



## Pharmacobezoar in Ferrous Sulfate Poisoning – A Case Report

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**ABSTRACT:** Iron ingestion accounts for approximately 3% of calls to poison control centers. The profound local and systemic effects of an iron overdose have an associated mortality rate of 5%. Gastrostomy has been reported as a life-saving maneuver to extract the retained iron aggregates that are notoriously resistant to, removal by conventional emesis or lavage techniques. In this paper, we describe, the timely identification of a pharmacobezoar formed due to intentional overdose of ferrous sulphate and use of Emergency gastrostomy in the treatment of an iron overdose. A 20-year-old female, primigravida of 16 weeks period of gestation, attempted suicide by means of an intentional drug overdose, which included ferrous sulphate, at a calculated potentially lethal dose of 250 mg/kg. A gastric iron bezoar was seen on plain radiograph. The patient was managed with initial supportive treatment and then Emergency Gastrostomy. The Iron Bezoar was removed, the patient made a rapid post-operative recovery and completed her pregnancy to term and delivered a healthy baby. We conclude that, in addition to timely identification and supportive therapy, Emergency Gastrostomy is a safe option in the acute management of an Iron Pharmacobezoar.

**KEYWORDS:** Pharmacobezoar, Ferrous sulphate, Iron poisoning, Gastrostomy

### I. INTRODUCTION

Due to the extensive availability of over the counter iron preparations and the widespread use of iron compounds as prophylaxis in pregnancy, iron overdose is a recurring problem for Emergency Physicians occasionally, iron tablets form Bezoars. We describe a case of iron ingestion by a primigravidae where surgical removal of a bezoar was undertaken on emergency basis which yielded satisfactory outcome.

### II. CASE

A 20 year old primigravidae of 16 weeks period of gestation presented to the Emergency Room (ER) with alleged history of consumption of around 150 tablets of Ferrous sulphate + Folic acid about 2 hours back at her residence.

The calculated elemental Iron dose was 250 mg/kg potentially lethal. (Fig – 1)

ELEMENTAL IRON DOSE	EFFECT
< 20 mg/kg	Asymptomatic
20 – 60 mg/kg	Gastrointestinal symptoms
>60 – 120 mg/kg	Systemic toxicity anticipated
>120mg/kg	Potentially lethal

Adapted from The Textbook of Tintinalli's Emergency Medicine 8<sup>th</sup> edition

On presentation, the patient was conscious, oriented, hemodynamically stable, with complaints of pain abdomen and multiple episodes of vomiting. Systemic examination revealed abdominal tenderness, bowel sounds were heard. Cardiovascular and respiratory system examination were unremarkable. Gastric lavage with activated charcoal was done. Patient was conservatively managed with PPI infusion, antiemetics, and IV fluids. Erect X-ray the abdomen was obtained which revealed a PHARMACOBEOZAR in the stomach (Fig – 2).





Gastrotomy was performed and bezoar evacuated. Patient was hemodynamically stable and rest of the hospital stay was uneventful.

### III. DISCUSSION

In the 1990s, iron ingestion was the leading cause of poisoning deaths in the paediatric population. Nowadays, with the use of warning labels, safety packaging, change in formulations and public education campaigns, iron poisoning is less common, although isolated fatalities continue to occur. Evacuation of the stomach by traditional means of gastric lavage is always indicated. In certain cases these techniques may be ineffective in removing particulate matter.<sup>4</sup>

There may be several reasons for this lack of efficacy that are specific to iron ingestions. Iron has been shown to become adherent and embedded in the gastric mucosa. Iron is known to have a direct corrosive action on the gastrointestinal tract, causing inflammation, infarction, perforation, hepatic damage, metabolic acidosis, coagulopathies and shock. In several reports this embedded iron penetrated the submucosal tissue and eventually penetrated the entire thickness of the stomach wall.<sup>4-5</sup>

It has also been suggested that part of the difficulty in removal is due to partial dissolution of sugar or gelatin coatings. These coatings are sticky and promote mass formation that causes large iron concretions.<sup>4</sup>

Gastrotomy may be considered for a patient with massive iron ingestion or as a rescue decontamination method for a large iron concretion removal after failure of conservative therapy.<sup>5</sup>

### IV. CONCLUSION

Iron overdose may at times require surgical intervention. Many discussions of iron overdose fail to mention gastrotomy as a possible therapeutic intervention. Most patients with acute Iron ingestions may be managed by emesis, lavage and Desferoxamine, occasionally these methods fail, however, severe local and systemic toxic effects are seen with significant morbidity and even mortality. Gastrotomy can be an essential intervention to remove iron concretions and "pseudoconcretions" that are resistant to removal by conservative therapy.

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