorded cases with ulceration and in twenty per cent. of the recorded cases without ulceration.

Finally, I would like to say that almost all the intestines, both with and without ulceration, were examined microscopically. The very great majority of intestines showed enteritis, and this enteritis was present both with and without symptoms.

As a consequence of these findings I never make a positive diagnosis of intestinal tuberculosis, and when called in consultation on a patient in whom the diagnosis has been made, if the case is not absolutely hopeless apart from the abdominal condition I suggest that we work on the possibility of ulceration not existing in order to improve the prognosis and make what is done, done heartily and not indifferently, as is liable to be done when the prognosis is absolutely unfavorable.

CONCLUSIONS.

1. The symptoms diarrhoea, abdominal pain, tenderness, and rigidity mean very little or nothing in the diagnosis of intestinal tuberculosis.

2. The presence of an ischiorectal abscess in an advanced case adds to the probability of intestinal ulceration.

3. The diagnosis of intestinal tuberculosis cannot be made with the slightest degree of certainty from our present known symptoms, and since the condi-

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tion carries with it such an unfavorable prognosis, in order to reassure the patient, the nurse, and the physician himself the diagnosis should not be made so that the patient will have a better chance for hopeful treatment.

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