Capturing Hearts and Minds

PRESENTERS:

Dane Johnson, MD

Amanda Cartee, MD

A severe case of **pernicious anemia** illustrates a wide range of clinical manifestations in **cobalamin deficiency**

Case Presentation:

- 63-year-old-woman
- One month of
  - Early satiety
  - 24lb weight loss
  - Progressive substernal chest pain
- Unremarkable vital signs

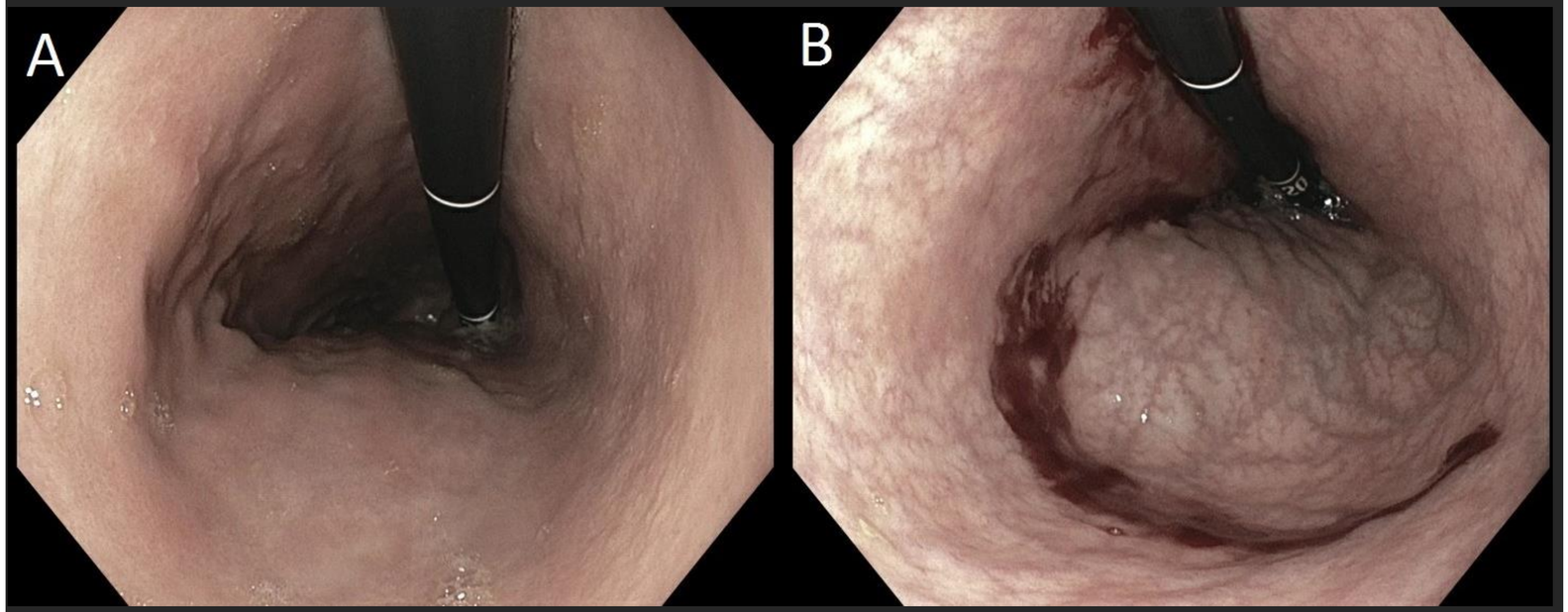
Past Medical History:

- Hypertension
- Hyperlipidemia
- Peripheral vascular disease

Labs:

- Electrolytes, liver enzymes, WBC unremarkable

Lab	Value
Hemoglobin	8.2gm/dL
Mean corpuscular volume	**137 fL**
Cobalamin	Undetectable
Methylmalonic acid	1890 nMol/L (H)
Intrinsic factor Ab	(+)
Parietal cell Ab	(-)
High-sensitivity troponin	Mildly elevated, flat trend
Lactate dehydrogenase	2173 units/L



(A) and (B) both represent retroflexed views of the stomach on EGD. Note the lack of rugation and visible submucosal vessels. In image (B), biopsies were taken prior to image snapshot.

Endoscopy:

- Diffusely atrophic stomach
- Gastric fluid pH was 7
- Pathology: **chronic atrophic autoimmune gastritis**

Course and Discussion

Cardiology team made diagnosis of type II non-ST-elevation myocardial infarction due to anemia

The patient had **significant improvement** in fatigue, chest pain, hemoglobin, MCV, and cobalamin levels after **high dose cobalamin injections**

Our case illustrates a wide range of clinical, laboratory, and endoscopic findings associated with autoimmune metaplastic atrophic gastritis

Severe cobalamin deficiency can lead to dysfunction of erythropoiesis and **intramedullary hemolysis**. Laboratory abnormalities may include elevated LDH, increased indirect bilirubin, low haptoglobin.

Diagnosis of pernicious anemia is made with clinical findings, cobalamin deficiency, and antibodies to parietal cells or intrinsic factor

Diagnosis of atrophic gastritis is considered with endoscopic findings and confirmed with histology