CASE REPORT

Trichobezoar—An Unusual Cause of Megaloblastic Anemia and Hypoproteinemia in Childhood

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A case of gastric bezoar in a 6-year-old child is discussed. The child presented with megaloblastic anemia due to vitamin B12 deficiency. In addition, hyperfolatemia and hypoalbuminemia were demonstrated. A combination of low B12 and markedly elevated serum folate in the presence of megaloblastic anemia suggests bacterial overgrowth within the upper small bowel. The implications of this combination of findings on the operative procedure for removal of the bezoar are discussed.

The presence of megaloblastic anemia in childhood is usually due to deficient intake, pernicious anemia, deficient absorption of folic acid (1) or vitamin B12 (2), or to metabolic defects in the utilization of these vitamins or their coenzymes (3, 4). Although bacterial overgrowth in the upper small bowel has been reported as a cause of megaloblastic anemia and vitamin B12 deficiency (5, 6), this syndrome is unusual in the first few years of life. Bacterial overgrowth in the small bowel is usually associated with diverticula, fistulae, strictures (7) and disorders of motility such as diabetes (8) and scleroderma (9). These are uncommon in childhood.

The present case illustrates a combination of trichobezoar and bacterial overgrowth in the upper small bowel producing megaloblastic anemia, severe vitamin B12 deficiency, elevated serum folate and marked hypoproteinemia due to a presumed protein wasting enteropathy.

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Because of hypoproteinemia, the patient was transfused with 25 g of salt-poor albumin, following which the serum albumin rose to 4.3 g% and total protein rose to 5.7 g%. The finding of markedly elevated folate levels and diminished serum $B_{12}$ suggested bacterial overgrowth in the upper small bowel (12-14). It was postulated, therefore, that the bezoar extended beyond the pylorus and was the site of bacterial overgrowth. For this reason, the patient received preoperative bowel preparation with kanamycin for 2 days.

On February 23, 1971, a gastrotomy was performed. A gastric mass was seen which extended into the duodenum and into the proximal 3 feet of jejunum; intussusception was present at the ligament of Treitz. As the bezoar was withdrawn into the pylorus, it was noted that the small intestinal portion was completely encrusted with food particles and feculent material (Figure 2). The patient rapidly recovered postoperatively. Her hematocrit rose without therapy to 35% prior to discharge on March 12, 1971.

When seen approximately 2 months later, the patient's serum $B_{12}$ was 550 ng/ml and serum folate was 6 ng/ml. Serum protein had risen to 7.1 g% with albumin of 4.8 g% and globulin of 2.3 g%.

**DISCUSSION**

Gastric bezoars have been reported in all ages and in both sexes and their composition has included hair (15), vegetable fiber (16), antacids (17), pitch (18), animal fat (19), shellac (20) and latex (21). Food particles may become trapped within the bezoar and add to its size. The complications include ulceration, bleeding, obstruction and free perforation (15), but more commonly a bezoar presents as a mass.

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**Fig 1.** Barium in the stomach outlines a large filling defect which occupies the body of the stomach and extends to the pylorus. A nasogastric tube is in place.