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# Hiatal Hernia is More Frequent than Expected in Bariatric Patients. Intraoperative Findings during Laparoscopic Sleeve Gastrectomy

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**Abstract**
*Background:* obesity is a risk factor for gastro-esophageal disease (GERD) and hiatal hernia (HH) occurrence. A substantial number of obese patients have HH. Esophago-gastro-duodenoscopy (EGD) and Barium X-ray oral study are used for preoperative gastrointestinal evaluation. Not all HH can be diagnosed before surgery, some are discovered during laparoscopic sleeve gastrectomy (LSG).
*Aim:* to assess the possible correlations between intraoperative presence of hiatal hernia (known or new discovered) and preoperative clinical, radiological and endoscopic data specific for GERD and HH. Setting: single institution Ponderas Academic Hospital, Center of Excellence in Bariatric and Metabolic Surgery.
*Material and Methods:* The prospectively maintained database of the institution was retrospectively quired to identify all the patients who underwent primary Laparoscopic Sleeve Gastrectomy (LSG) without/with concomitant hiatal hernia (HH) repair between January 2015 to May 2016. Patient characteristics, co-morbidities, GERD symptoms, radiologic oral contrast study, endoscopy and operative details were analyzed.
*Results:* six hundred ninety-five patients (260 male and 435 female) were identified meeting inclusion criteria (LSG ± HH repair). Mean age of patients was 41 ± 11.71years and average body mass index (BMI) was 41.96 ± 7.28 kg/m². Preoperative upper gastrointestinal contrast series and endoscopy were performed for entire group study and demonstrated a hiatal hernia in 339 patients (48.78%). In all these cases, HH was repaired concomitantly with LSG. One hundred ninety-two patients (56.63%) were diagnosed with HH before operation and confirmed intraoperatively (Group A). The diagnosis of hiatal hernia was established intraoperatively for 147 patients (43.37%) – group B, using the surgical protocol for active identification of preoperative undiagnosed hiatal hernia - SPAIH.
*Conclusion:* preoperative investigations such as EGD and barium X-ray oral study are suboptimal in diagnosing HH, therefore, in a significant number of patients, the presence of HH has been established using our surgical protocol – SPAIH. Crura approximation (HHR) concomitantly with laparoscopic sleeve gastrectomy is reproducible, may prevent the HH progression and possible GERD complications in the postoperative period of time.
**Key words:** surgical protocol, active identification, intraoperative diagnosis, SPAIH, hiatal hernia, GERD, gastroesophageal reflux disease, obesity, laparoscopic sleeve gastrectomy