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RESEARCH ARTICLE

A COMPARATIVE STUDY BETWEEN SINGLE V/S DOUBLE LAYERED INTESTINAL ANASTOMOSIS

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ABSTRACT

BACKGROUND: Intestinal anastomosis is a common procedure both in elective emergency surgeries. The key to a successful anastomosis is the accurate reunion of two viable bowel ends with complete avoidance of tension. Double layer anastomosis incorporates a large amount of ischemic tissue into the suture line leading to tension and increased chance of leakage and luminal narrowing while a single layer anastomosis causes minimal damage to vascular plexus and bowel lumen. **OBJECTIVES:** To study advantages of single layer v/s double layer anastomosis. **METHODS:** The materials for the clinical study were collected from patients admitted to Indira Gandhi Institute Of Medical Sciences Patna. GROUP1-All single layer anastomosis was performed by using continuous synthetic absorbable monofilament 3-0 suture taking all layers of bowel wall except the mucosa in to the bite. GROUP2-All double layered anastomosis was performed using continuous silk 3-0 Lembert suture for outer layer and continuous running Vicryl 3-0 suture for inner layer. **RESULTS:** A total of 96 patients were included in the study. The average time taken for anastomosis was 9.12 min for single layer whereas for double layer it was 13.38 min. The mean time taken for return of bowel sounds for single layer anastomosis was 2.32 days whereas for double layer it was 3 days. The average duration of hospital stay was 5.9 days for single layer whereas for other group it was 7.29 days. **CONCLUSION:** Single layered extra mucosal anastomosis is much safer and cost effective than the conventional double layered method.

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INTRODUCTION

Intestinal anastomosis is a common procedure both in elective emergency surgeries and hence it is imperative for both practicing surgeons and residents to be familiar with and to master the art of safe bowel anastomosis. The key to a successful anastomosis is the accurate reunion of two viable bowel ends with complete avoidance of tension. The most important factors in the creation of a bowel anastomosis are meticulous technique, adequate apposition of bowel ends, good blood supply, & tension free repair. Double layer anastomosis incorporates a large amount of ischemic tissue into the suture line leading to tension and increased chance of leakage and luminal narrowing while a single layer anastomosis causes minimal damage to vascular plexus and bowel lumen.

Aims and objectives

To assess & compare

- The treatment outcomes of single layered and double layered intestinal anastomosis.

- The complications of single layered and double layered intestinal anastomosis, if any.
- Cost effectiveness of single layered as compared to double layered intestinal anastomosis.

MATERIAL AND METHODS

The materials for the clinical study were collected from patients admitted to Indira Gandhi Institute Of Medical Sciences, Patna. Total 97 patients were admitted through emergency as well as on routine outdoor basis in a single surgical unit and underwent intestinal anastomosis during the time period of Aug.2019 to Feb.2020. All patients were divided in to 2 groups. GROUP1-All single layer anastomosis was performed by using continuous synthetic absorbable monofilament 3-0 suture taking all layers of bowel wall except the mucosa in to the bite. GROUP2-All double layered anastomosis was performed using continuous silk 3-0 Lembert suture for outer layer and continuous running Vicryl 3-0 suture for inner layer.

RESULTS

A total of 96 patients were included in the study out of which 60 were males and 36 females with a ratio of 1.7:1.

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The mean age for male was 42.8 years whereas for female it was 43.8. Out of 96 patients 50 underwent single layer anastomosis whereas 46 underwent double layer anastomosis. The average time taken for anastomosis was 9.12 min for single layer whereas for double layer it was 13.38 min. The mean time taken for return of bowel sounds for single layer anastomosis was 2.32 days whereas for double layer it was 3 days. The average duration of hospital stay was 5.9 days for single layer whereas for other group it was 7.29 days. Complications like abdominal distension, persistent vomiting, wound infection, pelvic collection, and anastomotic leak were more common with double layer anastomosis compared to single layer anastomosis.

Conclusion

Keeping in view the reduced post-operative morbidity, lesser hospital stay duration, reduced time taken for anastomosis and reduced rates of complications, it can be concluded that a single layered extra mucosal anastomosis is much safer and cost effective than the conventional double layered method.

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