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Journal of Hyperbaric Medicine, Vol. 2, No. 4, 1987

CASE REPORT

Dislodged Gastric Bubble

P.A. d'Hemecourt and W. Stern

Shady Grove Adventist Hospital, 9901 Medical Center Drive, Rockville, MD 20850

Introduction

A 56-yr-old woman had a Garren-Edwards gastric bubble implanted 2 mo. before admission. She had been asymptomatic until several days before admission, at which time she became nauseated, began vomiting, and complained of abdominal pain.

Physical Examination

The patient was a well developed, well nourished, obese white female in mild distress: temperature: 98; pulse: 60; blood pressure: 148/90; HENT exam: unremarkable; cardiothoracic: unremarkable; abdominal: soft, nontender; bowel sounds were present but were decreased; laboratory data: white blood cell count: 10,000 cells/μm^2; all other tests were within normal limits.

Hospital Course

The patient was admitted and placed on i.v. hydration, potassium supplementation, and nasogastric suction, which recovered 800 ml of fluid. On the day after admission the patient was comfortable and had less cramping. An esophagogastro-duodenoscopy was done which revealed a hiatal hernia. There was no evidence of the bubble up to the second portion of the duodenum. The patient was continued on a conservative treatment program with mineral oil (by mouth) and rehydration. Upon reexamination of the x-ray it was felt that the bubble was in the proximal jejunum. A repeat endoscopy was done on the next day, using a colonoscope by mouth, which passed to the mid-jejunum where the gastric bubble was seen. It was punctured with the bicap electrocautery probe. An attempt to pull it back was unsuccessful. The patient was returned to her room and was treated further with mineral oil. The following day, the patient was seen in surgical consultation. Also on the following day it was evident from x-rays that the bubble did not seem to move. Thus, the hyperbaric medicine service was consulted.

The patient underwent a first exposure up to 2 ATA, and an immediate posttreatment x-ray revealed that the bubble had partially filled with contrast material. The next day the balloon was noted to be in the distal ileum. As the balloon did not pass through the distal ileum at the 24-h mark, a repeat dive

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of up to 2.5 atmospheres was done. Shortly thereafter the bubble passed per rectum.

Discussion

In the literature there have been several reports of entrapped intestinal balloons. Kulak et al. (1) reported 4 cases where a Kaslow gastrointestinal tube balloon was successfully removed with hyperbaric pressure of 4 atmospheres.

The mechanism of hyperbaric removal is probably explained by Boyle's law, which states the inverse relationship of pressure and volume. In the above case it is not clear whether hyperbaric therapy was key to the passage of the gastric balloon. However, the balloon was noted to have sat in the midportion of the jejunum for 2 d before its colonoscopic puncturing. In addition, the bubble sat in the same position for another 2 d, even with the use of heavy mineral oil to assist in its passing.

Presumably, under 2.5 atmospheres of pressure the punctured balloon was able to deflate, although some contrast material went in at the same time. This may have given the balloon the bulk to assist in passage.

With the recent increase in gastric balloons for the treatment of obesity, many are passing through the pylorus and becoming entrapped in the intestine. Hyperbaric pressure may be considered adjunctive in the passage of these balloons.

References

1. Kulak RG, Friedman B, Gelernt IM, Jacobson JH. The entrapped intestinal balloon colon deflation by hyperbaric therapy. Ann Surg 1978; 187 (3):10309–110312.