Spontaneous Rupture of the Stomach in a Patient with Chronic Renal Failure on Hemodialysis

J.A.		Oliver
J.J.		Guardiola
E.		Rius
J.		Teixido
C.		Garcia

Service of Nephrology, Institut Català de la Salut, Hospital de Tarragona Joan XXIII, Tarragona, Spain

J.A. Oliver, Service of Nephrology, Institut Català de la Salut, Hospital de Tarragona Joan XXIII, E-43007 Tarragona (Spain)

Dear Sir,

It is well known that chronic renal failure (CRF) is associated with multiple gastrointestinal symptoms and that some of these are relieved when hemodialysis (HD) is initiated [1].

Esophagitis and gastritis are diagnoses used to explain the upper digestive complaints of patients on HD. Endoscopy can confirm these diagnoses which are often the cause of bleeding [2].

The catastrophic picture of spontaneous rupture of the esophagus in patients on HD has been only reported one time [3] while spontaneous rupture of the stomach has not yet been reported. In the general population, this picture is also very rare. Up to 1986, only 72 cases had been reported [4] and thereafter, only a few more cases have been published [5-8], none in patients on HD.

A 60-year-old female experienced an acute low substernal pain radiating to her neck and back coinciding with intensification of her chronic vomiting.

On arrival to the emergency room, the patient was hypotensive and appeared acutely ill. She developed cardiorespiratory arrest. After successful resuscitation, she was admitted to our Intensive Care Unit.

Her systolic blood pressure was 50 mm Hg. Her abdomen was distended and tympanic. Plain abdomen X-ray revealed pneumoperitoneum. A gastric perforation was suspected and she underwent surgery a few hours later. She had been well until 1 year before admission when she developed fatigue and anorexia. Some months later, she started experiencing vomiting. An upper gastrointestinal X-ray examination with barium showed no abnormalities. Kidney size was 10 cm bilaterally, and there were no irregularities of the kidney silhouette. Laboratory data showed: creatinine 1,280 $\mu\text{mol/l}$ (14.5 mg%), hematocrit 25%, hemoglobin 8.6 g/l, serum immunoglobulins and complement were normal. Urine protein 2.5 g/day. Urine culture was sterile.

The patient was diagnosed as having CRF of unknown etiology and enrolled on chronic HD. She continued to vomit during HD sessions and at home. A new upper gastrointestinal series was normal.

One month prior to her admission, she experienced substernal chest pain that subsided spontaneously.

At laparotomy, abundant air was noted in her abdomen. A longitudinal tear was found in the area of the lesser curvature of the stomach. No other abnormalities were found. The stomach tear was sutured in two layers. Two hours later, she had a cardiac arrest from which she could not be resuscitated.

Spontaneous rupture of the stomach and esophagus are both rare entities. Certain factors such as gastric dilatation can facilitate rupture [9]. An abnormal gastric distension can precipitate rupture usually along the lesser curvature.

Another reported cause of spontaneous rupture is repetitive and violent vomiting. In this setting, the tear is usually located in the greater curvature [10].

In our case, recurrent vomiting was the likely cause of stomach rupture which occurred in the lesser curvature. The clinical presentation was not different from reported cases and similar to the only reported case of esophagus rupture in a patient on HD.

This isolated case of spontaneous rupture of the stomach in a population of many thousands of chronic dialysis patients reinforces the rarity of this disease.

References

Sevy N, Snape WJ Jr: Gastrointestinal abnormalities, in Massry SG, Glasscock RJ (eds): Textbook of Nephrology, Baltimore, Williams and Wilkins, 1989, p 1210.

Carrera F: Complicaciones digestivas en la insuficiencia renal crónica; in Llach F, Valderábano F (eds): Insuficiencia Renal Crónica. Madrid, Norma, 1990, p 361.

Klausner JM, Epstein L, Peter G, Lelcuk S, Skornick Y, Rozin RR: Perforation of the esophagus (Boerhaave's syndrome) during hemodialysis. Nephron 1985;40:372-272.

Lazebnik N, Iellin A, Michowitz M: Spontaneous rupture of normal stomach after sodium bicarbonate ingestion. J Clin Gastroenterol 1986;8:454-456.

Montresor E, Fichera M, Trivisone M: Spontaneous rupture of the stomach, Chir Ital 1988;40: 306-312.

Brismar B, Strandberg A, Wiklund B: Stomach rupture following ingestion of sodium bicarbonate. Acta Chir Scand Suppl 1986; 530P: 97-99.

van der Loos TL, Lustermaans FA: Rupture of the normal stomach after therapeutic oxygen administration. Intensive Care Med 1986; 12: 52-53.

Chandrasekhara KL, Iyen SK, Sutton AE: Spontaneous rupture of the stomach. Am J Med 1986;81:1062-1064.

Zer M, Chaimoff C, Dintsman M: Spontaneous rupture of the stomach following ingestion of sodium bicarbonate. Arch Surg 1970; 101: 532-533.

10 Weiss S, Mallory GK: Lesions of the cardiac orifice of the stomach produced by vomiting. JAMA 1932;98:1353-1355.