

SPONTANEOUS RUPTURE OF THE STOMACH

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ABSTRACT

Spontaneous rupture of the stomach is a rare but rapidly fatal accident. In the reported case, the galloping pace of deterioration claimed the life of the patient in spite of timely institution of resuscitative measures. However, in less catastrophic forms, provided the condition is recognised by its characteristic features, it is possible to improve the prognosis by expeditious surgical correction. It behoves us to briefly review the clinical features of this condition while presenting the case report.

Keywords: Stomach rupture, Diagnosis, Subcutaneous emphysema, Autopsy.

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INTRODUCTION

Well over 100 cases of spontaneous rupture of the stomach have been reported to date. A review of 44 cases from the literature appeared in 1963 (1). It is more appropriate to label the condition 'unexpected rupture' instead of 'spontaneous rupture', because it is a terminal event related to the sudden and massive dilatation of the stomach from various causes (2). The ingestion of sodium bicarbonate, gastronomic orgies, pyloric stenosis, and gastrointestinal haemorrhage have all been implicated (3). More recently, many reports of spontaneous rupture attributable to cardiopulmonary resuscitation have appeared.

A large amount of air may be entrapped in the stomach during mouth to mouth resuscitation or bag and mask ventilation, culminating in gastric rupture along the lesser curve (4, 5).

CASE REPORT:

A 35-year-old male presented with sudden upper abdominal pain of 4 hours duration. This was agonising enough to interrupt his sleep; the intensity increasing relentlessly thereafter.

On examination he was found to be in a state of shock. An intravenous infusion was started immediately. His blood pressure was 80/50 mm Hg with a low volume pulse rate of 110/min. Examination revealed mild distension of the abdomen and an upper abdominal tenderness. The percussion note was tympanitic with the normal liver dullness being completely masked. Even as the initial examination was under progress, he developed respiratory difficulty. Concomitantly, surgical emphysema was noticed to have appeared at the root of the neck. A diagnosis of a perforated hollow viscus was made and it was decided that he should undergo immediate laparotomy after resuscitation. All resuscitative

endeavours however failed to make any impact on his rapidly deteriorating condition. Abdominal distension attained massive proportions with incredible speed. Surgical emphysema also progressed rapidly; the whole body, except the lower half of the legs, became grotesquely swollen within a very short time. Barely one hour after admission, the patient went into cardiorespiratory arrest from which he could not be revived.

At postmortem examination, on opening the abdomen, a popping sound was emitted as air under tension escaped. About 3 litres of dirty brown fluid was present in the peritoneal cavity. Air was found to have dissected pervasively into the retroperitoneum, falciform ligament and coronary ligaments of liver, besides the subcutaneous tissue. There was a 10 cm long oblique laceration with ragged margins in the posterosuperior part of the stomach along the lesser curvature. The stomach was large sized and thin walled but no specific pathological abnormality apart from the aforementioned laceration was detected. The two folds of the lesser omentum were held apart by a large amount of entrapped air. The whole of the mediastinum, extrapleural space and bronchovascular pedicles were stuffed with ubiquitous pockets of air. The heart and great vessels were however free of any air embolus.

DISCUSSION

The clinical picture of a spontaneous rupture of the stomach can be succinctly described as one of severe shock, mostly leading to death, due to sudden spillage of large amounts of gastric contents both intraperitoneally and extraperitoneally.

In the presence of severe upper abdominal pain the following diagnostic tetrad should clinch the diagnosis (6):

- 1) Tympanitic abdominal distension
- 2) Rigidity of the abdominal parietes
- 3) Subcutaneous emphysema
- 4) Shock

Subcutaneous emphysema is the most distinctive and noticeable feature of spontaneous rupture involving the stomach. It is due to the escape of a large amount of air into the extraperitoneal space. It dissects rapidly into and through the mediastinum and presents at the root of

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neck. In our patient the emphysema, thus appearing, spread to the flanks and thoracic wall with dramatic speed. This feature is of great value in differentiating this condition from the other intraabdominal disasters like acute pancreatic necrosis and intestinal infarction.

In the majority of the recorded instances a vertical tear had been found on the lesser curvature. It has been suggested that overdistension of the stomach tends to make it spherical in shape and the maximum strain is borne by the fixed lesser curvature (7). Most interestingly, even in patients with gastric ulcers, gastric dilatation has led to tears at the lesser curvature and not at the site of chronic gastric ulcers (5, 6).

The rapidly fatal outcome of the condition can be ascribed to the poor cardiopulmonary performance secondary to gross abdominal distension. This tension pneumoperitoneum splints the diaphragm and impairs the venous return by compressing the inferior vena cava.

Moreover, the sudden flooding of the peritoneal cavity

by large amounts of gastric contents leads to an intense neurogenic reflex. Millar et al (6) found extensive air embolism in both systematic and pulmonary circulations in one of his cases. It is possible that this is another contributory factor in hastening the fatal outcome. Rapid identification of the condition is of paramount importance in improving the otherwise bleak prognosis in these patients. Conservative management is limited to resuscitative measures even as the patient is being shifted to operative room while surgical treatment consists of closure of the ruptured stomach in two layers and a thorough peritoneal toilet.

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