

LAPAROSCOPIC ROUX-EN-Y-GASTRIC BYPASS: A THERAPEUTIC SOLUTION FOR OBESE PATIENTS SUFFERING FROM HEREDITARY HEMOCHROMATOSIS – A CASE PRESENTATION



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Background:

- Laparoscopic Roux-en-Y gastric bypass (LRNYGB) may be an indicated therapy for obese patients suffering from hereditary hemochromatosis (HH)
- The gold standard treatment for iron overload in HH is therapeutic phlebotomy
- We present a case of an obese female who was found to have newly diagnosed HH during work-up of liver disease who was referred for bariatric surgery
- We theorized that after a LRNYGB she would have a decrease in her BMI and reduce her need for future therapeutic phlebotomy

Methods:

- The patient’s iron saturation, ferritin, BMI, and need for phlebotomy were trended in relation to her LRNYGB for a period of nine months pre- and post-operatively

Results:

- At diagnosis, the patient's fasting iron saturation and ferritin were 52 and 430 respectively, and a liver biopsy revealing mild steatosis with severe iron accumulation in the peri-portal hepatocytes with only rare Kupffer cell involvement consistent with the diagnosis of HH (Figure 1 a, b, c)
- She was subsequently referred for serial phlebotomy with a therapeutic ferritin goal 50-100 microgram/L
- Following LRNYGB her phlebotomy demand was reduced from monthly pre-operative treatments to only three post-operative treatments in order to meet her ferritin goal (Fig 2a)
- In addition, her BMI was reduced from 38 to 30.88 with a resulting weight loss from 218 lbs to 174 lbs between her surgery in December 2018 to her last follow-up in October 2019 (Fig 2b)

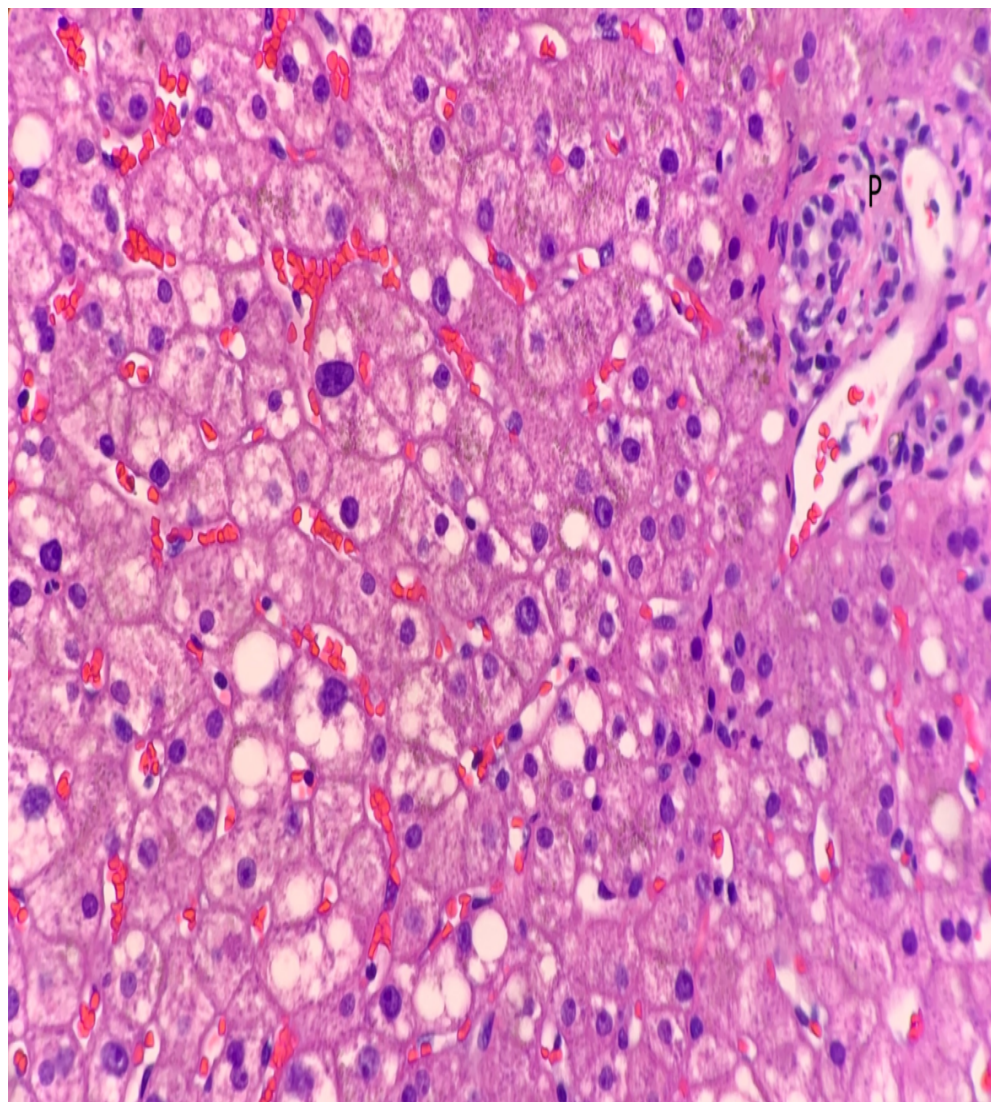


Fig 1a) H&E stained: Portal tract (P) containing bile duct, hepatic artery, and portal venule

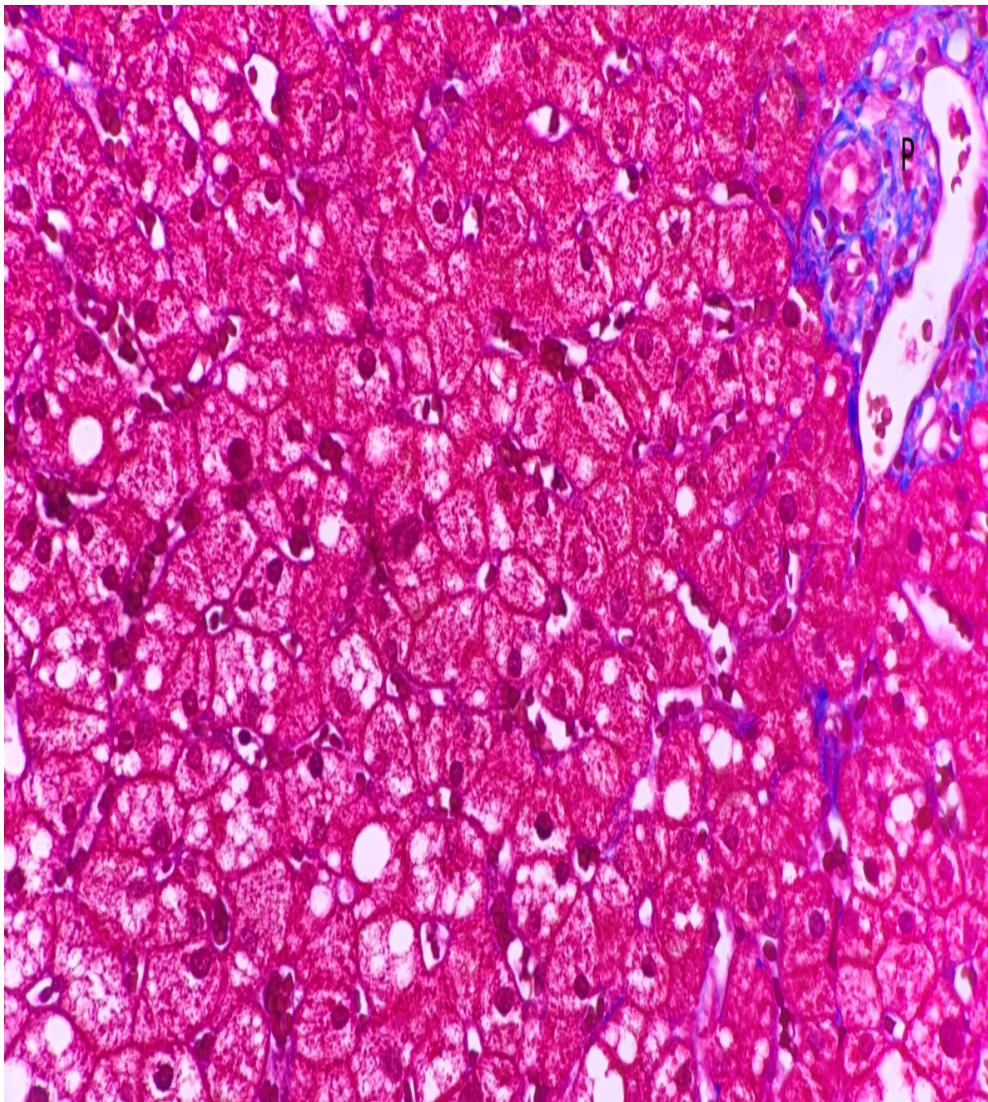


Fig 1b) Masson trichrome stain: No fibrosis is identified

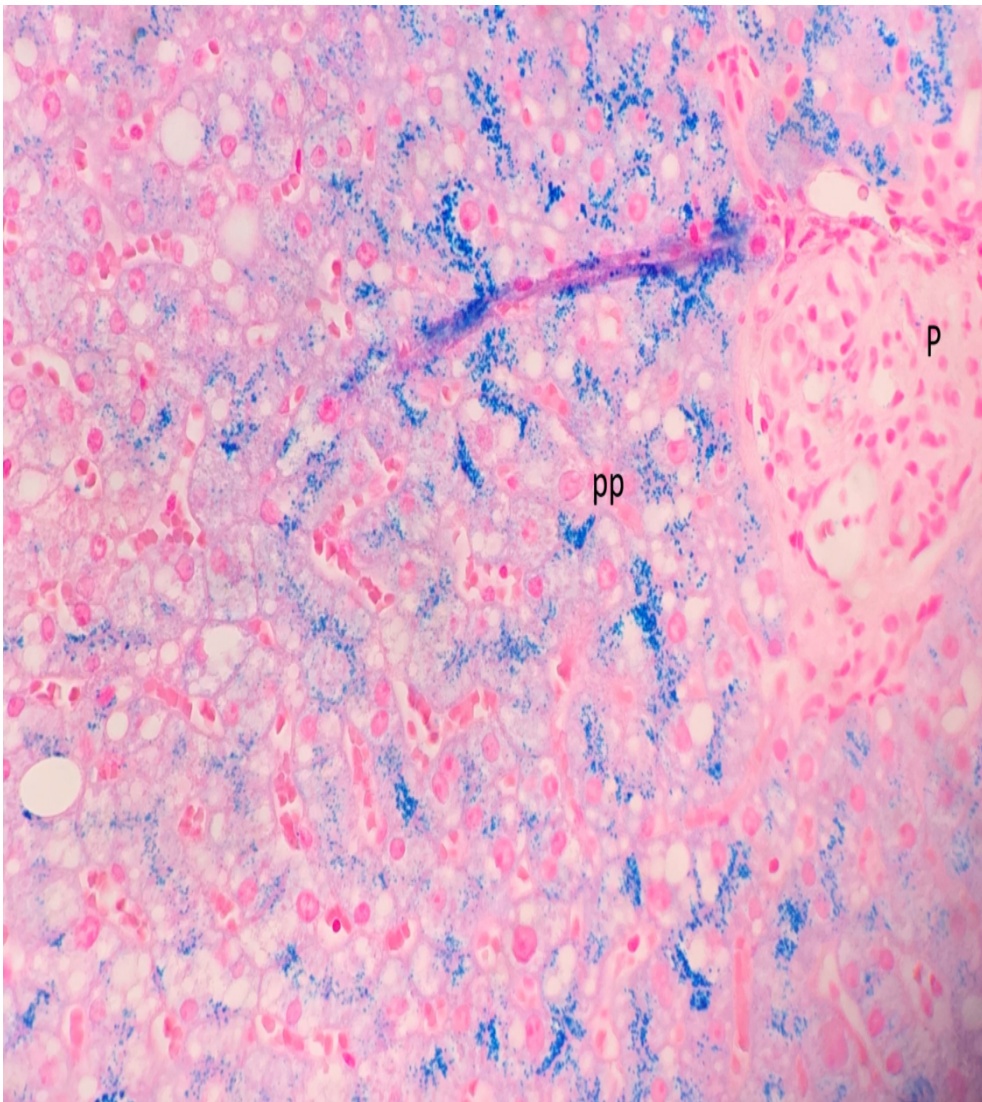


Fig 1c) Gomori’s iron stain: Peri-canalicular iron within hepatocytes. The iron is most heavily deposited within peri-portal (pp) hepatocytes

DISCUSSION:

- HH is a genetic disorder that is most commonly the result of mutations in the HFE gene that results in impaired metabolism with increased absorption of iron and subsequent deposition into the body’s tissues
- In our patient seeking weight loss options, LRNYGB was considered ideal due to its attributed iron malabsorption, with the purpose of decreasing the need for future therapeutic phlebotomy treatments
- Understanding that iron is preferentially absorbed in the duodenum and proximal jejunum, absorption can be surgically manipulated with the LRNYGB
- This case not only highlights the importance of screening for malabsorption of vitamins and micronutrients in our bariatric population, but offers an example of therapeutic malabsorption in an iron overloaded patient

CONCLUSIONS:

- **LRNYGB is an effective means of decreasing serum ferritin & need for phlebotomy**
- **HH may be considered a qualifying comorbidity for bariatric surgery**

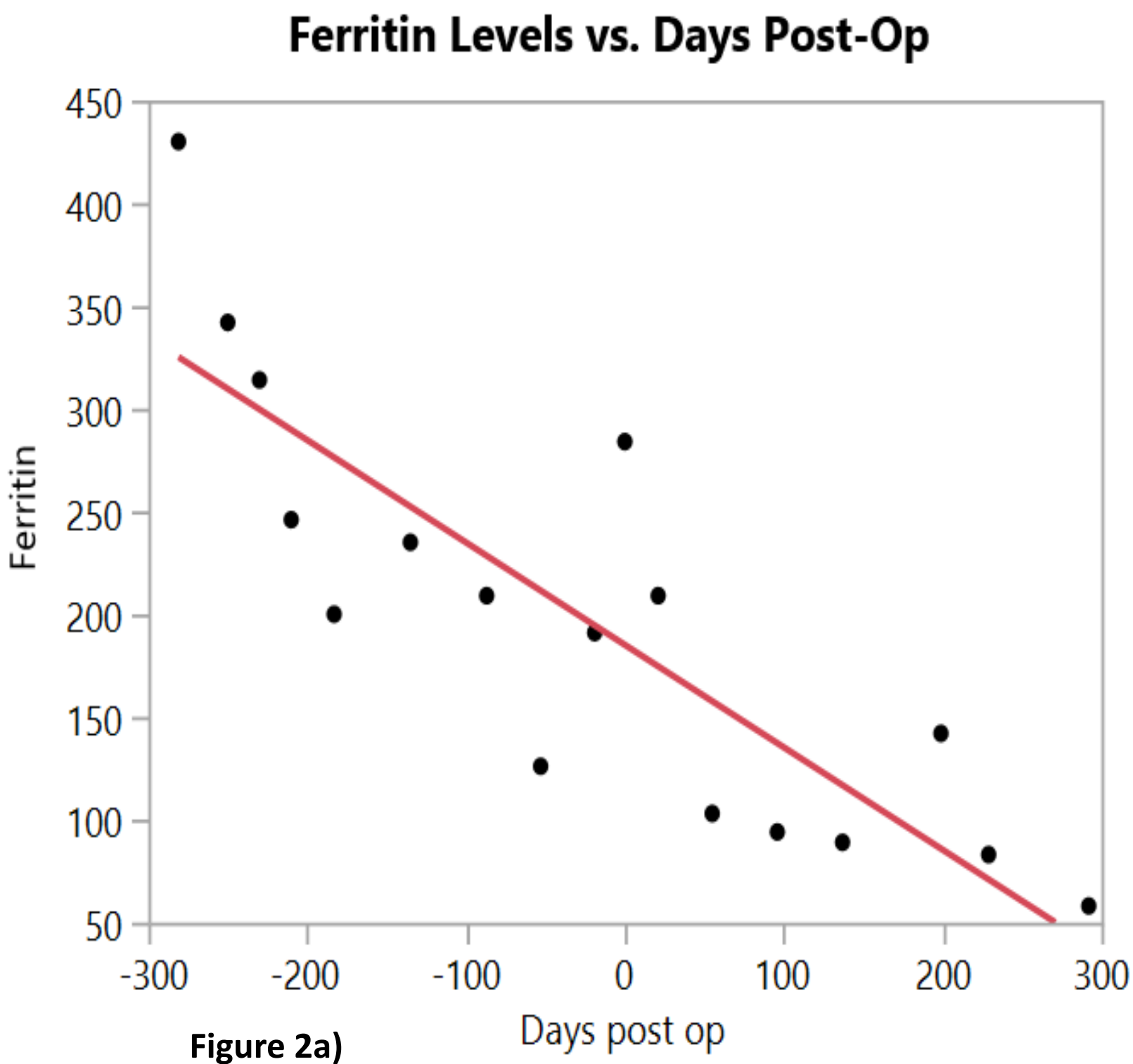


Figure 2a)

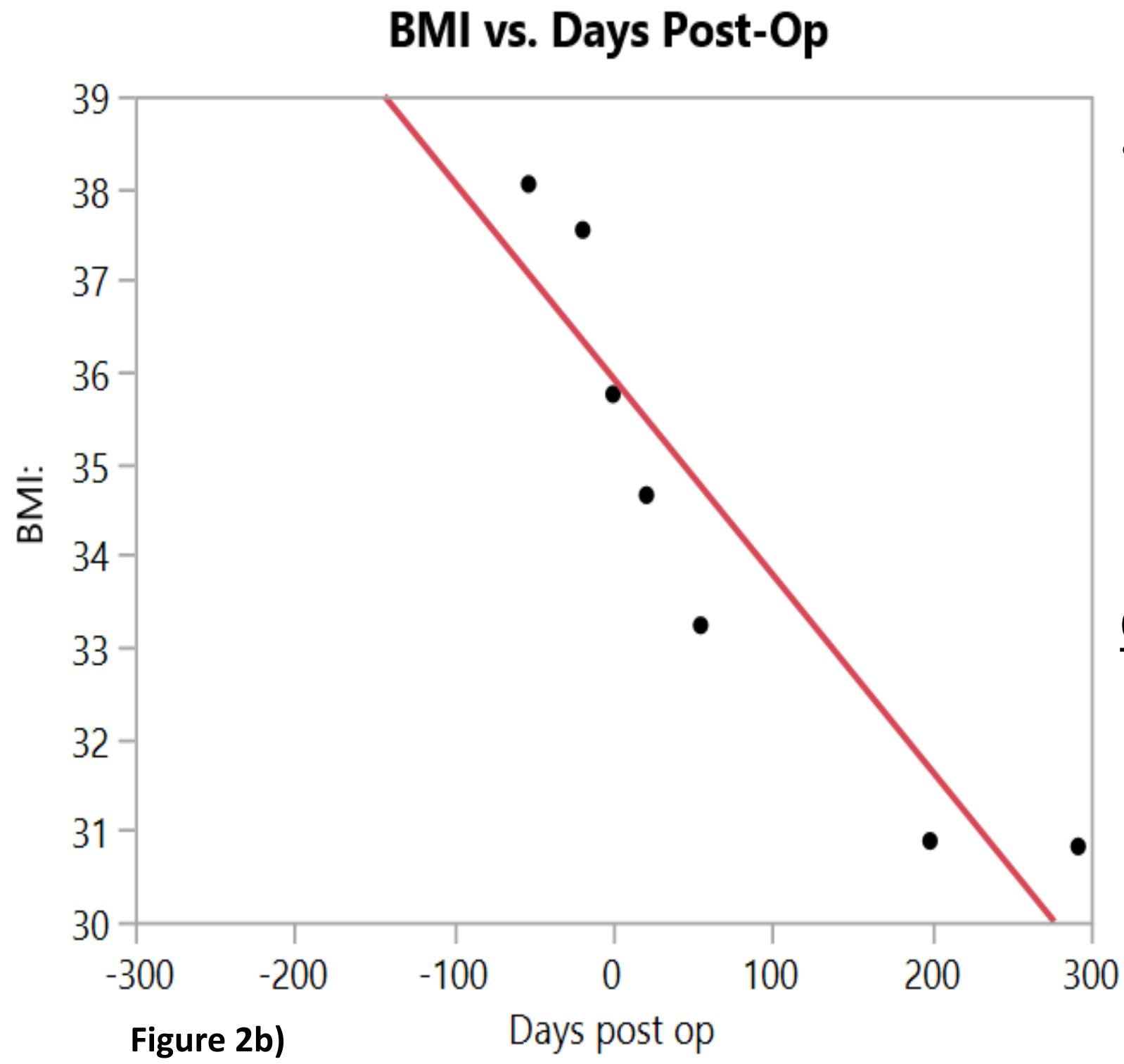


Figure 2b)

LRNYGB works to decrease or eliminate the need for therapeutic phlebotomy immediately post op, working independently of weight loss

References

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