Malposition of a Sengstaken-Blakemore Tube: A Case Report

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Balloon tamponade is one of the treatment options for the acute management of bleeding varices. Many complications are encountered after the insertion of a sengstaken-blakemore tube. We report a patient who developed severe complications after the insertion of a sengstaken-blakemore tube. Measures to prevent such complications have been discussed in this article.

Key words: sengstaken-blakemore tube, complication

Case Report

A 44-year-old man had hepatitis B virus infection and cirrhosis of the liver for 3 years. He visited our emergency department with complaints of hematemesis and tarry stool. The patient’s temperature is 36.9°C, the heart rate is 88 beats per minute, and the blood pressure is 99/57 mmHg. The physical examination reveals clear consciousness, pallor appearance, mildly icteric sclera, and soft abdomen. The hemoglobin is 7.5 g/dL, the platelet count is 91000/uL, the blood urea nitrogen is 32 mg/dL, the creatinine is 1 mg/dL, the blood ammonia is 31 umol/L, the prothrombin time is 14 seconds, the aspartate aminotransferase is 166 IU/L, alanine transaminase is 98 IU/L, and the total bilirubin is 1.7 mg/dL. Endoscopic examination showed 3 esophageal varices with red color sign. Ligations were performed on these lesions. Two days after the endoscopic examination, hematemesis was noted again and the patient went into hemorrhagic shock. An endotracheal tube was inserted to protect the airway. A sengstaken-blakemore tube was inserted smoothly without resistance for temporary tamponade. Epigastric auscultation was performed to identify the position of the tube, and gastric bubbling sound was confirmed by medical staff. Subsequent chest roentgenogram showed a malpositioned gastric balloon in the left lower lung field (Fig. 1). Chest computed tomography showed that the tube had penetrated through the esophageal wall (Fig. 2). Because the patient was hemodynamically unstable, surgical repair could not be performed. The patient died of refractory hemorrhagic shock a few hours later.

Discussion

Balloon tamponade is one of the treatment options in the acute management of severe bleeding from the varices when endoscopic ligation or sclerosis cannot be readily performed. Many complications are encountered after sengstaken-blakemore tube insertion, and some of these complications such as esophageal or tracheal rupture are fatal\textsuperscript{1,2}. Epigastric auscultation can
Fig. 1  A chest roentgenogram showing a well-defined and hyperlucent area over the left lower lung field (black arrows)

Fig. 2  A computed tomography scan showing that the tube penetrated through the esophageal wall into the left pleural space (black arrowhead: cross section of the tube; black arrow: gastric balloon)
be used to identify the position of the tube, but the results can be misleading. Radiological confirmation is advised before complete inflation of the balloon. However, a partially inflated or an uninflated gastric balloon cannot always be visualized on a chest roentgenogram. A delay in inflating the balloon to compress bleeding in critically ill patients with unstable hemodynamics could have fatal consequences. Ultrasonography, which is more readily available in intensive care units, can be used to identify the tube. Taking into consideration the contrast of blood, gastric juice, and the characteristic jet of echogenic bubbles in the stomach\textsuperscript{[3]}, the use of ultrasonography to determine the position of the sengstaken-blakemore tube seems promising. However, the poor echo window due to massive ascites or obesity limits the clinical applicability of ultrasonography\textsuperscript{[4]}. Although the endoscopic confirmation of the sengstaken-blakemore tube has been reported\textsuperscript{[5]}, the unavailability of endoscopy equipment in an emergent setting and the skill involved hamper its use. We suggest that epigastric auscultation is not the only method of identifying the position of the sengstaken-blakemore tube. Radiological or ultrasonographic examination should be performed to confirm tube position\textsuperscript{[3,4]}. Esophageal perforation is a life-threatening injury, which requires acute management. Iatrogenic injury is the most common cause of esophageal perforation and is reported to account for 57.7-73\% of all cases\textsuperscript{[6,7]}. Procedures such as esophagoscopy, intraesophageal intubation, sclerosis of varices, and pneumatic dilatation result in iatrogenic esophageal injury. The incidence of preexisting esophageal disease was high in the study\textsuperscript{[8]}. It has also been suggested that preexisting esophageal disease could be a marker for iatrogenic esophageal perforation\textsuperscript{[5]}. In the case described here, the patient had bleeding varices and ligations were performed 2 days before the complication developed. His underlying esophageal disease might have contributed to the iatrogenic esophageal perforation.

References

加壓胃食道球導管誤置

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食道靜脈瘤出血是肝硬化病人常見的併發症，出血時使用Sengstaken-Blakemore導管來填塞止血，可在緊急時爭取時間以做後續的治療。然而此導管的置放是一種侵襲性的治療，須注意併發症的發生。在這裡我們報告一個病例，是有关Sengstaken-Blakemore導管所造成的嚴重併發症，文後並將探討預防此併發症發生的措施。

關鍵詞：加壓胃食道球導管，併發症