Esophageal Obstruction in Critically Ill Patients: A Potential Severe Complication of Enteral Nutrition

Enteral nutrition is the best feeding method in critically ill patients since it provides a complete nutrition with a low incidence of complications. However, some severe complications have been described [1]. We have seen three critically ill patients who, after several days of enteral nutrition (Standard Isosource; Novartis Consumer Health SA, Osthofen, Germany) and with no previous warning signs, presented esophageal obstruction because of solidification of the feed. Esophagoscopy revealed the presence of a hard yellowish-white mass, similar to the food administered, adhering to the walls of the esophagus and obstructing its inferior third (Figure **1**). After multiple washings with saline and water and extraction of the solidified fragments of enteral feed with biopsy forceps, the esophagus was successfully unblocked (Figure **2**). The main pathogenic factor involved in solidification of the feed is coagulation and precipitation of the casein present in the feed in an acid medium [1,2]. In addition, in critically ill patients, important risk factors for solidification of the feed include: gastroesophageal reflux; altered gastroesophageal motility, due to mechanical ventilation; drugs used in critical care that depress the central nervous system; some neurological diseases; and the simultaneous administration of sucralfate [1,2,3,4,5]. This complication of enteral nutrition may be severe, since a laborious endoscopic technique is required to extract the fragments of feeding formula and, not infrequently, several endoscopic sessions are required to unblock and clean the esophagus [1,3,5]. These repeated maneuvers may produce severe esophageal complications [1]. In one of our patients, submucosal hematoma was caused by the repeated use of biopsy forceps (Figure **2**). In cases where endoscopic extraction is difficult, pepsin or pancreatic enzymes may be used in an attempt to dissolve the solid fragments of feeding formula [5].

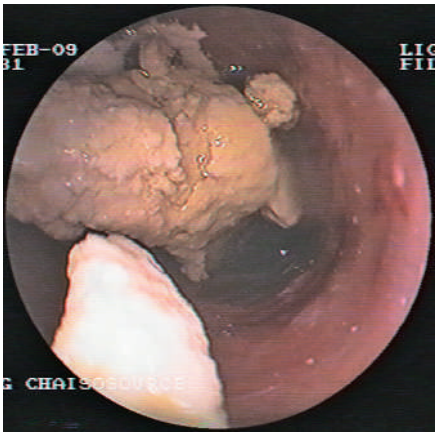

Figure **1** Endoscopic view of fragments of solidified enteral feed obstructing the esophagus.

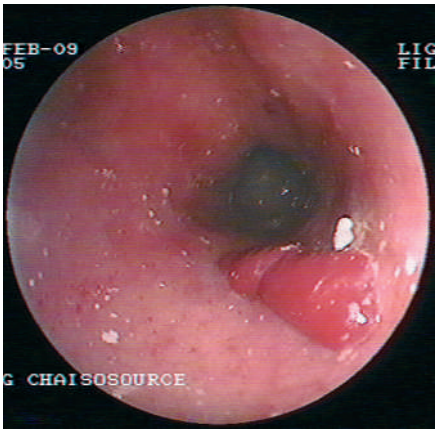

Figure **2** Endoscopic view showing resolution of the esophageal obstruction. A submucosal hematoma caused by the biopsy forceps during extraction of solidified enteral feed can be seen.

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