PEPTIC ULCER IN CHILDREN

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PEPTIC ulcer in children has been considered a rare condition, as only 36 cases have been reported.[1] Clinically and pathologically, peptic ulcers must be differentiated from other types of gastric ulceration common to childhood, such as those accompanying burns, malnutrition, melæna neonatorum, and acute infections such as meningitis, septicæmia, scarlet fever, etc. Post-mortem data of the incidence of gastric ulceration in children are not concerned usually with peptic ulcer but these other various types. This report deals with cases which pathologically and at times clinically resemble those found in adults.

The condition must be more prevalent than is realized. In nearly 10,000 cases of gastric and duodenal ulcers reviewed from the records of the Mayo Clinic, Proctor[2] found that there were only 3 children. But in 1,000 cases of gastric ulcer and 1,000 cases of duodenal ulcer he found that in 16 cases of gastric ulcer and 26 of duodenal ulcer the symptoms had been present since childhood. This is a collective incidence of 2 per cent, and it suggests that the diagnosis in many cases of children is being overlooked. Our own hospital records verify this conclusion. Prior to January, 1939, the youngest patient with peptic ulcer on record at the hospital and out-patient department was 17 years of age. All 8 cases presented in this article have been discovered since that date, probably not because the condition is more prevalent now, but because we have been searching for it.

Clinical diagnosis is difficult. This is especially true of cases under the age of ten years. Kennedy[3] states, "The signs and symptoms which are present may be few or many but are so diversified as to rob them of pathognomonic significance." I have found this statement to be uniformly true. Confusion is added by the fact that children under ten years of age are inaccurate in describing and localizing pain, and in designating areas of tenderness to the physician. They are particularly susceptible to suggestion, and for that reason should be asked no "leading" questions unless it is unavoidable.

The following series is composed of 8 children whose ages ranged from 6 to 14 years. There are 2 girls and 6 boys in the group. All ulcers were duodenal, except one (Case 3).

CASE 1

A male, aged 9, entered the hospital in November, 1939, with a tentative diagnosis of appendicitis. He had developed abdominal pain twenty-four hours before admission, which he described as a steady ache centered persistently around and above the umbilicus. He became nauseated and vomited once on the day of admission. During the three preceding years he had had several similar attacks, but none so severe as the present one. Between attacks he was free of abdominal discomfort.

Past history.—He had had varicella in 1933 and scarlet fever in 1935. The *family history* was irrelevant.

Physical examination.—He was a pale and poorly-nourished lad. The oral temperature was 101.2°. The tonsils were large but not inflamed or scarred. There was diffuse abdominal tenderness, more marked in the area of the umbilicus and right iliac fossa, but no rigidity. The rectal examination was negative. By the following morning tenderness could be elicited only in the epigastrium. The temperature was now normal.

Laboratory.—The urinalysis was negative. The white blood count was 4,150; the erythrocytes numbered 5,110,000, and the hgb. was 92 per cent. The sedimentation rate was 10 mm. in one hour. X-ray examination of the chest was negative. In the gastric analysis there was a free HCl of 17, total acidity of 50, and no occult blood.

For the next forty-eight hours, in spite of a soft diet, he consistently complained of nausea following meals. The stool contained occult blood (plus 2). Roentgenographic and fluoroscopic examination of the stomach and duodenum revealed an incisura and irregularity of the duodenal bulb characteristic of ulceration, but no definite crater. About one-fourth of the barium was retained in the stomach after five hours. He was placed on a modified Meulengracht diet.*

Within three days he was asymptomatic and the abdominal tenderness had disappeared. One month later there was only a trace of occult blood in the stools. He had gained three pounds and looked well. Immediately following discharge a second roentgenographic examination revealed a marked diminution of the irregularity, but there was still a five-hour retention of one-fourth of the barium meal.

Two months after discharge he again entered the hospital complaining of continuous epigastric pain of two days' duration. The complaints, physical, and x-ray findings were the same as for the first admission. He was again started on a modified Meulengracht diet with colloidal aluminum hydroxide every four hours. Improvement was distinctly slower. It was two weeks before the abdominal tenderness disappeared. At the present time he is asymptomatic, gaining weight, and looking well.

CASE 2

A male, aged 14, was sent into the emergency ward in September, 1939, with a diagnosis of appendicitis. For two and one-half months he had complained of intermittent abdominal pain occurring one to two hours before

* Graduated ulcer diet, giving a choice of plain, orange or citrated milk.

meals and relieved by food. Although he could not describe the pain, he located it in the epigastrium and left hypochondrium. He had vomited only once, a week before admission. His appetite was good.

Past history.—He had had mumps, varicella and pertussis but no recent illnesses. The father had a peptic ulcer. The mother and two sisters were well.

Physical examination.—The tonsils were greatly hypertrophied and scarred. Examination was otherwise negative.

Laboratory.—The urinalysis was negative. The white blood count was 6,350; the red blood count 4,710,000; and hgb. 84 per cent. The blood Kahn test was negative. The gastric analyses were unsuccessful. Roentgenographic and fluoroscopic examination revealed that the duodenal bulb filled poorly and was markedly irregular throughout the examination, strongly suggesting ulceration. There was no retention of barium in the stomach after five hours.

He was placed on a modified Meulengracht diet with an alkaline mixture mid-morning, afternoon, and at bedtime. Arrangements were made for him to have milk at school. Three months later he admitted that he had not adhered to the diet, but insisted he had had no return of the abdominal discomfort. There was no abdominal tenderness. In the stools, however, there was plus 3 occult blood. X-ray examination now revealed no evidence of ulceration, although the duodenal bulb was hard to fill. He is now continuing on the Meulengracht diet with colloidal aluminum hydroxide between meals and at bedtime.

CASE 3

A female, aged 11, entered the hospital on December 4, 1939, complaining of abdominal pain and fever of two days' duration. She described the pain as a dull constant ache centred around the umbilicus. There was no nausea or vomiting. For three months she had had several similar attacks and had also experienced mild discomfort at bedtime and before breakfast in the mornings. Throughout the day she was quite comfortable. This pain was not relieved by food.

Past history.—In 1935 she had had measles and an attack of rheumatic fever. She had a mild recurrent attack of rheumatic fever in 1936 but none since. Her father had died of pulmonary tuberculosis, and the mother had just been discharged from the hospital with an arrested pulmonary tuberculosis. Her Mantoux test (1:1,000) was strongly positive, but an x-ray examination of the chest was negative. Her mother stated she was exceedingly conscientious about her school work, studied hard, and worried a great deal about her lessons and her mother's health.

Physical examination.—She was well-developed but thin. The admission temperature was 102°. The tonsils were small but scarred. Examinations of the lungs and heart were negative. The abdomen was soft and there was only slight tenderness just around the umbilicus in the midline.

Laboratory.—The white blood count was 18,000. Polymorphonuclears numbered 81 per cent; lymphocytes 13 per cent; and monocytes 6 per cent. The red blood count was 5,070,000 and the hgb. 91 per cent. The sedimentation rate was 50 mm. in one hour. Two days later the temperature dropped to normal, the white blood count to 7,750, and the sedimentation rate to 20. There was plus 4 occult blood in the stools. In the gastric analysis there was a free HCl of 45, a total acidity of 64, and only a trace of blood. X-ray examination of the chest revealed only a few thickened nodules at both right and left hilus. Roentgenographic and fluoroscopic examination of the stomach and duodenum revealed a small filling defect on the lesser curvature of the stomach, suggesting ulceration.

She was started on a modified Meulengracht diet. Twenty-four hours later the abdominal discomfort and tenderness disappeared and she has been asymptomatic since. Two months after discharge from the hospital, the roentgenographic examination was repeated. The previously reported irregularity, though not so pronounced, was still present. Two months later no evidence of ulceration could be found. She is now on a general diet and symptomatically well.

CASE 4

A male, aged 12, entered the out-patient department in February, 1939, complaining of crampy intermittent abdominal pain over a period of two years. He definitely placed the position of the pain as mid-epigastric. Soda relieved the discomfort, but he had never tried food. The pain usually occurred at night. There was no associated nausea or vomiting, and there was no distress during the daytime.

Past-history.—He had had scarlet fever and pneumonia in 1931, and an appendectomy in 1934, following an attack of acute appendicitis. His tonsils had been removed in 1936. Because of the resemblance to a Fröhlich's type of obesity he had been started on thyroid extract at that time. The family history was irrelevant.

Physicial examination.—He was a fairly obese lad, weighing 105 pounds. Although the fat distribution was quite general, there was an accentuation in relation to the girdle area and breasts. The genitalia were infantile. Both testes were in the scrotum. There was no pubic or axillary hair. Mild epigastric tenderness could be elicited, but there were no other findings of importance.

Laboratory. — The stools were negative for occult blood and the urinalyses negative. The blood Kahn test was also negative. Roentgenographic examination showed evidence of duodenal ulceration at that time, and one month later a large ulcer crater was demonstrated in the duodenum. He was placed on a modified Meulengracht diet with magnesium trisilicate between meals and at bedtime. He become asymptomatic in two weeks and has been subjectively well since.

On re-examination in January, 1940, there was no abdominal tenderness. The blood findings were normal and there was still no occult blood in the stools. Roentgenographically, there was a "waist" involving the duodenum which remained throughout the examination. However, there was no residue in the stomach after five hours.

CASE 5

A male, aged 9, entered the outpatient department in December, 1939. For three months he had been losing weight and complained of being tired most of the day. His appetite was poor. For a year he had complained of intermittent pain in the knees and groins when walking, but during the previous three months they had occasionally been so painful as to wake him during the night. He had had innumerable colds and sore throats in the previous year. He also complained of vague abdominal cramps (no localization), constipation, frequency and dysuria, headaches, and blood in the stools. The last complaint had appeared only a week before admission. According to the mother the stools had been streaked with dark red blood but were not "tarry". He complained of some abdominal pain at night and sore stomach in the morning. He had suffered from enuresis since birth but the dysuria was a recent complaint.

Past history.—He had had pertussis as a baby and was told he had had rheumatic fever a year before. The attack was followed by pleurisy of short duration. The mother was well, but the father had a long history of undiagnosed "indigestion". A brother was in the hospital convalescing from a pneumococcic meningitis, and two sisters were at home, well.

Physical examination.—He was not so acutely ill as his history might signify. He was pale and undernourished. The tonsils were enlarged and scarred, and there was good evidence of recent infection. The cervical glands were hard and discrete but not tender. He had prominent glands in both axillæ and inguinal regions, the latter set very tender. The abdomen was diffusely tender, more pronounced in the epigastrium and both lower quadrants. There was no rigidity. He was distinctly tender in both knees and hip joints and along the distribution of the left sciatic nerve. There was no

swelling of the involved joints. Rectal examination was negative.

Laboratory.—The stools were negative for occult blood. The white blood count was 11,000. Polymorphonuclears numbered 61 per cent, lymphocytes 32 per cent, monocytes 1 per cent, and eosinophiles 1 per cent. The red blood count was 4,800,000, the hgb. 100 per cent and the sedimentation rate 45. Platelets numbered 120,000. The blood Kahn test was negative. The urine showed plus 3 albumin and plus 3 white blood cells. Roentgenographic and fluoroscopic examination of the stomach and duodenum revealed an irregularity of the duodenum, suggesting ulceration. X-ray examination of the chest was negative and the Mantoux test (1:1,000) gave no reaction.

He was admitted into the hospital in January, 1940, for further observation. By this time he was improving. His sedimentation rate was now 18, but the white blood count was still 11,000. He had no fever. The joints were distinctly less tender. The urine continued to show albumin and pus, but no red cells or casts. The non-protein nitrogen was 29 mg. An intravenous pyelogram was essentially negative. Culture of the urine showed colon bacilli and streptococci. He concentrated the urine well. He was placed on prontylin and a bland diet. Two weeks later he had no complaints, although there was still some tenderness in the epigastrium. His appetite improved remarkably. The urine continued to show various amounts of albumin, but this proved to be orthostatic. On February 6th roentgenographic examination revealed no evidence of lesion in the stomach or duodenum. His tonsils and adenoids were removed before discharge. At the present time he is on a slightly restricted diet. There has been no return of symptoms.

CASE 6

A male, aged 9, entered the outpatient department in February, 1939. His chief complaint was epigastric pain of six months' duration. He complained so much at night that his mother could not understand how he slept enough to keep awake the next day. In the mornings he always had a stomach ache. "He ate incessantly all day long to keep his stomach from aching." For three successive winters a diagnosis of rheumatic fever had been made because he was feverish at night, but there were no joint pains or chorea. He had lost weight, the exact amount of which was undisclosed.

Past history.—He had had varicella as an infant, and a tonsillectomy was performed in 1938. The *family history* was negative.

Physical examination.—He was a pale lad, weighing but 55 pounds. The temperature was normal. With the exception of slight abdominal tenderness in the area of the umbilicus there were no positive findings.

Laboratory.—The blood Kahn test was negative. The sedimentation rate was 10. The urinalysis was negative and the stools contained no occult blood. Roentgenographic examination of the stomach and duodenum revealed a marked irregularity of the duodenum, suggesting ulceration.

He was placed on a modified Meulengracht diet and sent to a convalescent home. After one week he had no further abdominal distress. He was called back to the clinic in January, 1940, for re-examination. He now weighed 64 pounds and was feeling well. Physical examination was entirely negative. The stools contained no occult blood. Roentgenographic examination revealed no evidence of a lesion in the stomach or duodenum.

CASE 7

A female, aged 7, entered the out-patient department in March, 1939. She had complained of epigastric pain of an intermittent type for eight months. The pain occurred during the day most commonly following meals, and at times she would complain of pain during the night and early in the morning before breakfast. Occasionally she would become nauseated and vomit. Vomiting would relieve the pain. Her mother thought she was often constipated. Her diet consisted largely of foods fried in olive oil and highly seasoned foods which the family relished.

Past history.—She had had varicella as a small child and a tonsillectomy in 1938. The family history was negative.

Physical examination. — She was a well-developed, well-nourished girl. There was a slight tenderness around the umbilicus but no rigidity. Examination was otherwise negative.

Laboratory.—The red blood count was 4,200,000 and the hgb. 74 per cent. The white blood count was 6,700 with 48 per cent polymorphonuclears and 52 per cent lymphocytes. The stools were not examined for occult blood. In the gastric analysis the free HCl was 30 and the total acidity 49. Roentgenographic examination of the stomach and duodenum revealed a slight amount of irregularity of the lesser curvature of the stomach near the cardia and some irregularity of the duodenum suggesting ulceration.

She was referred back to her physician for treatment, and was not seen again until January, 1940. She had been placed on a bland diet with Sippy powders between meals and at bedtime. Although she still had occasional attacks of abdominal pain they were much milder and farther apart. Examination of the blood and stools was now essentially negative. Roentgenographic examination revealed no evidence of irregularity of the stomach or duodenum.

CASE 8

A male, aged 11, was sent into the hospital on November 15, 1939, because of pallor and "tarry" stools. One year prior to admission he had complained of occasional abdominal pain following meals. Lying down seemed to relieve it. In the early part of January, 1938, he had had a severe attack of abdominal pain, necessitating a "hypo" for relief. Simultaneously the stools became almost black, although they returned to normal in two weeks' time. The pain also disappeared entirely, and within a month he was well. In September, one month before admission, the stools again became tarry and it was noticed he was very pale. No pain accompanied this attack. Two weeks before admission the stools again became black and the pallor very marked. He felt well, however, and had no complaints.

Past history.—He had had measles and a number of colds and sore throats, but none recently. The *family history* was negative.

Physical examination.—He was a pale and thin lad. The tonsils were large but not inflamed. He had two carious teeth. The tongue was heavily furred. No abdominal tenderness was present. The rectal and proctoscopic examinations were negative.

On the second day of admission he had gross but painless hæmaturia which continued for two days and then entirely disappeared. The tourniquet test was negative.

Laboratory.—The red blood count was 3,200,000 and the hgb. 56 per cent. The white blood count was 6,800, with 54 per cent polymorphonuclears, 5 per cent metamyelocytes, 38 per cent lymphocytes, 1 per cent monocytes, and 1 per cent eosinophiles. The sedimentation rate was 20. The stools were tarry and contained occult blood (plus 4). The platelets numbered 270,000. The bleeding and clotting time were normal. The non-protein nitrogen was 37 mg. In the gastric contents there was no free HCl, a total acidity of 17, and plus 3 and plus 4 occult blood in all specimens. An intravenous pyelogram was negative. Roentgenographic and fluoroscopic examination revealed the characteristic crater of an ulcer in the duodenum.

The lad was placed on a modified Meulengracht diet. He was asymptomatic during his entire hospital stay, although the stools continued to show plus 4 occult blood until one and one-half months later, when he was started on colloidal aluminum hydroxide every two hours. During this time he had been given five transfusions to offset the anæmia accompanying the continual loss of blood. Within a week after starting the colloidal aluminum hydroxide the occult blood in the stools dis-

appeared, and it did not rise above a trace until after discharge from the hospital. At the end of two months roentgenographic examination revealed no evidence of duodenal ulcer. The red blood count was 4,000,000 and the hgb. 84 per cent on discharge.

He had dark stools for several days following discharge, but at the present writing there is no melæna. He looks and feels well. Physical examination is completely negative. He is continuing on the prescribed diet with colloidal aluminum hydroxide between meals and at bedtime.

COMMENT

Attempts to determine etiological factors were very discouraging. Adult contributory causes such as alcohol, tobacco and emotional strain are almost negligible. Although infection was not a notable feature, nevertheless it is felt that all foci, either active or recently active, should be eradicated. The subject of dietary indiscretion cannot be properly evaluated; children are renowned for dietary imprudence.

It is significant that 6 of the 8 children were definitely under weight. All belonged to families of low income, most of them on relief. This in itself furnishes a good indication that the diets were deficient in certain essential foodstuffs, notably protein. It is estimated by our dietitians that the average relief diet contains about 65 per cent of the optimal protein requirements for a growing child. How much emphasis should be placed on this factor is not known. It has been shown recently that high protein diets can be used with a moderate degree of success in the treatment of peptic ulcer in adults.[4]

In 2 cases there was a significant family history. In Case 2 the father definitely had an ulcer, and in Case 5 the father gave a long history of indigestion, but was not under treatment.

No further stress need be placed on the diversity of symptoms. The single feature in the symptomatology is the duration of the abdominal pain. Individually, the span is from two and one-half months to three years, with a group average of one year. In patients 1, 2 and 3 the pain was so severe they had been sent to the hospital with diagnoses of acute appendicitis. Seven of the 8 localized the pain in the epigastric and paraumbilical region of the abdomen. In Cases 3, 4, 6 and 7, the pain appeared with noticeable regularity during the night and before breakfast in the morning. This would seem to parallel the pain of adults which occurs with greatest frequency after the stomach has emptied, except that in children the interval between food ingestion and the onset of the pain is greatly prolonged. Cases 2, 4 and 6, gave a definite history of relief from food or soda, and, as might be expected, the two oldest members of the group presented this phenomenon which is so characteristic in the adult. Nausea and vomiting occurred in only 3 cases, but in 2 of these it had occurred on only one occasion each. We feel that it is not important as an aid in the diagnosis of ulcer, but rather tends to confuse the diagnosis with other intra-abdominal conditions, such as appendicitis, for which an unnecessary operation may be performed. This is also true of fever, leukocytosis, and increased sedimentation rate which occurred in 2 cases each. In these instances they were thought to be due to an infection elsewhere that may have been the precipitating factor in re-activating an ulcer already present. Patient 1 narrowly escaped operation on the night of admission because of the history, nausea and vomiting, the fever, and the nature of the abdominal pain.

Loss of appetite was present in only 2 cases, and in Case 1 this amounted to a veritable sitophobia, the abdominal distress and nausea following the ingestion of food. Pyrosis, eructation and flatulence were notably absent in the histories. They may have been present but undisclosed because of the patient's inability to describe the symptom. Although constipation has been reported a common complaint, it occurred in only 2 cases in this group.

Abdominal tenderness was the most constant physical sign. It occurred in 6 cases and was more pronounced in the epigastrium and paraumbilical regions. In 2 patients there was a slight diffuse tenderness elsewhere; in 2 there was no abdominal tenderness at any time.

Anæmia was present in only one case, and this was due to an extensive loss of blood by the bowel previous to and following admission. Occult blood was present in the stools in 4 cases. The test, when done repeatedly, is an aid to diagnosis and a check on the efficacy of treatment. The results of gastric analyses were so inconclusive that they would seem to be of little practical value.

Because of the diversity of subjective and objective findings it is impossible to make more than a presumptive clinical diagnosis of ulcer, so that the burden must fall upon the roentgenologist. In one way this is unfortunate, because in most hospitals there is very little occasion to have gastro-intestinal series in children of this age. The natural conservatism of the roentgenologist makes him very hesitant in committing himself to the presence or absence

of a lesion in children, especially in cases where no crater is demonstrable. This need not be. Our knowledge in this matter has been gained not only by the advice of our roentgenologists but by the roentgenographic and fluoroscopic appearance of the stomach and duodenum in a number of control patients. Peristalsis seems to be normally more rapid in children. Otherwise, there is little essential difference in the roentgenographic appearance in children and adults. I stress this point because in only 3 of our cases were we able to demonstrate an actual crater. The remaining 5 cases were reported as having "a marked irritability and irregularity of the duodenum, suggesting ulceration". Such an interpretation does not necessarily connote that the ulcer is active, but when coupled with suggestive clinical findings we may well assume that it is. Proctor[2] states, "Even among roentgenologists of wide experience few will make a definite diagnosis of ulcer, but the fact that a lesion is present will usually be noted."

Two cases presented definite complications; one (Case 8) with a severe and rather persistent hæmorrhage which was manifest by tarry stools; the other (Case 4) with a moderate degree of stenosis revealed by x-ray but unaccompanied by untoward symptoms. There was retention of the barium meal in 3 cases when first seen. This disappeared with treatment in Cases 6 and 8, but was present in Case 1 following two months of diet alone.

Six patients were placed on a modified Meulengracht diet, and the other two on a bland diet that served the same purpose. In all but cases 7 and 8 the relief from symptoms was almost immediate. Three cases were placed on colloidal aluminum hydroxide; case 8, because of the persistence of duodenal hæmorrhage that did not respond to diet alone; cases 1 and 2, because of subsequent relapses. Patient 2 admittedly would not stay on his diet. Patient 7 has had mild recurrences of abdominal discomfort. Seven of the 8 cases are asymptomatic at the present time. The last roentgenographic examination on this group revealed no evidence of activity in 7 cases.

It is too early to properly evaluate the results of our treatment. As with other illnesses in children, the reparative processes seem to be great.

SUMMARY

In the child, as in the adults, the etiological factors of peptic ulcer are questionable. The clinical picture is variable. The one important complaint which should always arouse suspicion is the history of long-standing abdominal pain, recurrent or chronic. The older the child, the greater the tendency for the picture to resemble the adult symptomatology.

The most constant physical sign is abdominal tenderness, although it may be absent at the time of examination. It is usually epigastric or paraumbilical.

The diagnosis must depend upon the roentgenographic examination. Though desirable, the demonstration of a crater is not always possible or necessary. If a constant and characteristic deformity of the duodenum can be demonstrated roentgenographically in a child with sufficient clinical and laboratory evidence of ulceration, then the diagnosis of peptic ulcer is justifiable.

I wish to express appreciation to the Pædiatric Staff of the Vancouver General Hospital for their co-operation and suggestions, and especially to Drs. E. S. James, J. R. Davies, and E. J. Curtis for the use of their cases.

REFERENCES

1. KELLOGG, H. B.: Chronic peptic ulcers in children, *Northwest Med.*, 1939, 38: 129.
2. PROCTOR, O. S.: Chronic peptic ulcer in children, *Surg., Gyn. & Obst.*, 1925, 41: 63.
3. KENNEDY, R. L. J.: Peptic ulcer in children, *J. of Pediat.*, 1933, 2: 641.
4. WINDER, C. AND MATZNER, M. J.: Peptic ulcer—The effect of high protein diet on the behaviour of the disease, *Am. J. of Digest. Dis.*, 1939, 5: 743.

RÉSUMÉ

La littérature médicale ne révèle que 36 cas d'ulcère peptique rapportés chez les enfants. Cet état est probablement plus fréquent. Les circonstances étiologiques sont assez difficiles à établir et l'image clinique est très variable. Il semble que le symptôme le plus fidèle soit la douleur abdominale intermittente et récidivante. Chez le grand enfant les symptômes se rapprochent de plus en plus de ce que l'on observe chez l'adulte. Les malaises abdominaux ont cette caractéristique de siéger, soit à l'épigastre, soit au niveau de la région péri-ombilicale. Le diagnostic précis nous viendra de la radiographie de l'estomac et du duodénum. Les 8 cas rapportés soulignant l'importance de la douleur intermittente et du malaise récidivant.

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