Clinical Department.

A CASE OF GASTRIC ULCER IN A CHILD FOUR MONTHS OLD.¹

BY CLEON M. HIBBARD, A.M., M.D.,

First Assistant Resident Physician, South Department, Boston City Hospital.

GASTRIC ulcer in children is such a rarity that only a few cases have been reported.

A. H. Hare² collected in literature 14 cases under fourteen years, with but five under three years of age.

Colgan³ has added another case in a girl two and a half years old, who was ill thirteen hours with convulsions and high temperature. Autopsy showed a round ulcer on the greater curvature near the cardiac end of the stomach, which had perforated, causing a peritonitis.

Rotch⁴ reports a case of Dr. Northrup's in a female one year old. "The infant was under treatment for one month. It had vomiting and diarrhea. In the second week it began to refuse its food and to emaciate. The diarrhea continued and the vomiting was persistent. The vomitus was somewhat brownish in color; the child died of exhaustion. The mucous membrane of the stomach was covered with small ulcers, varying in size from a dot to one centimetre in diameter." There was one large ulcer which had perforated the wall. There was some necrosis around the ulceration, but "no evidence of inflammatory condition."

There was no note of tuberculosis in either Colgan's or Northrup's case.

Holt in his recent book, "The Diseases of Infancy and Childhood" (p. 304), divides gastric ulcer in children into four classes: (1) ulcer in the new-born, (2) ulcer resulting from follicular gastritis, (3) tubercular ulcers, (4) round perforating ulcers. Of the latter class he says that he has found but three cases on record in non-tubercular patients. Two were in young children.

As to the pathology of these ulcers little is known. Holt (p. 101), in speaking of ulcers in the new-born, says: "The cause of these ulcers is somewhat obscure; some of them are undoubtedly dependent upon inflammatory changes, probably of infectious origin; others have been compared to peptic ulcers of later life, and are attributed to thrombi in the blood-vessels of the mucous membrane."

Annie D., age three months, was admitted to the Diphtheria Ward, South Department of the Boston City Hospital, March 20, 1897, having been ill for two days with fever and vomiting. There was no membrane, but the Klebs-Löffler bacilli were found in the throat. She was of good color and well developed and nourished.

On admission she received an immunizing dose of antitoxin, which was followed four days later by a morbilliform eruption which persisted three days. On the 26th the temperature rose to 102.5°, having been practically normal before that. She also began to vomit up the milk and lime-water. On the 30th the milk was not retained, and a small amount of Mellin's Food was given, which was retained in part. From the 22d there had been some diarrhea, which had increased by the 30th, the stools then being green in

color with some curds. On the 31st they were brownish in color. From this time to the end the diarrhea and vomiting persisted. She was irritable and restless, cried most of the time, and lost flesh rapidly. The temperature varied from 99° to 101°, pulse from 120 to 150, respiration from 20 to 35. April 3d there was slight retraction of the neck backwards, pupils pin-point in size but reacted to light. Pulse very weak and thready, no food was retained, diarrhea continued, marked stupor and pallor. Died next morning of what appeared to be exhaustion.

The following description of the autopsy and microscopic examination are from the records of the Pathological Department of the Boston City Hospital, April 4, 1897:

AUTOPSY.

Body of a child about six months of age; well developed, rather poorly nourished. Rigor mortis. Body very pale; no lividity. The abdomen greatly distended, tympanitic everywhere; muscles pale. Intestines distended with gas, contents discoloring intestinal wall brownish-black. Tonsils, naso-pharynx, larynx and trachea normal. Heart, weight 40 grammes. Muscle pale; valves and cavities normal. Lungs normal in color, generally soft, except in backs, where a few small solid nodules can be felt. Bronchi covered with slimy mucus, membrane injected. On section, lung normal, except at base where small consolidations finely granular, dark-red in color, are present. Liver, weight 570 grammes. Pale brownish-red, mottled slightly; markings normal. Spleen, weight 40 grammes. Attached by firm adhesions to lateral abdominal wall; of a light-red color; malpighian bodies showing as white pin-point areas. Pulp normal. Kidneys, 115 grammes. Pale, soft; markings normal; capsule peels smoothly.

Stomach contained white masses resembling curdled milk, covered with black granular *débris*, semi-fluid, in large amount, distending stomach somewhat. On the posterior surface, extending down to greater curvature, and nearer pyloric than cardiac orifice, a circular area, five centimetres in diameter, partially outlined on either side by deep losses of substance. On one side 2.5 by .6 cm., rather elliptical; on the other 3 by .5 cm., with its greatest breadth in the middle portion of ulceration. In these places the circular layer of muscle fibres is laid bare, the edges are prominent, firm and undermined. In the area included between these ulcerations the mucous membrane is soft, rather prominent, and presents many small punctate losses of substance, usually circular, about the size of a pin's head and superficial, being apparently confined to the mucous membrane. Tests of the black *débris* for hemin crystals were positive.

Intestines contained considerable quantities of blood-colored material in upper portion, with black granular material in large amount further down. The mesenteric glands enlarged from size of pea to that of a bean; white, hard. On section, rather firm.

Aorta normal. Bladder and genitalia normal.

Anatomical diagnosis: Bronchitis and broncho-pneumonia, gastric ulcer with hemorrhage.

Bacteriological examination: Liver, colon bacilli; spleen, colon bacilli and few streptococci; kidney, streptococci (pure).

MICROSCOPIC EXAMINATION.

Sections of the kidney show granular, coagulated material in tubes, with a few pale circles. Some swelling of epithelium of convoluted tubules. The epithelium over glomeruli well marked. In a few places in the cortex there is cellular infiltration in the interstitial tissue, more or less focal. The infiltration is chiefly made up of plasma cells. The tubules are compressed in these places and almost obliterated. Closer examination of the kidney shows not one but several foci of typical interstitial nephritis in the cortex.

Section of the liver shows some cellular proliferation

¹ Read before the Boston City Hospital Medical Society, May 13, 1897.

² Keating's Cyclopedic of The Diseases of Children, vol. iii, p. 51.

³ Medical News, Philadelphia, vol. lxi, p. 408.

⁴ Pediatrics, p. 853.

around the portal spaces, and numerous leucocytes in the capillaries. Swelling and fatty degeneration of liver cells.

The spleen is intensely hyperemic; the follicles enlarged. In one of the large follicles there is a pale centre, many of the large cells in which are necrotic, the whole resembling a tubercle. In the necrotic tissue there are polynuclear leucocytes.

Examination of the stomach shows a sharply circumscribed loss of substance, with deeply undermined necrotic edges on one side; and at the other the loss of substance gradually fades out to the surface of the mucous membrane. In the submucosa there is considerable cellular infiltration and accumulation of cells in the vessels. The base of the ulcer is necrotic, and in places it extends down through the sub-mucosa to the muscular coat; there is a small amount of fibrin in the tissue beneath. There is no granular tissue and no chronic inflammatory reaction. Where the ulcer is most undermined, fibrin is seen in the sub-mucous tissue, due to fibrinoid metamorphosis of the connective tissue. At various places beneath the mucous membrane and adjoining the ulcer there are distinct hyaline thrombi in the walls of the blood-vessels, and hyaline masses completely occluding them.

It is possible that the ulcer is not to be regarded as a typical chronic gastric ulcer, but as a more acute process due to a disturbance in the circulation in the stomach produced by the hyaline thrombi, and the necrotic mucous membrane has been afterwards completely digested away by the action of the gastric juice. It is also possible that the ulcer started as a distinct diphtheritic lesion of the mucous membrane. The fibrinoid metamorphosis of the connective tissue and the hyaline thrombi in the vessels are not opposed to this view, for similar changes are not uncommon at the base of the diphtheritic ulcers in the pharynx.

In the few cases of diphtheritic lesions of the stomach which have come to observation the process was more diffuse and would not have led to circumscribed ulceration.

GASTRIC ULCER IN THE NEW-BORN.

ETIOLOGY, MATERNAL IMPRESSIONS.

BY J. R. LINCOLN, M.D., MILLBURY, MASS.

On November 4, 1896, Mrs. —, of Lowell, while visiting Mrs. C., her sister, of this town, was taken suddenly ill, and vomited a large quantity of bright-red blood, which spattered over her clothing and made quite a pool on the floor. She was found in a faint by Mrs. C., who got her into the house, washed off the blood, changed her clothing, and took the whole care of her for two days, until a particular nurse who was desired could arrive. During these two days the patient vomited blood several times. Blood was also noted in the stools.

Mrs. C. understood perfectly the nature of the case; but beyond being anxious for her sister and shocked by the spectacle of blood, did not show any nervousness, asked about the case and wondered if it would make her have a miscarriage.

For four weeks the patient remained at her house, at the end of which time she was able to return to Lowell, where she was referred to her physician, Dr. W. T. Carolin, for convalescence.

At the time of this illness, November 4th, Mrs. C. was almost exactly five months pregnant, and, as we have seen, did not appear to be unduly alarmed or nervous over her sister's hemorrhage or following illness.

On March 3, 1897, at 6 o'clock P. M., a girl was born naturally, weighing eight and one-half pounds, and to all appearances absolutely perfect. On the next day the baby was very uneasy, cried all the time, and at 4

o'clock P. M. vomited one or two teaspoonfuls of bright-red blood. This was followed by several vomiting spells on the succeeding day; this time the blood was darker colored.

For three or four weeks the baby cried about all the time, seldom sleeping an hour continuously. The mother did not wish to nurse the child, and I was able only after much experiment to obtain a satisfactory food and method of feeding. Notwithstanding all this, it finally did well. At two weeks it weighed but six pounds; at four months thirteen pounds, with no digestive disturbance after the second month.

In face of such facts as the above, are we justified in excluding as "happenings" all cases of maternal impressions?

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 7, p. 156.)

RADICAL CURE OF HERNIA WITHOUT THE USE OF BURIED SUTURES.

Duplay and Cazin,¹² having seen late abscess-formation as the result of the use of buried sutures, believe that they form a *locus minoris resistentiæ*, and that however aseptic they may be, a systematic septic infection is liable to show itself at that point. They therefore advise the performance of an operation without the use of buried sutures, and accomplish this by tying the sac upon itself, after having drawn it well down; and to prevent this knot from slipping, they tie a series of knots in the sac, or divide it and tie the two portions together, one knot upon another.

The parietal sutures and those employed to occlude the external ring are of silver wire, and are removed after union has taken place.

A series of twenty operations performed in this manner have yielded results as perfect as could be desired, with no recurrences and no abscess-formation.

SURGERY OF THE NON-CARCINOMATOUS DISEASES OF THE STOMACH.

Doyen¹³ has come to the conclusion that the painful symptoms in dyspepsia, hyperacidity and ulcer rotundum are due to reflex spasm of the pylorus. He assumes that the cicatrization of gastric ulcers is hindered mostly because of the spastic contraction of the pylorus, which keeps the edges of the ulcer constantly irritated.

For this reason, Doyen performed the operation of gastro-enterostomy in a case of gastric ulcer, with the result that the pain and vomiting at once ceased; and at the end of three years the patient still remains well. Doyen has entirely abandoned pyloroplasty. He has performed gastro-enterostomy 48 times with a total mortality of 30 per cent.; 16 cases were for carcinoma, 11 for cicatricial stenosis of the pylorus and duodenum, and 21 for spasm of the pylorus due to gastric ulcer and hyperacidity. All of these latter cases recovered completely. In one case the function of the stomach was not well performed after the operation, though the pain was entirely cured and the patient gained in weight.

¹² La Semaine Médicale, November 11, 1896; American Journal of Medical Science, March, 1897, p. 354.

¹³ Annals of Surgery, February, 1897, p. 212.