ORIGINAL RESEARCH PAPER
Volume - 11 | Issue - 02 | February - 2022 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

STAMM VS WITZEL FEEDING JEJUNOSTOMY IN CORROSIVE POISONING ESOPHAGUS- A COMPARATIVE STUDY

Surgery

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ABSTRACT

Maintaining nutrition in corrosive poising patient is a challenging Job. Feeding Jejunostomy is widely regarded as acceptable enteral nutrition strategy for these patients. Following study is aimed at comparing two most widely performed techniques for feeding jejunostomy in these patients.

KEYWORDS

Feeding jejunostomy, corrosive poisoning

INTRODUCTION

Despite other methods of enteral nutrition like nasogastric/nasojejunal tube, feeding gastrostomy -Feeding Jejunostomy (FJ) is most suitable for patients where esophagus and/or stomach is not available for enteral nutrition like esophageal carcinoma/gastric malignancy/ corrosive stricture esophagus [1]. In corrosive poisoning , feeding jejunostomy is performed to maintain enteral nutrition as esophagus and stomach are usually injured by the chemical [2]. Although various techniques of jejunostomies are in vogue like Stamm technique, needle catheter technique,open gastrojejunostomy, Percutaneous endoscopic technique, laparoscopic technique but the 'Witzel technique' (longitudinal or transverse) is synonymous with feeding jejunostomy[3,4,5,6,7].

Following study is aimed at comparing Stamm and Witzel technique for FJ performed on patients suffering from corrosive poisoning.

MATERIALS AND METHODS

This retrospective comparative study is performed at cardiothoracic and vascular surgery department in RGKar medical college, Kolkata. Patients who suffered from corrosive poisoning and underwent FJ creation (by different surgeons) between January 2015 to January 2020 were included in the study. Patients who lost to follow up were excluded from the study. OT register, OPD register, patients charts and records were analysed and data collected. Total 101 patients were included in the study . they were divided in two groups. Group A(n=37) – in whom Stamm FJ were done and group B(n=64)- in whom Witzel FJ were done. SPSS 20 was used for statistical analysis . The method of creation of FJ were as follows- a purse string suture was made at the antimesenteric border using 3-0 mersilk@ proximal jejunum 10-20 cm distal from the ligament of Treitz and an incision is made with electrocautery in the jejunal wall in the center of the purse string suture. A No.18 Foley's catheter was passed into abdomen via a separate stab incision through the abdominal wall. The Foley's catheter was inserted into the lumen of the jejunum and advanced distally for 3-4 cm. For Witzel jejunostomy [5]-The purse-string suture is secured in place, and a serosal tunnel was then constructed by placing 3-0 silk sutures from the catheter's exit site extending 5 to 6 cm proximally. whereas in Stamm feeding jejunostomy[4]A circumferential stitch around the feeding tube is placed with 3-0 mersilk between parietal peritoneum and serosal layer of jejunum.The proximodistal loops of intestine is anchored to parietal peritoneum with 3-0 silk sutures spreadover 2 to 3 cm to prevent twisting of the loop/volvulus and possible obstruction.The catheter is secured to the skin with a 3-0 nylon suture. Feeding started 24-48 hours after FJ creation and amount were gradually increased.

RESULTS

Table 1 shows demographic characteristics of patients

Total n=101	Group A(n=37) Stamm	Group B (n=64) Witzel	P value
age	27.8±9.1 (18-47)	28.7±10(16-57)	0.652
male	17	21	0.207
female	20	43	
Acid ingestion	30	51	1
Alkali ingestion	7	13	
Suicidal ingestion	23	39	1
Accidental ingestion	14	25	

From the table it is evident that no demographical significant difference exists among study population .

Table 2 shows complication associated with FJ

Total n=101	Group A(n=37) Stamm	Group B (n=64) Witzel	
Intestinal obstruction	1	2	1
Leakage of intestinal secretion	2	0	.132
Tube dislodgement	3	1	.138
Tube blockage	4	5	.721
cramp	6	9	.778
peritonitis	1	1	1
Abdominal distension	5	8	1
diarrhoea	11	13	.335
constipation	2	3	1

In group A. the sole patient having intestinal obstruction was reoperated, cause of intestinal obstruction was bands and adhesions. In group B , amongst 2 patients of intestinal obstruction, one patient was managed conservatively and other patient was operated , here also cause was bands and adhesions. Leakage of intestinal secretion in group A subsided gradually. Tube dislodgement and blockage were managed by tube change. Dislodgement was caused by patient inadvertently pulling the tube out and blockage was caused by high viscosity feed . Peritonitis patients were reoperated alongwith antibiotic administration, cause was leakage from other intestinal anastomotic sites which were managed accordingly. Abdominal cramps ,distension, diarrhoea, constipation were managed with medications/ proper feeding advice.

DISCUSSION

FJ is done as an additional procedureduring major surgery of the upper digestive tract, where nutrition can be delivered directly into jejunum. It is also used as an additional procedure in laparotomy patients where complicated postoperative recovery is anticipated, prolonged fasting period, hypercatabolic state, or where chemotherapy or radiotherapy is required. It is done as a sole procedure in neurologic and congenital illnesses, geriatric patients with difficult care demands, tumors of the head and neck& for corrosive poisoning of esophagus.[2,3]

Bowel obstruction distal to the site of tube implantation is absolute contraindication to a FJ. Relative contraindications are 1)Abdominal wall infection at the placement site,2)Severe ascites, 3)Peritonitis, 4)History of bowel necrosis from the previous jejunostomy, 5)Systemic Severe coagulopathy, 6)Hemodynamic instability requiring the use of vasopressors, 7)Ventilatory dependence preventing transport to the operating room[3].

The complications[3,8] seen with jejunostomy can be mechanical, infectious, gastrointestinal, or metabolic. They may be like 1) tube dislocation,2) obstruction ormigration of the tube, 3)cutaneous or intraabdominal abscesses,4) enterocutaneous fistulas,5) pneumatosis, 6) occlusion, 7)intusseption and 8) intestinal ischemia. The infectious complications are 1)aspiration pneumonia and 2) contamination of the diet. The gastrointestinal complications are1)diarrhea ,2) abdominal distension, 3)colic, 4)constipation, 5)nausea, and 6) vomiting. The

metabolic complications are 1) hyperglycemia, 2) hypokalemia ,3)water and electrolyte imbalance, 4) hypophosp hatemia, and5) hypomagnesemia -These complications are secondary to inadequate selection of nutrition relative to the characteristicsof the patient, to inadequate management of the mixture, and to deficient clinical care. Also. As the stomach and duodenum are bypassed, there is the possibility of deficiencies of vitamin B12and iron, absorbed through these two organs, respectively. Initiation of tube feeding after a period of starvation may also lead to the development of refeeding syndrome ,The pathophysiology of which is believed to be related to the release of insulin from the pancreas when feeding is initiated. It often manifests in ICU patients as hemodynamic instability, respiratory failure, and other non-specific features.

Pump-assisted continuous drip infusions arethe preferred method for jejunostomy feeding. usually, continuous feeding is initiated at 20–50 ml/h except during night and increased gradually until the target rate is achieved. Continuous feeding helps in providing nutrient requirement, controlling hyperglycemia while achieves better gastrointestinal tolerance due to lowest hourly feed rate[9].

In our study, we did not find any statistically significant difference amongst the two techniques of FJ i.e. Stamm or Witzel regarding complication .

CONCLUSION

Stamm and Witzel – both are equally effective methods for creation of FJ.

Limitation of the study

This study is retrospective in nature and study sample size is small. Prospective RCTs are required to come to to definitive conclusion.

Acknowledgements

Nil

Conflicts Of Interest

None declared

REFERENCES

1) Nunes G, Fonseca J, Barata AT et.al. Nutritional Support of Cancer Patientswithout Oral Feeding: How to Select the Most Effective Technique?GE Port J Gastroenterol. 2020 Apr; 27(3):172-184.
2) Babu Lal Meena, Kumar Shwetanshu Narayan, Gopal Goyal et.al.Corrosive Injuries of the Upper Gastrointestinal Tract;J Dig Endosc 2017;8:165-9.
3) Tapia J, Murguia R, Garcia G,et. Al. Jejunostomy: techniques, indications, and complications. World J Surg. 1999 Jun;23(6):596-602. doi: 10.1007/pl00012353. PMID: 10227930.
4) Roderich Schwarz. Simple feeding jejunostomy technique for postoperative nutrition after major upper gastrointestinal resections. J Surg Onc 2002; 79:126-130.
5) Donatas Venskutonis, Saulius Bradulskis, Kestutis Adamonis et.al.Witzel Catheter Feeding Jejunostomy:Is It Safe?Dig Surg 2007;24:349–353,DOI: 10.1159/000107715
6) Han-Geurts IJ, Lim A, Stijnen T,et.al. Laparoscopic feeding jejunostomy: a systematic review.SurgEndosc.2005 Jul;19(7):951-7
7) Mellert J, Naruhn MB, Grund KE,et.al. Direct endoscopic percutaneous jejunostomy (EPJ). Clinicalresults.Surg Endosc.1994 Aug;8 (8):867-9; discussion 869-70.
8) Chawla S, Sureka B, Varshney V K, et al. (January 27, 2021) A Rare Complication of Feeding Jejunostomy: Murky Waters of the Surgeons. Cureus 13(1): e12945. doi:10.7759/cureus.12945
9) Jeong Hyun Lim, Dal Lae Ju, Yoohwa Hwang et.al.Early Postoperative 24-Hour Continuous Jejunostomy Feeding in Esophagectomy Patients;Clin Nutr Res 2014;3:69-73,http://dx.doi.org/10.7762/cnr.2014.3.1.69,pISSN 2287-3732 · eISSN 2287-3740