BACKGROUND: Roux-en-Y gastric bypass and sleeve gastrectomy (gastric sleeve) remain common procedures for treating morbid obesity. Of the possible postoperative complications, perhaps the most significant is an extra-luminal leak. Early detection is important given the potential of peritonitis and associated high mortality. Extravasation of barium into the peritoneum is also associated with peritonitis, a potentially life-threatening complication, thus gastrografin is currently the standard oral contrast medium used for detecting postoperative leaks given it is water-soluble properties; however its sole usage may be associated with high false negative rates. Barium sulfate, given its higher density and presumed greater adherence to sites of extra-luminal leakage has been postulated to be a better contrast agent for the detection of leaks. Consequently, many institutions begin with an upper-GI series using gastrografin, and if negative, do an immediate follow-up upper-GI examination using barium as the oral contrast agent. Our intention was to investigate whether or not a follow-up upper-GI exam using barium would increase the sensitivity of detecting postoperative leaks.

METHODS

The institutional review board (IRB) approved this HIPAA-compliant study, and the need for patient informed consent was waived. Patients who had recently (within 2 weeks) undergone a Roux-en-Y gastric bypass or sleeve gastrectomy (Gastric Sleeve) referred to Arnot Ogden Medical Center radiology department for an upper gastrointestinal (UGI) series were included in this study. Patients were initially given 3% gastrografin (full-strength concentration). If negative, as per protocol, the upper-GI exam was repeated using thin barium (50% barium sulfate, 50% water). Only patients with an initial negative upper-GI series using gastrografin were included in this study. Patients under the age of 18 years old were excluded as well. Each patient functioned as their own control. The follow-up barium upper-GI exam acted as the experimental arm of the investigation. For eligible patients, the medical record data was extracted by the project authors and recorded as anonymized data which was used for statistical analysis.

HYPOTHESIS: Follow-up barium upper-GI exams after an initial negative gastrografin exam will detect small leaks that would have otherwise gone undetected.

Preliminary results demonstrate no additional benefit to performing a follow-up upper-GI exam using barium as the contrast agent. The small sample size limits the statistical power of the preliminary results. We intend to continue the project and submit for publication once sufficient data has been obtained.

REFERENCES

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