

**Inconsistency of radiopaque iron tablets on serial abdominal x-rays after intentional iron overdose**

Justin Arnold<sup>1,2</sup>

<sup>1</sup>*University of Alabama at Birmingham, Birmingham, Alabama, USA,* <sup>2</sup>*Regional Poison Control Center, Children's of Alabama, Birmingham, Alabama, USA*

Background: Intentional ingestion of iron-containing tablets are reported to often, but not always, be radiopaque and detectable on abdominal x-ray. It is unknown what factors, other than formulation, may influence the detection of iron tablets on abdominal x-ray.

Hypothesis: Iron-containing tablets are inconsistently noted on abdominal x-ray and absence of radiopaque material on abdominal x-ray is a poor predictor for the degree of iron toxicity.

Methods: This is a single patient case report. A healthy 21 year-old woman presented to the emergency department after an intentional ingestion of "one mouthful" of both ferrous fumarate tablets and household bleach. She vomited within minutes of the ingestion. She complained of nausea, but denied abdominal pain, oral or throat pain, and was not drooling. Two hours post-ingestion her serum iron concentration was 200 mcg/dL, WBC was 7.5, and glucose was 91mg/dL. She had an initial abdominal x-ray that did not demonstrate any radiopaque pill fragments. A second abdominal x-ray was erroneously ordered simultaneously by the resident physician and was obtained six minutes later. The second abdominal x-ray showed a pronounced layering hyperdense material within the gastric body, suspected to be the ingested iron tablets. A repeat serum iron concentration was obtained at four hours post-ingestion and had increased to 310mcg/dL.

Results: Given the presence of radiopaque material on x-ray and increasing serum iron concentration, whole bowel irrigation was performed. The patient only complained of mild nausea and her serum iron concentration decreased to 241mcg/dL and 92mcg/dL, at 12 and 16 hours post-ingestion, respectively. Repeat abdominal x-ray 24 hours post-ingestion did not show the previously noted radiopaque material and the patient was discharged to psychiatry.

Discussion: Solid and non-chewable iron preparations are well known to often be radiopaque on abdominal x-rays after acute ingestions. This case report demonstrates that positive x-ray findings after ferrous fumarate ingestion may be a consequence of timing, patient position, or other causes despite the absence of radiopaque material several minutes earlier.

Conclusion: Negative abdominal x-rays after acute iron ingestion do not exclude the presence of a significant iron ingestion.