

Clinical Image

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Pancytopenia due to pernicious anemia

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Clinical image description

A 57-year-old man presented with generalized weakness, fatigue, upper abdominal discomfort, anorexia, and 30-pound weight loss in 6 months. On exam, scleral icterus and pale conjunctiva were noted. Laboratory evaluation was remarkable for pancytopenia – White Blood Count (WBC) was 2,700/ uL, Platelet Count (PLT) was 69,000/ uL, Hemoglobin was 6.5 gm/dL, and Mean Corpuscular Volume (MCV) was 101.6 fl. Vitamin B12 levels were found to be less than 150 pg/mL. Patient received two units of blood and one unit of platelets before undergoing an upper endoscopy (Figure 1) with gastric tissue biopsy (Figure 2). Later, workup for Vitamin B12 Deficiency revealed elevated homocysteine and methylmalonic acid, positive antibodies against Intrinsic Factor, and elevated Parietal Cell Antibodies, consistent with Pernicious Anemia.

Pernicious anemia is the end stage of type A chronic atrophic gastritis, an autoimmune condition that results in decreased parietal cells in the fundus and body of the stomach [1]. Parietal cells produce intrinsic factor, a necessary cofactor for the absorption of Vitamin B12 in the small intestine [1]. The median age of diagnosis is 60 years old because the progression to gastric atrophy and clinical anemia takes 20 to 30 years [3].

Abstract

A 57-year old male presented with generalized weakness, fatigue, upper abdominal pain, anorexia, and a 30-pound weight loss in 6 months. He was found to have severe pancytopenia and low Vitamin B12 levels with elevated Parietal Cell Antibodies and antibodies against Intrinsic Factor. The following images depict his upper endoscopy findings and gastric tissue biopsy. After treatment with Vitamin B12 supplementation, the patient showed vast improvements in his white blood cell count, platelets, and hemoglobin.

Keywords: Pernicious anemia; Pancytopenia; Vitamin B12 deficiency; Type A chronic atrophic gastritis; Upper endoscopy; Gastric tissue biopsy.

Pernicious anemia increases the risk for neurologic complications and gastric carcinoma [3]. Treatment is lifelong with dosage adjusted by severity; generally Intramuscular (IM) loading treatment followed by oral supplementation [2]. Patient was initiated on IM Vitamin B12 therapy and three months later showed improvements in WBC at 6,000/ uL, PLT at 187,000 /uL, Hemoglobin at 14.4 gm/dL, and MCV at 88.7 fl.

References

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3. Toh BH, van Driel IR, Gleeson PA. Pernicious anemia. *N Engl J Med.* 1997; 337: 1441-1448.

Add'l Images:

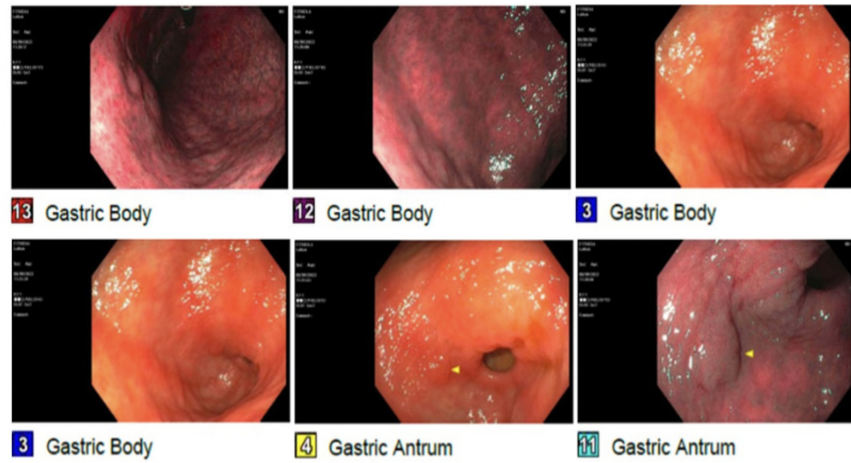
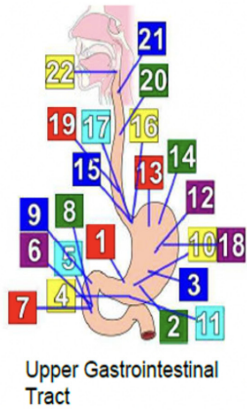


Figure 1: Gross endoscopy photos of the stomach, remarkable for diffuse atrophic gastric mucosa in the gastric fundus, patchy erythematous mucosa in the gastric body, and localized nodular mucosa in the gastric antrum.

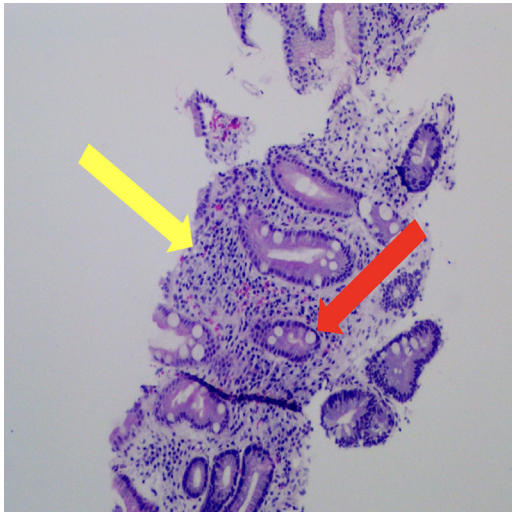


Figure 2: Endoscopic Tissue Biopsy photo of the stomach body, remarkable for intestinal metaplasia – replacement of stomach epithelium with intestinal epithelium – characterized by the goblet cells (red arrow), and chronic inactive inflammation (yellow arrow), evident by the infiltration of lymphocytes, plasma cells, and eosinophils characterized by the abundant small blue cells.