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AN UNUSUAL CASE OF ESOPHAGEAL HIATUS HERNIA

THOMAS GAHAGAN, M. D.*

IN HERNIATION through the esophageal hiatus of the diaphragm the hernia usually contains the proximal portion of the stomach, most often the cardia but sometimes the fundus. This is associated with stretching of the phrenoesophageal ligament and widening of the space between the two diaphragmatic crura which form the margins of the hiatus. Because of the obstructive effect on the proximal stomach trapped above the diaphragm, gastritis is common in the ordinary hiatus hernia. In addition disruption of the normal valvular mechanism permits the acid juice of the stomach to enter the lumen of the esophagus where it produces a chemical burn of the squamous cell lining.

The patient described in this report had a herniation through the esophageal hiatus which contained the distal rather than the proximal portion of the stomach. Her esophagogastric junction was in the normal position. Naturally her symptoms were not those usually produced by esophageal hiatus hernia; namely, burning pain under the sternum accentuated by lying recumbent and relieved by standing upright and by the ingestion of alkaline material. Also, of course, the method of repair of the hernia was different from that ordinarily employed in the surgical treatment of hiatus hernia.

CASE REPORT — The patient was a widow, 63 years old, who was first seen as an outpatient on August 18, 1961. She complained of bloating and gas after eating which had been severe for about six months. She had noticed a considerable loss of weight and had at first ascribed this to worry over the recent death of her husband. She had lost all appetite for solid foods and nourished herself with soups fortified with milk and cream. She would wake up in the middle of the night with a full feeling in the epigastrium which was followed by vomiting; this gave her some relief. Although she had not noticed distention of the abdomen, she was aware of a splashing sound in her body when she moved from side to side.

Physical examination of the abdomen at that time was described as negative. The patient did have prolapse of the uterus and a small inguinal hernia. She also had ankylosis of the right hip and had suffered from arthritis for many years. A cholecystogram was ordered which was negative for stones. The fluoroscopist, however, called attention to the presence of what appeared to be a cystic lesion of the lower right lung. (Figure 1). A bland diet and Maalox were prescribed. The patient returned on September 26, 1961 and mentioned no improvement in her symptoms.

Films of the esophagus and stomach were carried out with the ingestion of barium on October 27, 1961. This examination demonstrated the distal portion of the stomach and the duodenal bulb to lie in the right hemithorax. (Figure 2.) The patient was seen at this time by Dr. Melvin Block in consultation for her inguinal hernia and he

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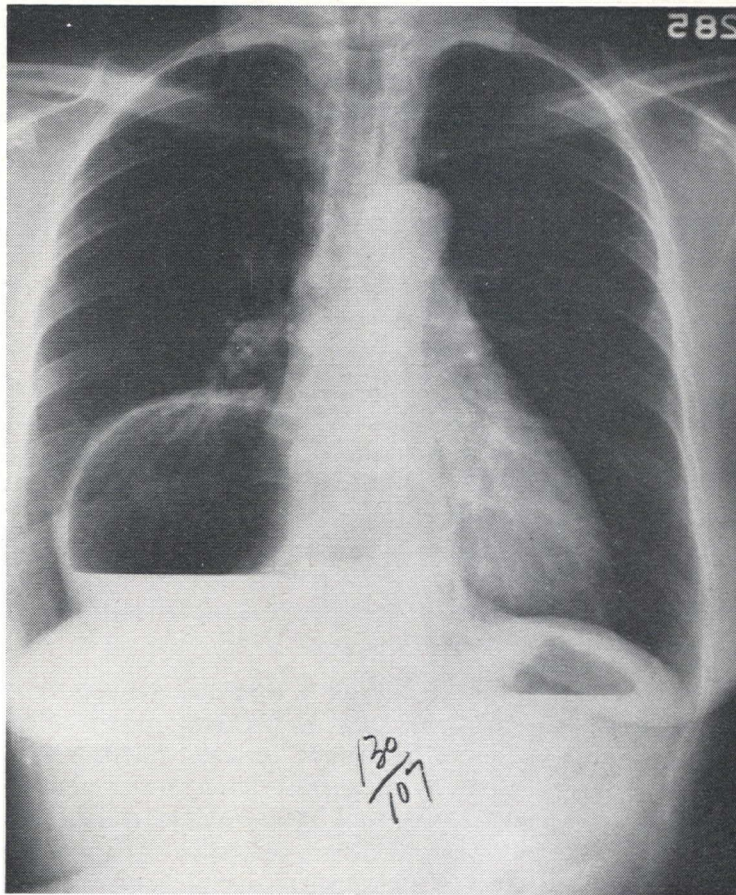


Figure 1a

Plain x-rays of the chest demonstrating the cyst-like configuration in the right hemithorax. Note that the stomach air shadow is in its normal location.

suggested that attention be directed to the herniation of the stomach through the diaphragm. When seen in this division, scrutiny of the x-ray films showed the gastric antrum, the pylorus, and a portion of the duodenum herniated up into the right chest through what was thought to be an anterior diaphragmatic defect. The gastroesophageal junction was in the normal position. The body of the stomach was tremendous (Figure 2) and appeared partially obstructed at the site of herniation of its distal portion.

Because of the impression that the herniation through the diaphragm was anterior, possibly a hernia through the foramen of Morgagni, it was decided to approach the repair of the lesion through an incision in the right side of the abdomen which could be extended up into the right chest cavity, if so indicated at the operating table. Operation was carried out under endotracheal anesthesia on November 24, 1961. As the operative note states: "The gastroesophageal junction was in the normal location and the distal portion of the stomach was herniated up into the right chest cavity through a defect in the diaphragm which was not anterior up under the sternum as in the Morgagni hernia but posterior. It was possible to reduce the stomach, pylorus and duodenum easily out of this very sizeable hernia sac. On inspection there was no structure interposed between the sac and the esophageal hiatus, this being a widened out area to the right, continuous with the esophageal hiatus. The wall of the hernia sac, which was a definite structure analogous

ESOPHAGEAL HIATUS HERNIA

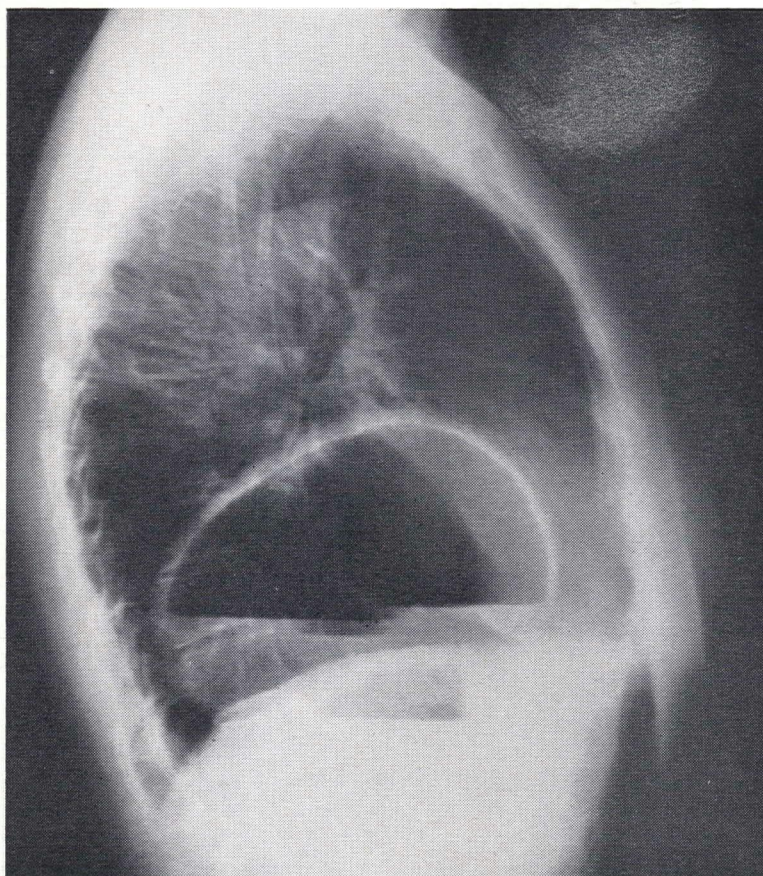


Figure 1b

Three fluid levels can be seen in the lateral film. One in the normal stomach bubble and two in the lesion above the diaphragm.

to the sac found in a groin hernia, was dissected away from its juxtaposition with the diaphragmatic surface of the right pleura. This step was carried out without entering the right pleural cavity although a large empty space was thus created which previously held the herniated contents. It was not possible to do the standard type of repair here because of the absence of the right crus. Consequently an anterior approximation was carried out of the margins of the tremendously large hiatus and after resection of the sac, the remaining margin of it was sutured to the undersurface of the diaphragm. The duodenum here was very mobile as it would have to be to be herniated up into this supradiaphragmatic cavity on the right".

Following operation, the patient noted an immediate change in her condition and remarked on the disappearance of the nausea which was with her continuously before operation, and the absence of the splashing sensation in her abdomen. She began taking a full liquid diet on the first day after the operation and at the time of her discharge on December 7, 1961 she was eating a regular diet with great satisfaction. When seen in the out-patient Clinic on January 16, 1962 the patient was grateful and happy, being able to eat foods such as meat for the first time in quite a while. She looked very well and had a resilience and energy that she did not have preoperatively.

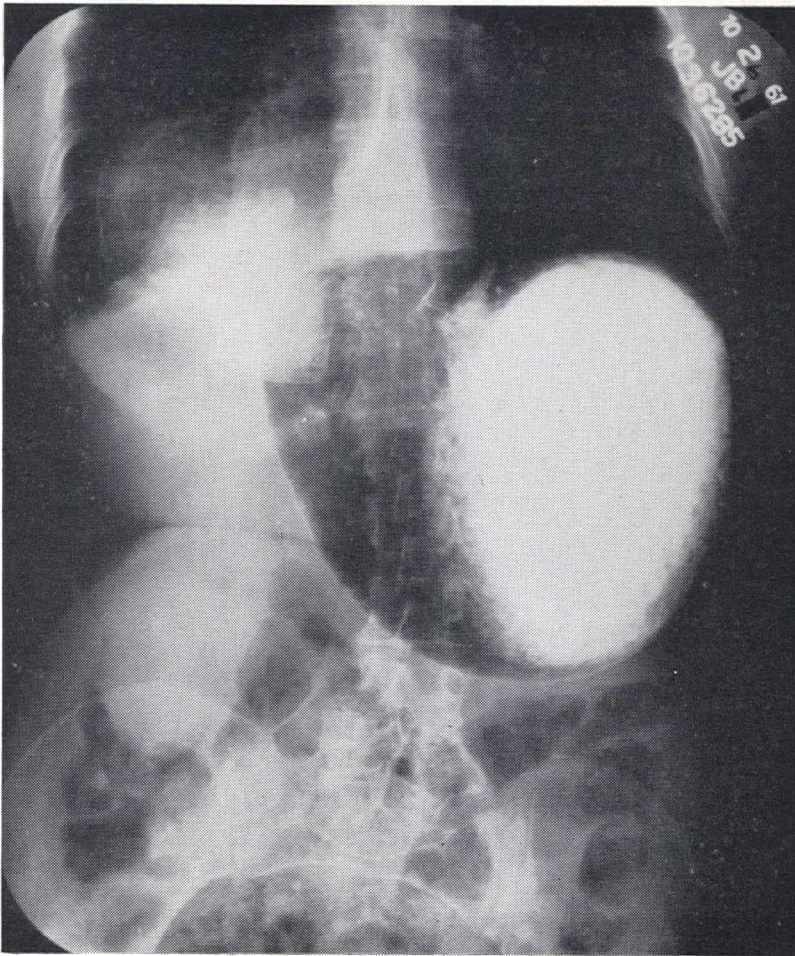


Figure 2a

X-ray of the stomach with ingestion of barium. The contrast medium enters the dilated body of the stomach and goes into the gastric antrum which is above the right hemidiaphragm.

COMMENT

We can speculate about cause and effect with respect to the anatomical alterations encountered in this patient. For example, the diminution in size or absence of the right crus of the esophageal hiatus could be secondary to long-standing pressure from the hernia, as it is probable that the patient had had the hernia and doubtless some symptoms from it for much longer than six months. Some instances can be found where a described inadequacy of the right crus is actually an unfamiliarity on the part of the operator with the technique of dissection of this structure. In the experience of between 200 and 300 cases of repair of esophageal hiatus hernia in this division, the identification and use of the right crus in the repair has been a standard maneuver so that familiarity with its anatomy has been acquired. On

ESOPHAGEAL HIATUS HERNIA

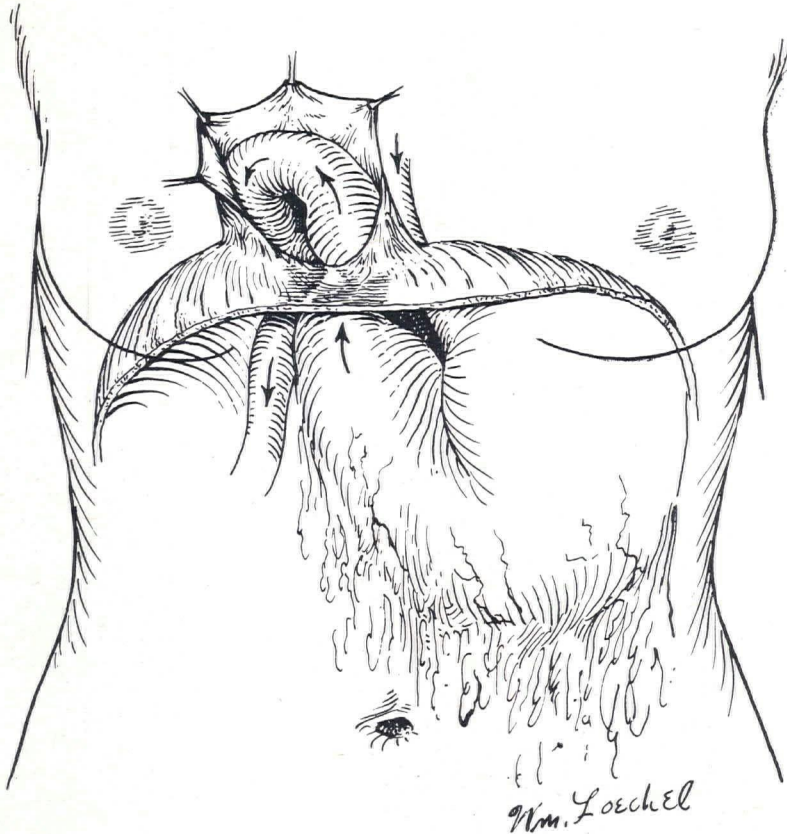


Figure 2b

Anatomical drawing corresponding to the x-ray. The mechanism by which the hour glass deformity of the antrum is produced can be seen.

the other hand, it is possible that the right crus defect in this patient represents a congenital abnormality. The normal anatomy of the left side of the hiatus in combination with the abnormally long duodenal mesentery would lend support to this interpretation.

In a communication regarding this patient, Allison of Oxford implies that the hernia was of congenital origin and probably analogous to the hiatus hernia of the paraesophageal type which he believes to be a congenital lesion.¹ In the recently published encyclopedic volume on surgery of the esophagus by Postlethwaite and Sealy,² a differentiation between sliding and paraesophageal hernias is made in this way. "In the sliding type, the anatomic junction of the stomach and esophagus lies above the hiatus of the diaphragm. The normal relationship between the esophagus and the fundus of the stomach is obliterated, so that the angle of entry of esophagus into stomach is lost. The cardia lies in the posterior mediastinum. No true hernia sac is present. The phreno-esophageal ligament on the anterior and, to a degree, the medial and lateral aspects are elongated. The stomach, as it ascends, carries

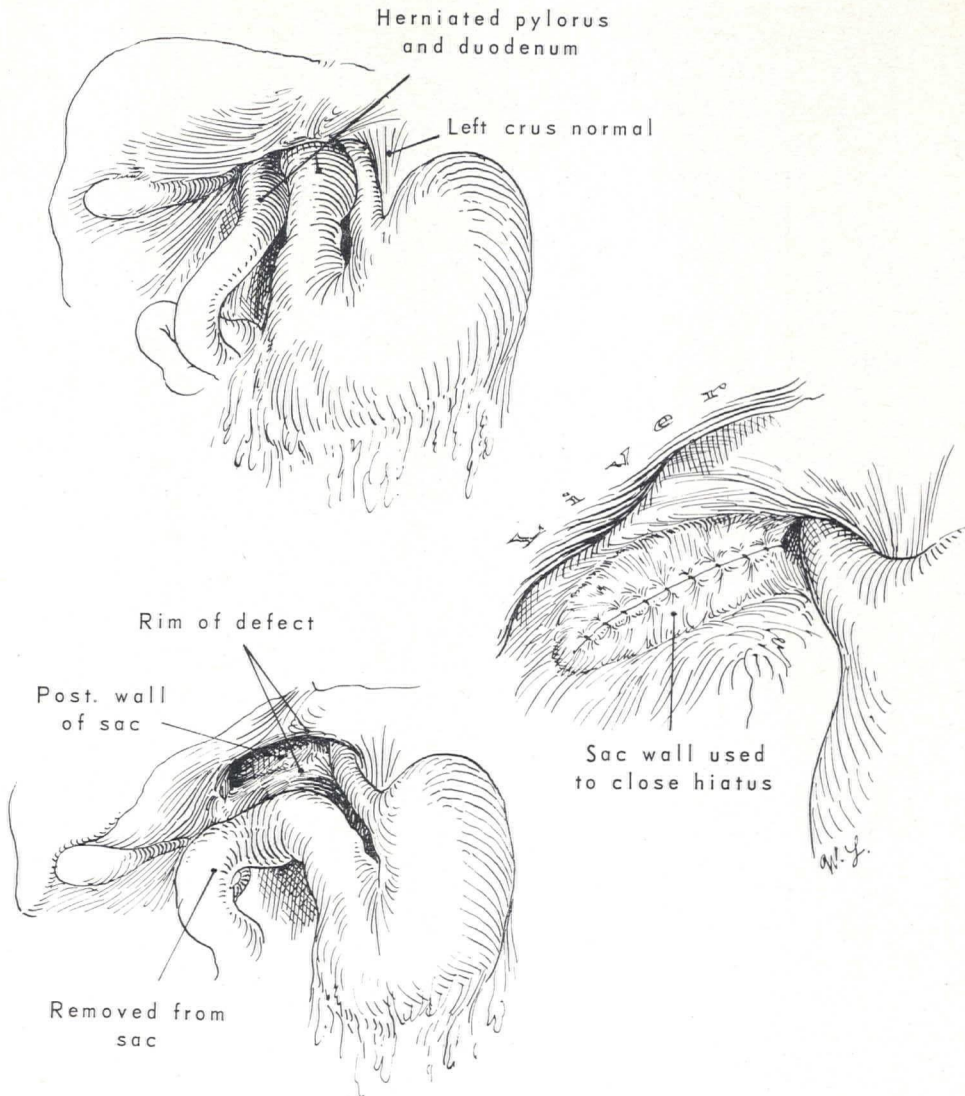


Figure 3

Drawing of the steps in the operative correction of the hernia. It is interesting to speculate on what the presenting symptoms would have been if the bile duct had been kinked sufficiently to cause biliary obstruction.

with it the peritoneum, the extent depending on the point of secure attachment of visceral peritoneum to the anterior aspect of the stomach. Thus, the stomach is not contained in a sac of peritoneum but as the organ slides upward, an extension of peritoneum in the form of a partial sac is carried with it, the serosa of the stomach being the posterior wall of this extension. In the very large hernias, omentum or colon may enter this sac". The major characteristic of the paraesophageal hernia is that the esophagogastric junction remains in the normal position while the fundus

ESOPHAGEAL HIATUS HERNIA

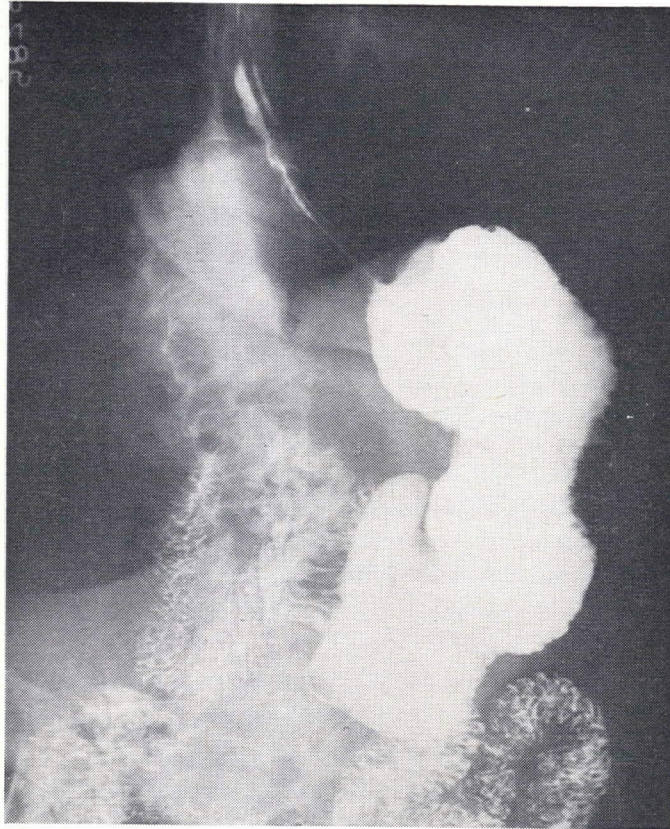


Figure 4

Postoperative x-ray. Evidence of restoration of normal stomach contractions can be seen. The mucosal pattern of the duodenum is normal and its unusual mobility is evident.

and the greater curvature roll upward above the diaphragm to form the hernia. A sac of peritoneum most often extends through the enlarged hiatus into the mediastinum, although a band of muscle or fibrous tissue may be present between the hiatus and the opening of the hernia."

The infrequency of paraesophageal hiatus hernia has led some surgeons to doubt its classification as a separate entity. As an example, for some reason or other, no hernias of this type are recorded in the series of hernia repairs from this clinic. In the series of 160 hernias operated on by Postlethwaite and Sealy, only two were said to be paraesophageal. I have repaired one hernia, not at this hospital, in a young woman 22 years old that was definitely paraesophageal and probably congenital. Relative to the patient reported in this paper, Allison implies that the content of a paraesophageal hernia, usually the gastric fundus, is a function of its availability for entrance into the sac, and here the presence of a long duodenal mesentery allowed the distal stomach to enter the sac first.

The stout left crus and the strong and well developed phrenoesophageal ligament attaching the left lateral aspect of the esophagogastric junction to the left crus were sufficient to maintain the cardia in its proper anatomic position in spite of the fact that there was no counterbalancing support by means of the crus on the right side. The importance of this factor can be appreciated in the drawing of the technique used in the repair (Figure 3). The ability of the phrenoesophageal ligament to maintain the anatomical position of the cardia in the absence of the right crus suggests the importance of this structure and its usefulness in the repair of the more usual type of hiatus hernia.

SUMMARY

A patient is described who had a herniation through the esophageal hiatus of the gastric antrum, the pylorus and the beginning of the duodenum. A hernia sac was present which occupied the usual position of the right crus of the esophageal hiatus and which extended into the right hemithorax. The presenting symptoms were those of subacute obstruction of the stomach rather than incompetence of the esophagogastric valve mechanism, as the esophagogastric junction was maintained in its normal position by a normal left crus and phrenoesophageal ligament. Repair of the hernia, involving reduction of the contents of the sac into the abdomen and resection of the sac, completely relieved the patient's symptoms.

REFERENCES

1. Allison, P. R.: Personal communication.
2. Postlethwait, R. W., and Sealy, W. C.: *Surgery of the Esophagus*, Springfield, Ill., C. C. Thomas, 1961.

Correction

In the editorial, "Dr. Frank J. Sladen's Contributions to the Henry Ford Hospital", by John J. Mateer, M.D. on page 1, Vol. 10, No. 1, March (pt. 1) 1962 the following line should be inserted between the third and second lines from the bottom of the page: "for his keen insight in sensing that the great need for this hospital was for a large".