



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

International Journal of Current Research  
Vol. 12, Issue, 04, pp.11217-11218, April, 2020

DOI: <https://doi.org/10.24941/ijcr.38530.04.2020>

INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH

## RESEARCH ARTICLE

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

\*Dr. Ankur Akela and Dr. Ravi-Kant

Senior Resident, Department of Gen, Surgery, IGIMS, Patna

#### ARTICLE INFO

##### Article History:

Received 28<sup>th</sup> January, 2020

Received in revised form

05<sup>th</sup> February, 2020

Accepted 28<sup>th</sup> March, 2020

Published online 30<sup>th</sup> April, 2020

##### Key Words:

Intestinal Anastomosis,  
Single Layer,  
Double Layer.

#### 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.

Copyright © 2020, Dr. Ankur Akela and Dr. Ravi-kant. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Ankur Akela and Dr. Ravi-Kant. 2020. "A comparative study between single v/s double layered intestinal anastomosis", *International Journal of Current Research*, 12, (4), 11217-11218.

## 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.

\*Corresponding author: Dr. Ankur Akela,  
Senior Resident, Department of Gen, Surgery, IGIMS, Patna.

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.

### REFERENCES

Bagwell CE, Freguson WW. 1980. Blunt abdominal trauma: Exploratory laprotomy or peritoneal lavage. *Am J Surg.*, 140:368-373.

Brunsting LA Morton JH. 1987. Gastric rupture from blunt trauma. *J Trauma* 27:887,891.

Butain WL., Lynn HB. 1979. Splenorrhaphy, changing concepts for traumatized spleen :*Surg* 86:148.

Carey LC, Lowery BD. 1971. Haemorrhagic shock .*Curr prob Surg*8:37.

Cerise EJ, Secully JH. 1970. Blunt trauma to the small intestine .*J Trauma* 10:46-50.

Coghill TH, Moore EE, Jurkovich GJ et al., 1988. severe hepatic injuries *J Trauma* 28 et all.

Evans JP. 1973. Traumatic rupture of ileum.*Br J Surg* 60:119-121.

Tavakkolizadeh Ali, Whang E, Ashley Stanley W, Zinner Michael J. Small intestine.9th ed. Chapter 28.-Schwartz's Principles of Surgery, 9th edition;The McGraw-Hill Companies,Inc

Townsend M Jr, Beauchamp DR, Evers MB, Mattox KL-Townsend: Sabiston Textbook of Surgery,18<sup>th</sup>edition; Copyright 2007 Saunders,An Imprint of Elsevier.

Williamson RCN, Jiao LR. Small bowel.5<sup>th</sup>ed. Chapter 14.In: General surgical operations,Kirk RM ed.England:Churchill Livingstone Elsevier;2006 pg.209-27.

\*\*\*\*\*