COMPARISON OF GASTRIC EMPTYTING AND GASTRO-ESOPHAGEAL REFLUX USING SCINTIGRAPHY BETWEEN LAPAROSCOPIC SLEEVE GASTRECTOMY AND MINI GASTRIC BYPASS

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BACKGROUND:

Radionucleotide scintigraphy analysis of gastric motility is non-invasive, reproducible, simple to perform and accurate. It can also be used to detect the presence of gastroesophageal reflux qualitatively in morbidly obese patients before and after undergoing bariatric procedure. Currently, there is paucity of data regarding quantitative changes in gastric physiology and motility after bariatric procedures. The present study was designed to compare the gastric emptying time and gastric reflux using scintigraphy in both pre-operative and post-operative cases of laparoscopic sleeve gastrectomy(LSG) and laparoscopic mini gastric bypass(MGB).

MATERIALS AND METHODS:

A total of 14 morbidly obese patients with medical co-morbid conditions attending the metabolic surgery clinic and surgery outpatient services at Lok Nayak Hospital from August 2019 to August 2021 were included in the study. Patients were evaluated for intra-operative and post-operative parameters, change in gastric emptying half time and absence or presence of gastroesophageal reflux using scintigraphy scans at 3 months post operatively. (Figure 1 and 2)

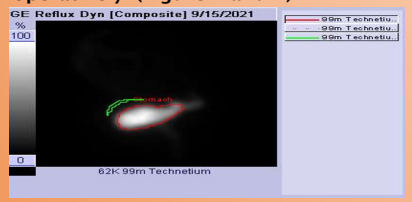


FIGURE 1: GASTRIC EMPYTING SCINTIGRAPHY AFTER LSG

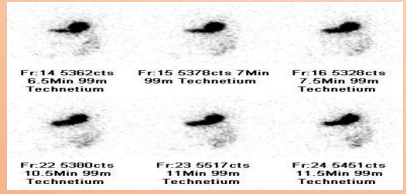


FIGURE 2: GASTROESOPHAGEAL REFLUX SCINITGRAPHY STUDY AFTER MGB

RESULTS:

The mean Gastric Emptying Scintigraphy (GES) T1/2 (minutes) decreased from 136.89 min to 42.78 minutes at 90 days (p-value = 0.004) in LSG group and from 163.80 to 35.80 (p-value = 0.062) in MGB group. There was no significant difference in the trend of GES T1/2 over time between the two groups (p = 0.529). (Table 1) None of the patients in the study had gastroesophageal reflux preoperatively (symptom scoring and on reflux scintigraphy). Post operatively at 90 days, all patients of LSG group continued to remain reflux free with normal reflux scintigraphy. All patients in MGB group remained symptom free for reflux, however 20% showed evidence of reflux on scintigraphy at 90 days. (Table 2)

GES T1/2	LSG	MGB	P- VALUE
Pre-operative	136.89 (155.88)	163.80 (95.57)	0.317
At 90 days	42.78 (26.44)	35.80 (20.07)	0.593

TABLE 1: CHANGE IN GES T1/2 OVER TIME

	LSG		MGB	
	% GERD on symptom scoring	% GERD on reflux scintigraphy	% GERD on symptom scoring	% GERD on reflux scintigraphy
Pre-operative	0%	0%	0%	0%
90 days	0%	0%	0%	20%

TABLE 2: GASTROESOPHAGEAL REFLUX STUDY AFTER LSG AND MGB

CONCLUSIONS:

There was no statistically significant difference between LSG and MGB in terms of gastric emptying on scintigraphy. Symptom scoring and gastroesophageal reflux scintigraphy done pre-operatively showed that no patient had reflux. All patients remained symptom free for reflux at 90 days after surgery. No reflux on scintigraphy was seen in any LSG patient post-operatively. However, 20% of the MGB patients showed evidence of reflux on scintigraphy.