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Esophageal Obstruction in Critically III 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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