

Management of Atrophic Gastritis in Type I Gastric Carcinoid

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Goals and Objectives

- Function of the stomach
- Autoimmune atrophic gastritis and how it leads to the development of type I gastric carcinoid tumors
- Recognize and manage the complications associated with atrophic gastritis
 - Carcinoid tumors
 - Achlorhydria
 - Pernicious Anemia

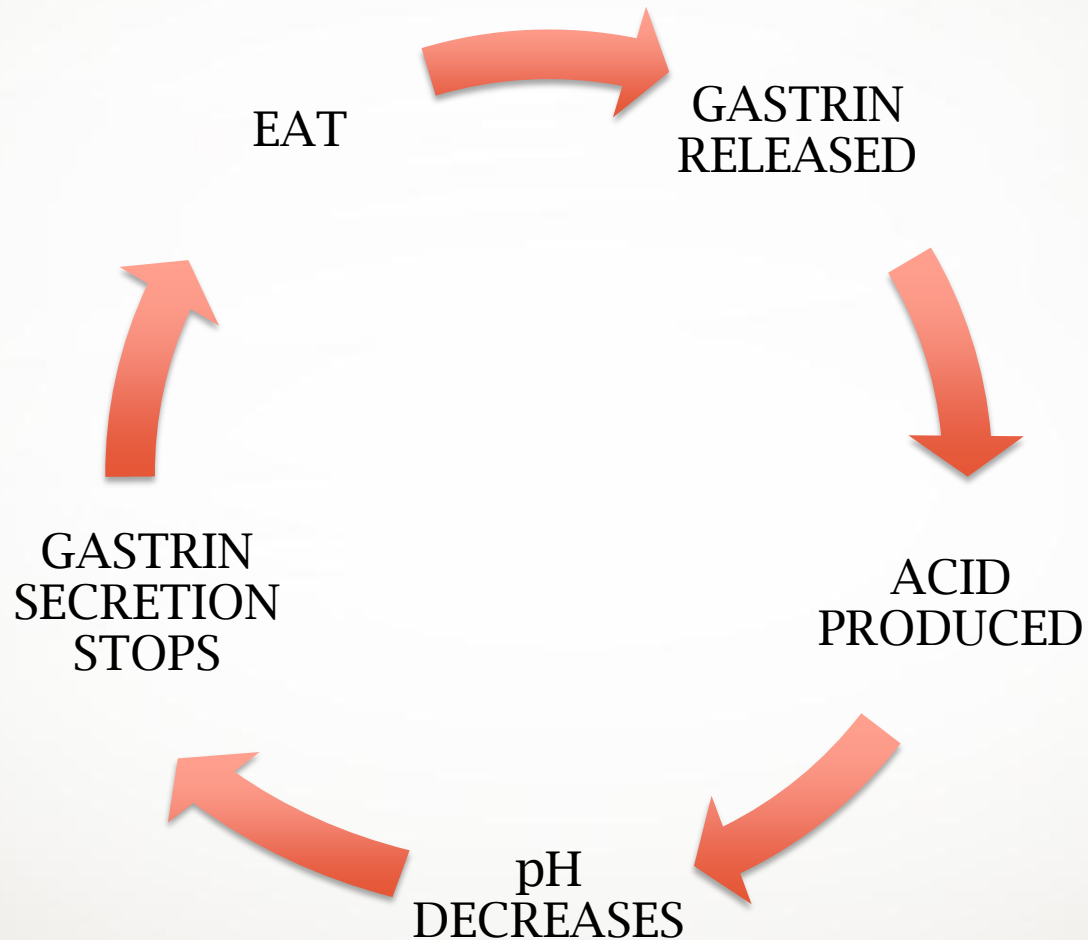
The stomach is an organ of digestion

The cells of the stomach release the products necessary for the digestion of food and absorption of nutrients.



- Hydrochloric acid: production is triggered by gastrin to lower pH in order to kill bacteria and activate digestive enzymes.
- Pepsin: enzyme needed for the digestion of protein.
- Intrinsic Factor: needed for B12 absorption.

Negative Feedback Loop



When bad things happen to good stomachs

Autoimmune Atrophic Gastritis

Antibodies target the parietal cells of the stomach.

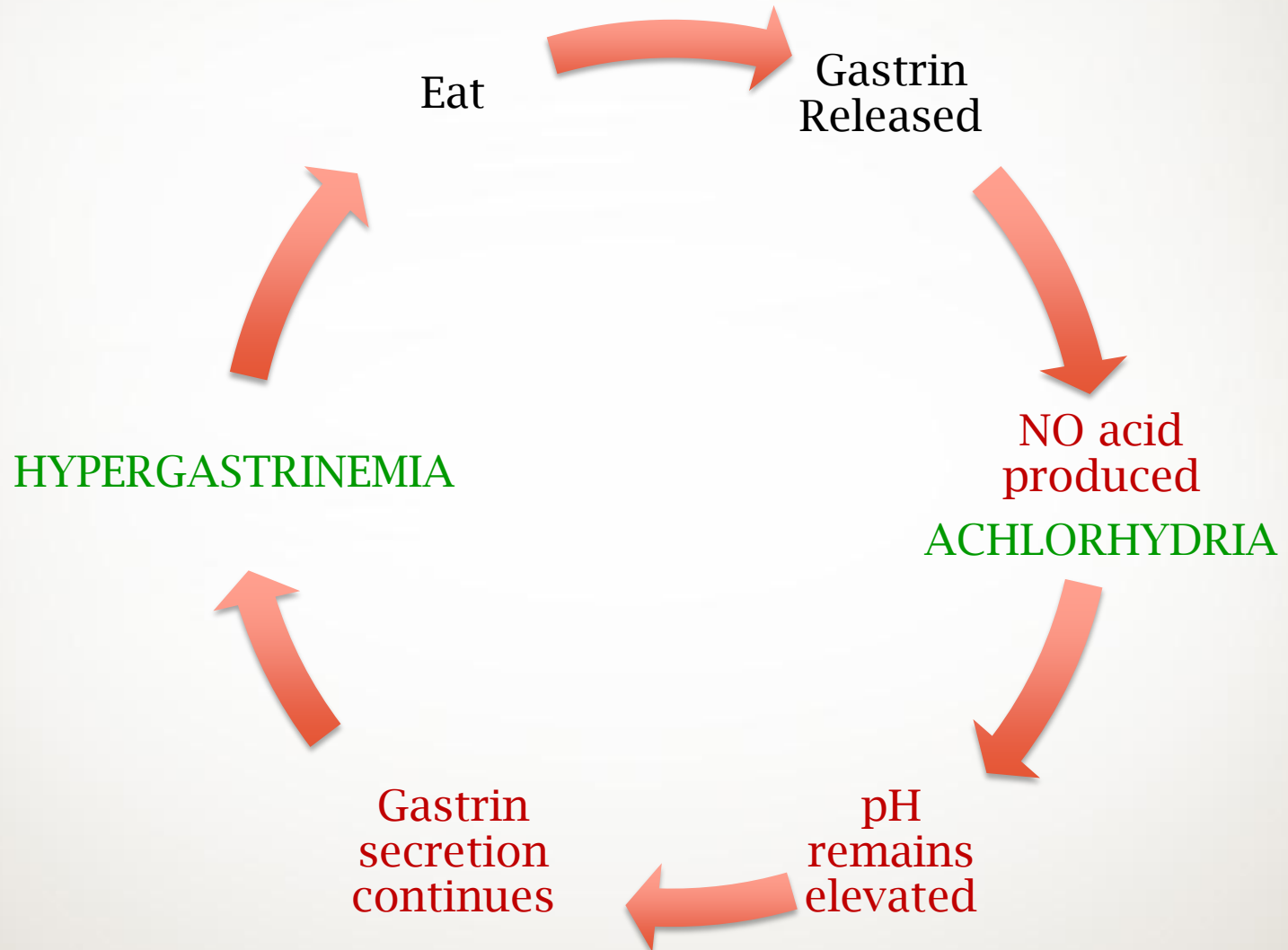


Chronic inflammation and destruction of gastric cells.



Eventual loss of function.

Broken Negative Feedback Loop



Bad Things.....

Hypergastrinemia: elevated serum gastrin

- Excess gastrin stimulates growth of stomach cells which can lead to the formation of type I gastric carcinoid tumors.

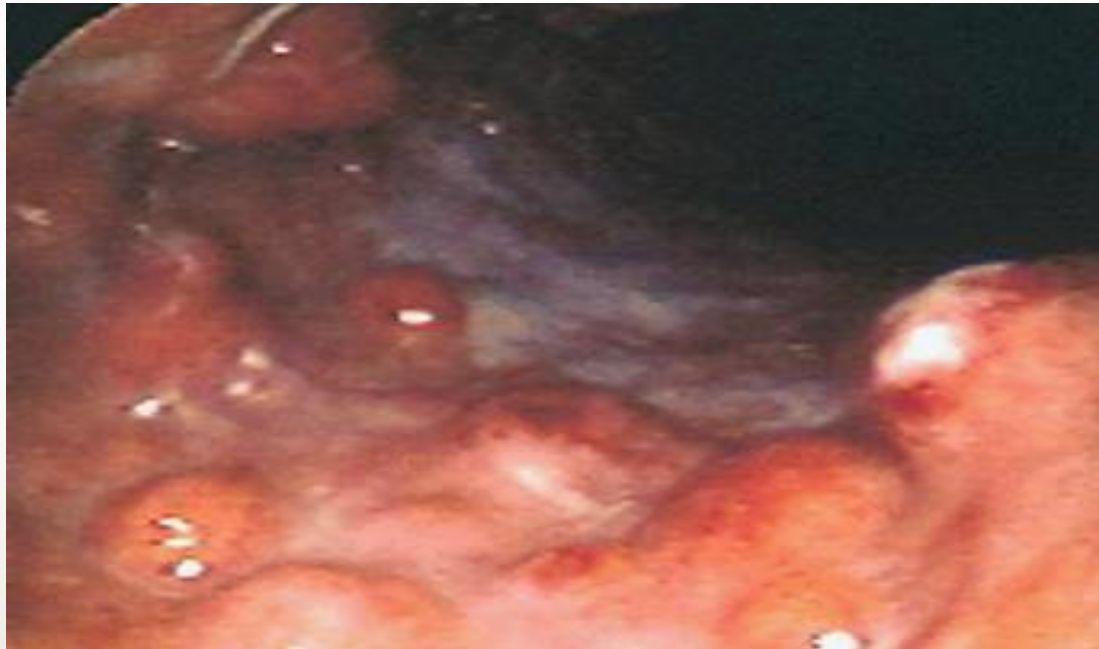
Achlorhydria: low or absent stomach acid.

- Indigestion, malabsorption and deficiencies
- Increases risk for bacterial overgrowth

Pernicious Anemia: Impaired uptake of B12 secondary to lack of intrinsic factor

- Megaloblastic anemia

Type I Gastric Carcinoid Tumors are a byproduct of hypergastrinemia in the setting of atrophic gastritis.



Type I Gastric Carcinoid Tumors

- 70-80% of all gastric carcinoids
- Multiple, small (<2 cm) tumors.
- More frequent in females
- Rarely metastasize, especially those <2cm
- Survival is excellent

Treatment

- Routine endoscopic surveillance
- Endoscopic polypectomy
- Gastric resection for severe cases

If the tumors are gone then why do I still feel so lousy?



Typical treatment of type I gastric carcinoids does not address the underlying process of atrophic gastritis and achlorhydria.

Achlorhydria

- Epigastric discomfort & indigestion
- Bloating & excessive gas
- Fullness after eating
- Nausea
- Burning in stomach and mouth
- Desire to eat when not hungry
- Diarrhea
- Vitamin & mineral deficiencies

Treatment

- Discontinue acid reducing medications
- Acidic beverages with meals
- Smaller meals
- HCL/pepsin supplement with meals for confirmed achlorhydria (high pH)
- Assess for and correct vitamin & mineral deficiencies

Pernicious Anemia

- Fatigue
- Shortness of breath
- Pale Skin
- Swollen, smooth, bright red tongue
- Tingling or numbness in fingers and toes
- Impaired memory
- Depression
- Mood Changes

Treatment

- Check CBC and B12 level
- B12 supplementation

Key Points

- **Carcinoids Happen**
 - Type I gastric carcinoids are the result of hypergastrinemia in the setting of atrophic gastritis.
- **Polypectomy is great but.....**
 - Don't ignore underlying condition.
 - Address achlorhydria
 - Monitor for signs of anemia
 - Assess and correct deficiencies

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