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Research Article

**A RELATIVE RESEARCH ON RECOMMENDATION OF  
APPENDIX STUMP SIMPLE LIGATION FOR A SAFE AND  
SOUND APPENDECTOMY**<sup>1</sup>Syeda Nazish Kazmi, <sup>2</sup>Sidra Ali, <sup>3</sup>Soma Butt<sup>1</sup>Wapda Hospital, Lahore<sup>2</sup>Children Hospital Kot Radha Kishan District Kasur<sup>3</sup>BHU, Lahore**Abstract:**

**Objective:** - The aim of this study is to judge the procedure of appendix general ligation against the disposal and ligation of stump in appendectomy in case of severe appendicitis.

**Patients and Methods:** - A Relative research of 677 appendectomies was carried out at the Department of General Surgery at Mayo Hospital, Lahore in the timeframe of April, 2016 to March, 2017. Two groups were made of those patients who were suffering from appendectomy for simple severe appendicitis. Both the groups were named as Group-1 with general ligation and patients of ligation with invagination of appendix stump named Group-2 having. For nine months' individuals were pursued to observe the increase of problems.

**Results:** - As per age and gender both the groups had resemblance with each other. During our study, we carried out general ligation of the stump in three hundred eighty-two individuals and two hundred ninety-five among ligated patient's having invagination of the stump. While comparing Group-1 with Group "2" we found that the occurrence of post-operative wound paralytic ileus 4.40 % and infections 6.44 % was higher in Group "2".

**Conclusion:** - For a safe and sound course of action in appendectomy, appendix stump simple ligation is suggested.

**Keywords:** Appendicitis, Appendectomy stump, General ligation (Simple ligation), Invagination.

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**INTRODUCTION:**

Appendicitis is commonly found among the other surgical diseases. Occurrence rate of serious appendicitis is (01.50/1000) and (01.90/1000) respectively among males and females. They carry a risk of 06% to 20% with its' existence during their whole lifespan [1, 2]. Before the age of two years, it is rare. In the 16th century the physicians and alchemists accepted the presence of a clinical entity which is connected to acute cercal infection termed as "Perityphlitis" [3]. Report of appendectomy which was successfully handled came for the first time in the year 1736. The infected appendix removal through surgery at first was reported by Reginald Fitz in 1886 and later on counted as a remedial cure [2, 3]. The significance of premature appendectomy, during a presentation to the New York surgeons, was described by Charles McBurney, in the year 1889. The popular muscle splitting incision devised by him after five years, which bears his name till the day. Since past appendicitis has been a communal operating emergency. Initiating from the opening of skin to invagination and ligation of appendectomy stump and therefore, the technique of appendectomy may differ from center to center or surgeon to surgeon. The finest controlling of appendectomy stump has often been discussed during the course of the last century. Ochsner and Lilly made a detailed historical review in 1937 [4] about invagination of the stump by surgical doctors using a Z- stitching, purse-string sew or extra invagination of stump after Trans fixation or ligation of the appendix stump. Probably Kronlein introduced general ligation without invagination in the year 1884 [4]. Some surgeons used this method but criticized by others as it leads to increased occurrence of peritoneal adhesions and wound infection. Theoretically, every surgeon has his own perspective about randomized study justification and advantages, invagination the appendix stump and general ligation deprived of invagination techniques were compared and as well as the findings were matched with worldwide collected works.

**PATIENTS AND METHODS:**

A Relative research of 677 appendectomies was carried out at the Department of General Surgery at Mayo Hospital, Lahore in the timeframe of April, 2016 to March, 2017. All visits of the hospital,

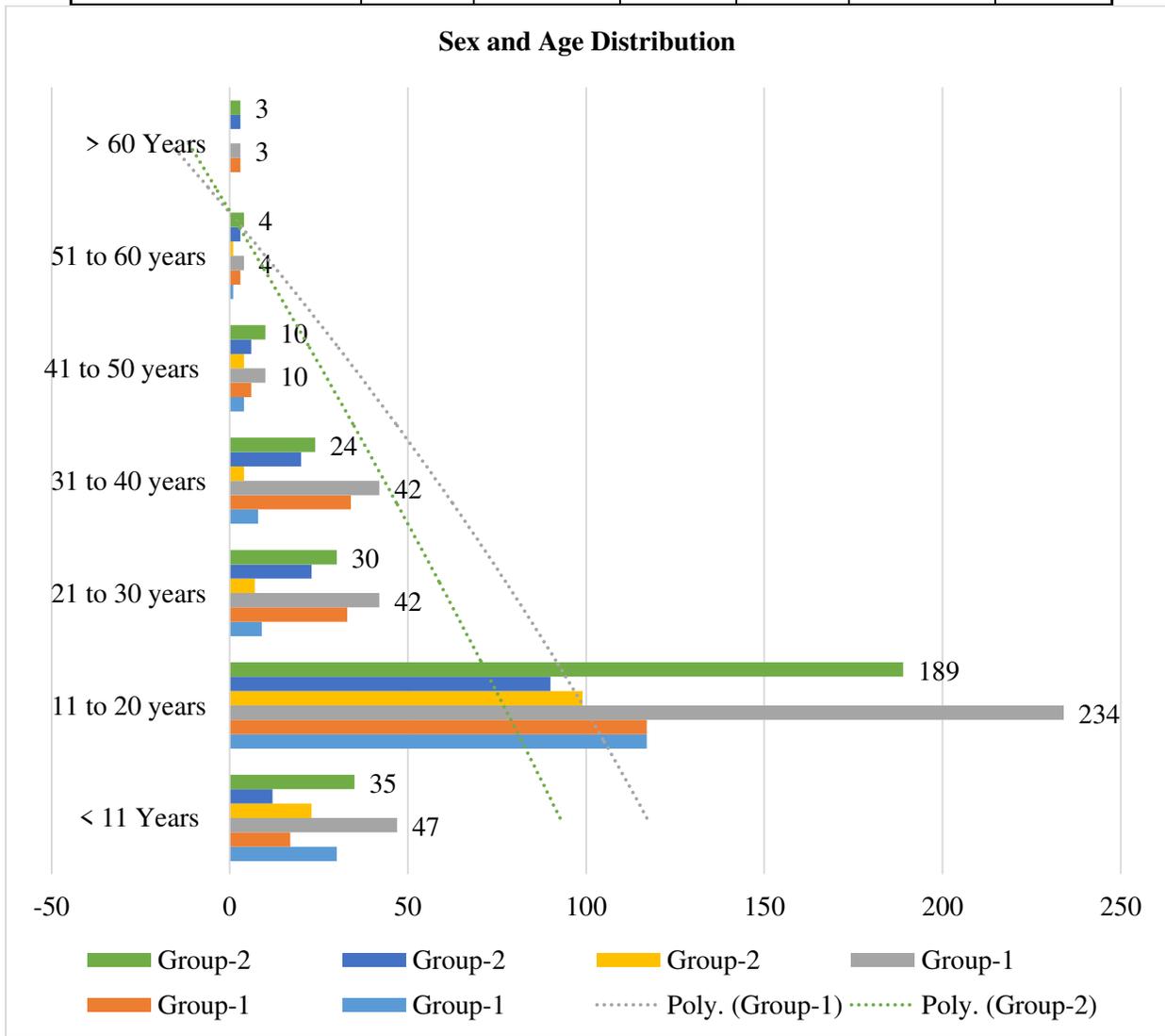
admissions, treatments, investigations, and follow-ups are contained in this treatment book, concerned specialists or medical officers write their prescriptions and notes on the same, that's why track of these individuals is not difficult. This study included all cases having acute appendicitis and gone through surgery. Cases of burst appendicitis, appendicular blister or build are not considered in this study. Randomly two groups of patients were made. In appendix, simple ligation of stump after revealing peritoneal cavity through customary Grid-iron or Lanz membrane opening in Group-1. After ligating the appendix, purse-string or Z- stitch used for joining in Group-2 and invagination of the stump was with chronic (2/0). Consultant surgeon or senior registrar either by self-operated. When trainee surgeons or junior registrars operated someone, the operating procedure was supervised. Check on the development of any complication of the operated cases were followed up for at least nine months.

**RESULTS:**

For four years a total number of six hundred and sixty-seven cases were included and two groups were randomly made in the study. Simple ligation diagnosed patients were 382 in Group-1 and appendix stump carried out in these cases. The leftover 295 individuals of the second group got ligated and invaginated for appendix stump with purse- string or Z-stitching technique. Both the groups dominated by females in Group-1 55.76% and 53.23% in Group-2, with 1:1.23 and 1:1.13 male to female ratio respectively [Table-I]. Both the groups consist on a majority of patients of younger age [Table-I]. Group-1 and Group-2 patients were observed with postoperative wound infection 5.49% and 6.44% respectively. In both procedures  $p > 0.05$ , which is significantly similar. As compared to Group-1 during first 48 and 72 hours, postoperative ileus recurrence rate was greater in Group "II", 0.67%, and 4.40% respectively. In Group-2  $p < 0.05$ , which is significantly higher [Table-2]. In both, the groups not a single person of the individuals acquired paralytic ileus for 72 hours' duration. In both groups, in the course of follow up and post-operative period of residual abscess was on no account, intestinal impediment, and postoperative peritonitis because of bonds was observed.

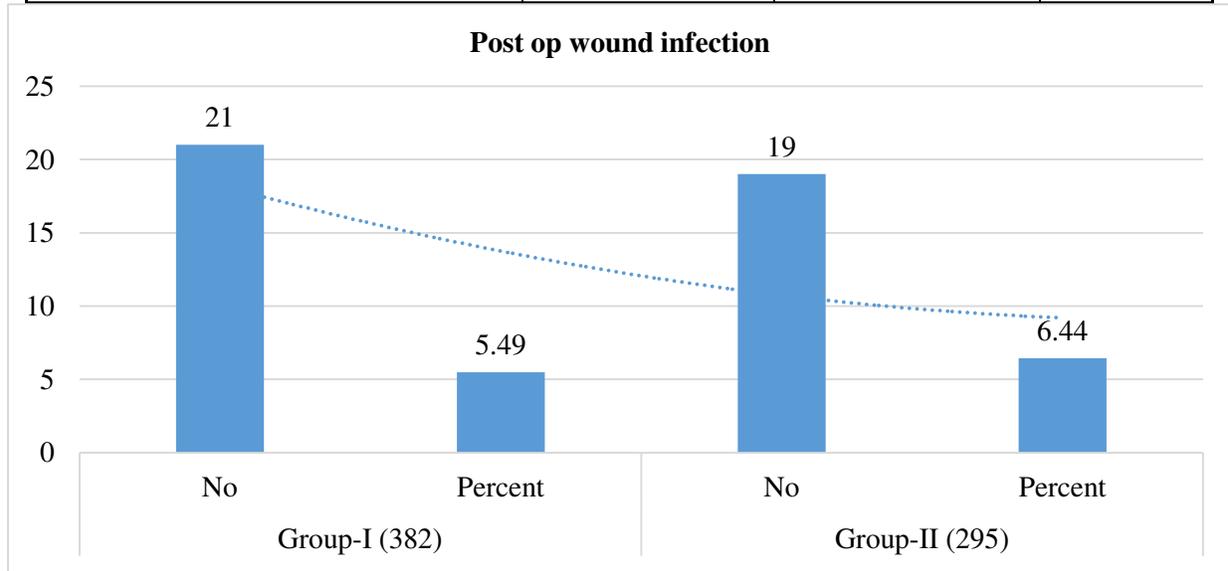
**Table – I:** Sex and age distribution in both groups

Age Group	Group-1			Group-2		
	Male	Female	Total	Male	Female	Total
< 11 Years	30	17	47	23	12	35
11 to 20 years	117	117	234	99	90	189
21 to 30 years	9	33	42	7	23	30
31 to 40 years	8	34	42	4	20	24
41 to 50 years	4	6	10	4	6	10
51 to 60 years	1	3	4	1	3	4
> 60 Years	0	3	3	0	3	3
<b>Total</b>	<b>169</b>	<b>213</b>	<b>382</b>	<b>138</b>	<b>157</b>	<b>295</b>



**Table – II:** Incidence of post-operative complications in both groups

	Group-I (382)	Group-II (295)	p -value
Post op wound infection	21 (5.49%)	19 (6.44%)	> 0.05
<b>PARALYTIC ILIEUS</b>			
24 to 48 hrs	6(1.57%)	13(4.40%)	< 0.05
48 to 72 hrs	0	2 (0.67%)	-
More than 72 hrs	0	0	-
Peritonitis	Nil	Nil	-
Residual Abscess	Nil	Nil	-
Intestinal Obstruction Due to adhesions	Nil	Nil	-
Other Complications	Nil	Nil	-

**DISCUSSION:**

Among developed countries, for the duration of the second decade of life, serious appendicitis is the greatest communal surgical emergency [5]. The most cases of appendectomy are regarded as to be simple operations, junior surgeons are entrusted generally, during odd hour's emergency is performed by them. Till the time we still depend upon the customary process of appendectomy in our territory for the cases of appendicitis whereas fascinating innovative operational practices are there and have substituted the orthodox processes. Only a few centers make sure of laparoscopic appendectomy in our setup. Approximately a few surgical specialists ensure general ligation of the appendix stump during an appendectomy, whereas many still have a preference of purse-string suture or Z-stitching for invagination it. Care alongside slipping of string from the remains or blowout of appendix remains is the reason given for this invagination of a stump. There are fewer probabilities of peritonitis from an emission of

pathogens from the remains, postoperative wound septicity incidences are less. Collagens from the caecum serosal layer gut healing and by means of development of granulation material it gets better [6]. On the other hand, without any variance between the frequency of post-operative wound septicity or paralytic ileus the individuals who ensure general ligation only. It involves less consumption of time and leaving unbroken anatomy of caecal wall [7]. Additional remaining eruptions on the wall of caecum because of stump invagination are reported, in addition to deformation or filling defect, it can lead to neoplasm suspicion [8, 9]. These misinterpretations are uninvolved by Simple ligation of course. Nil plus points of invagination the appendix remains over general ligation like showed in present research as comparison to the studies carried out by various authors [4, 7, 8, 10 – 14]. A conclusion reliable with that described by Shami and Amir [5], Bhopal-et-al [15], and others [16] conveyed that mainstream of the cases of our study was of early

age or belonged to the second decade of life. In our study both the groups do not have vital variance in the occurrence of wound septicity 5.49% and 6.44%. Engstrom [9], Watters [11] and Dass [13] also observed the same. Jacobs [8] and Sinha [14] reported a higher incidence amongst patients who go through the process of invagination of a stump. Severe post-operative impairment was not perceived mutually by the groups of our research and miscellaneous scholars in the universal writings reported the similar findings [8, 9, 11, 13].

### CONCLUSION:

Our research suggests in comparison to the stump invagination; stump's simple ligation in the course of appendectomy is considered as safe and better process because it reduces the time of the procedure, postoperative paralytic ileus and it also reduced wound infection incidence. Moreover, it was also observed in the industrialized nations, in the 2nd decade of life most repeated surgical emergency is "acute appendicitis".

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