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Research Article

**AN ASSESSMENT OF LAPAROSCOPIC APPENDECTOMIES (LA)  
AGAINST OPEN APPENDECTOMIES (OA) OUTCOMES DURING  
POSTOPERATIVE AILMENTS**<sup>1</sup>Dr. Aun Haider, <sup>2</sup>Memoona Fakhar, <sup>3</sup>Dr. Sumbal Tariq<sup>1</sup>Medical Officer BHU Kot Esa Shah<sup>2</sup>THQ Mian Channu<sup>3</sup>Madina Teaching Hospital Faisalabad**Abstract**

**Objective:** This research aims at the assessment of the results of open appendectomies and laparoscopy during the period of operation and the ailments after the operation.

**Methodology:** We conducted this study at the Surgical Department of Mayo Hospital, Lahore from November 2016 to October 2017. We included all successive appendectomies surgeries either they were open or laparoscopic which were operated during this time period. We recorded statistical specifications, time of the operational process, alterations, extensions of admission time periods and complications due to infection after surgeries. For the convenience in terms of data collection and lucid comparisons we divided the research participants into two distinct groups. One group encapsulated the patients whom the surgeons treated with laparoscopic appendectomies termed as (LA) and the second group is treated through open appendectomies that are shortly termed as (OA).

**Results:** During the period of research, surgeons operated a total number of (165) appendectomies. Among these cases, (72) patients observed laparoscopy and fell in the LA group whereas, we dealt with the rest of the numbers (93) in the OA group. Moreover, they pierced (18) appendectomies during surgeries. The age of patients varied between (12 – 65) years. Among these patients, (85) were females and rest of the (80) were males. A thorough comparison of time consumption of surgeries come up with the report that it was a bit extended in terms of LA group that stretched over the time period of (35 - 75) with the mean time duration is forty-five minutes as compare to OA operated patients whose mean timing was thirty-five minutes and ranged over (30 – 55) minutes. For LA operated (59) patients, we used glove finger as a bag for extraction. A total number of two patients from the LA group reported the infection related complexities and ten cases made the agreement to the same issue from OA surgeries. In LA surgeries, we found infections in the port of extraction. We observed only one case of intra-abdominal boils issue in the OA cases. The LA cases had a brief stay at the hospital and the mean average was (1.5) days as compared to OA cases whose mean stay time was (3.5) days. The LA cases took a mean time period of (10.5) days to resume their normal daily routine life activities whereas, OA cases took almost the mean time of (18.5).

**Conclusion:** This study makes the case that LA is much safer than OA. Additionally, it has multiple other advantages like least time of stay at hospitals, fewer numbers of infective complications and earlier returns to the normal daily routine life activities. In all aspects, LA is preferable because it has minute pitfalls and complexities. Last but not the least preference for LA is that patients had the least suffering in terms of pain after the operation.

**Keywords:** Appendicitis, laparoscopic appendectomy, outcome, and wound infection.

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**INTRODUCTION:**

In the discipline of medical, appendectomy is very common General Surgical procedure nowadays. Research statistics claims that around (7%) of the populace undergo appendicitis surgical process during their lifetime [1, 2]. Charles Mc Burney (1889) claimed premature precautions in critical appendicitis. Thereafter, he also proposed the surgical process through practical demonstrations which he regarded as Mc Burney's incision [1]. Kurt Semm, a famous German gynaecologist in 1983, was the first person who conducted the first laparoscopic appendectomy [3]. There are compensations of LA like less degree of pain, less time of retention in the OPDs, quick recovery after the operation, fewer chances of infection, suitable investigation of the intestinal gap and less visibility of wound [2 – 5]. On the other hand, the open surgical process for appendectomy reports some complications regularly over a period of time. While many health professionals have regarded LA is a better alternative option than OA. Whereas, there are still some conformist researchers who prefer OA on LA. Because they consider the LA approach has a high cost, prolonged surgery time and greater chances of complication after surgery [3]. Though it's true that LA procedure has some constraints like it is technically difficult to conduct as it is hard to ensure the obtainability of surgical equipment in all the community medical centres. Additionally, it has a prolonged procedure that cost the patients with a high amount and greater chances of abdominal inflammations. On the grounds of these realities, people do not prefer it openly [6, 7]. Besides all this, in this study, with first-hand exposure of practical experience, we advocate the LA approach on the grounds of the moderate and rational time period, instant recovery from the disability and minute chances of wound problems by dint of less operative region [1, 3, 8]. The aim of this study was to compare the outcome and morbidity of LA and OA in Patients with acute appendicitis.

**METHODOLOGY:**

To take an account of comparison with respect to the suitability of either LA or OA. We conducted this study at the Surgical Department of Mayo Hospital, Lahore from November 2016 to October 2017. Therefore, we included all the patients of the said illness in the hospital during this time period regardless of the surgery they underwent, either LA or OA. We did not observe any randomization during the selection of the sample. All the research participants who operated the patients either through LA or OA were researched professionals and have extensive expertise of handling of such cases. The

surgeons handled the matter of decision of about choice of LA or OA. Additionally, they sought informed consents, for the choice of either approach, from the patients. For data collection, we used a specific proforma that was particularly originated for this cause. Moreover, we recorded all the data regarding demographic information of patients, clinical statistics, examination of the apparent condition of patients, USG, analysis of the reports based on biochemical examinations, surgery reports and all the complications which occurred in OA and thereafter. Additionally, consumed time during the operations, and all the antibiotics and painkillers are also the part of the research record. We followed up all the cases after fifteen days. During those visits, we took an overview of their general health and noted that how much time they took to resume their jobs after surgeries. In terms of the record about the post-operative infection, inflammation of the abdominal area and the opening of a hernia, we inspected the area where the surgeries were operated thoroughly. We analyzed the data statistically. More precisely, we used the exact test of Fisher, unpaired t-test along with (1) sample t-test for the measurement of p-values. For this case, we noted p-value ( $<0.05$ ) as significant through statistical analyses. Surgeons used trocar (10mm) for LA in the position of infra-umbilical. To generate pneumoperitoneum professionals applied the technique of gas CO<sub>2</sub>. For left iliac fossa as well as for the position of suprapubic we used two (5mm ports). After identifying the location of appendices surgeons tied up the base and split it into (2) endo-loops with the help of scissors. For extraction, we applied the technique of glove finger. It did not affect the frequency of infection. For OA specialists used gridiron incision. We carefully performed the washouts if they were required. Before operation effecters ingested prophylactic as antibiotics along with anaerobic at the time of their admission in the hospital and after the operation the ingested (2) doses. To evaluate the intensity of pain postoperatively, we used the numeric range from (0-10). Doctors used multiple techniques for the cases of pain in patients.

**RESULTS:**

We examined one hundred and sixty-five patients during the research. Eighty patients were male and eighty-five were female. The mean age of the sample was twenty-four who ranged from (12 – 65). Seventy-two of the total sample observed LA whereas rest of the ninety-three underwent through OA technique (43.3% and 56.36%) subsequently. Both the group did not report any significant difference in terms of the lab and clinical reports and

in the age as well. One hundred and twenty-two patients (73.93%) reported with acute appendicitis, and other eighteen patients (10.9%) had appendices during surgery. Overall LA procedure had extended time period (35 – 70) minutes with a median time of forty-five minutes. On the other hand, OA took the range of (30 – 55 min). Among all these surgeries, only two cases (2.77%) reported the infection in the wound in LA group. Contrarily, OA group has a greater ratio of infection that occurred in ten patients (10.75%). Similarly, the ratio of pain and burning disease were apparently much greater in OA group as compared to LA. For OA it was ( $p < 0.0001$ ) and for LA group, we recorded it as ( $p = 0.0052$ ). Apropos of all the observations, we did the job where the confidence level was (95%). We recommended the injectable and oral painkillers with respect to their

severity and patients' need. We observed (20) casual appendices, (48) cases of inflammation and (4) of pierced in the LA group. As for as the OA group is concerned, (5) cases were normal, (13) were perforated and (74) reported as inflamed. In the LA group, total sixty-two patients (86.12%) observed the surgery successfully. Whereas, (10) patients required immediate conversion to OA because (7) displayed adhesions during the progress, and (2) reported gangrenous and other had bleeding intra-operative procedure. OA group filed more cases of complication than LA. And the time of retention in the hospital was extended in OA group than LA (1.5 days and 3.5 days subsequently). Most of the post-operative complications were observed after OA as compared to LA. We did not file any severe case of complication or death case.

**Table – I:** Morbidity in OA and LA Groups (165)

Outcome (Category)	LA-Laparoscopic Appendectomy (72)		OA-Open Appendectomy (93)		P-value
	Number	Percentage	Number	Percentage	
Conversion	10	13.88	0	0.00	< 0.0001
Postoperative Pain	24	33.33	65	69.89	< 0.0001
Wound Infection	2	2.77	10	10.75	0.0693
Postoperative Fever	5	6.94	22	23.65	0.0052
Paralytic Ileus	2	2.77	12	12.90	0.024
Intra-Abdominal Abscesses	0	0.00	1	1.07	1.0000

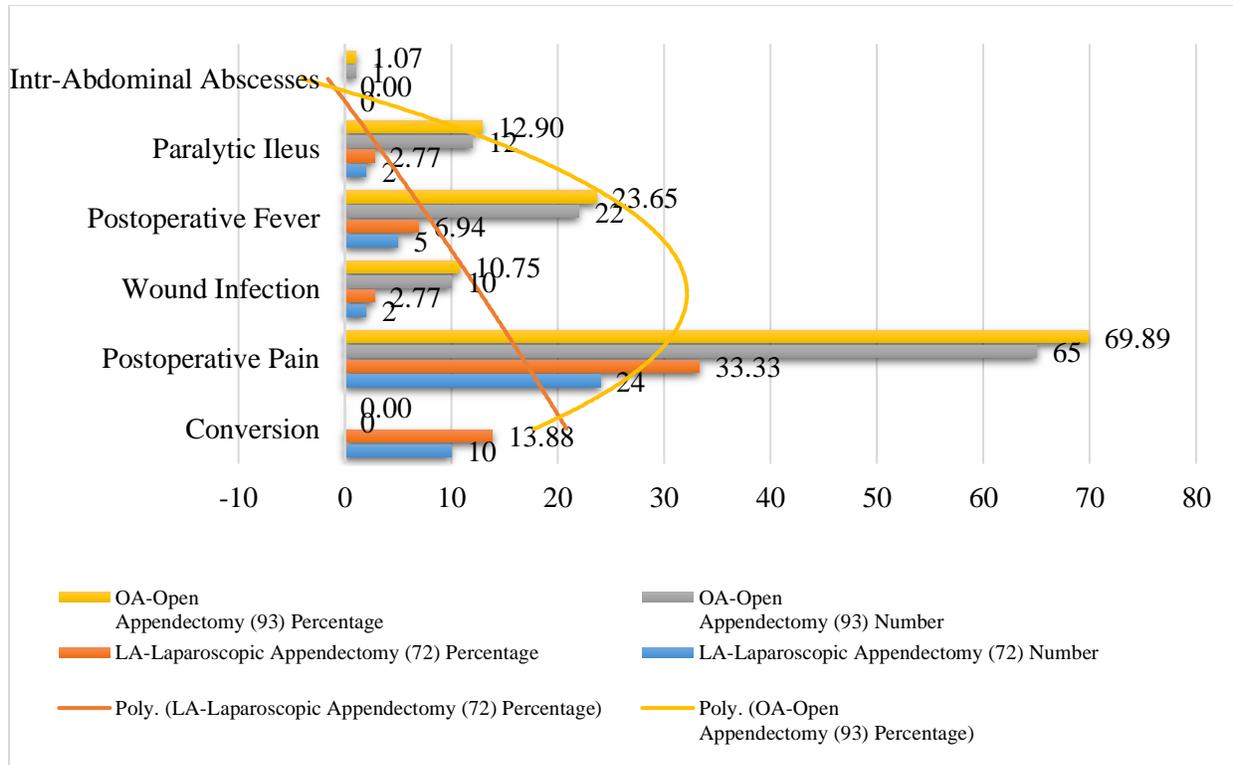
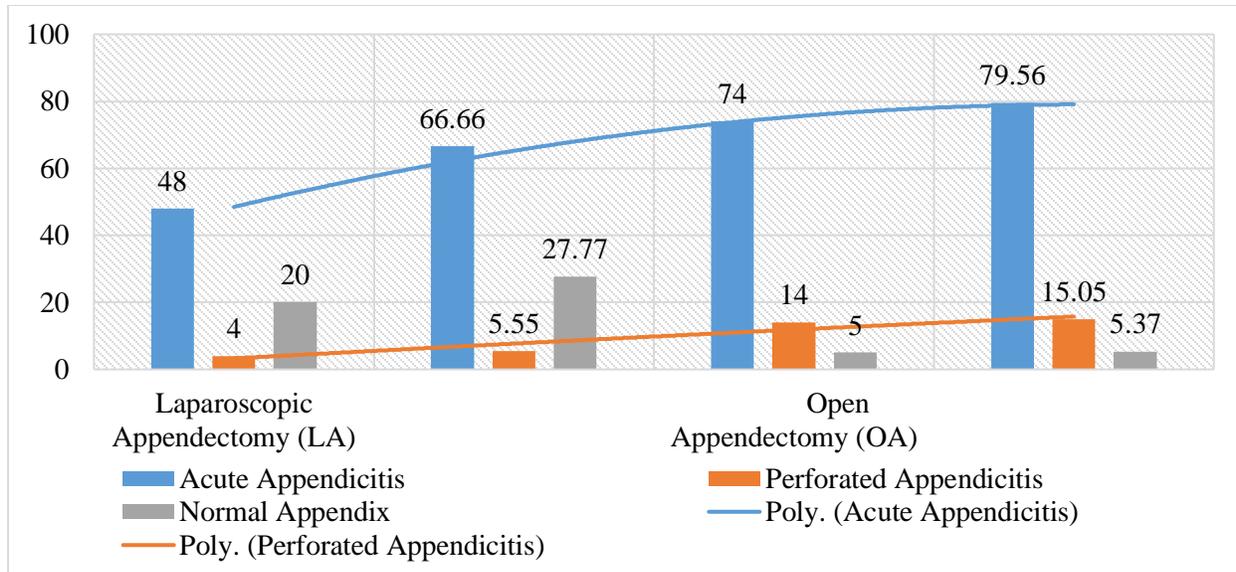


Table – II: Preoperative Outcomes

Severity	Laparoscopic Appendectomy (LA)		Open Appendectomy (OA)		Total
	Number	Percentage	Number	Percentage	
Acute Appendicitis	48	66.66	74	79.56	122
Perforated Appendicitis	4	5.55	14	15.05	18
Normal Appendix	20	27.77	5	5.37	25



**Table – III:** Hospitalization and Routine Activity Restoration

Category	LA-Laparoscopic Appendectomy (72)		OA-Open Appendectomy (93)		P-Value
	Value	Mean/Range	Value	Mean/Range	
Mean Operative Time (Minutes)	45	35 to 75	35	30 to 55	< 0.0001
Hospital Stay (Days)	1 to 3	1.5	2 to 6	3.5	< 0.0001
Time of return to Normal Activity (Days)	8 to 15	10.5	15 to 25	18.5	< 0.0001

### DISCUSSION:

Among the many other common surgeries, appendectomy has greater ratio nowadays [9, 10]. The orthodox medication (gold standard) is common treatment is an ordinary technique for OA but it bears the scars on her face like it has greater potential for complexities for the recovery from the wound, sometimes leads to the severe infection with inflammation in the abdominal area as well as the structures in the bowl [10]. The LA approach gained the popularity among the masses as soon as the discipline of medication got familiarized with it. Hence, it is not commonly acknowledged so far. The LA may have multiple advantages on the account of economy, time and pain [11]. But it bears some limitations, like an expert surgeon, modern equipment, high cost and a bit longer operation time. Moreover, in the light of this research (3) distinct research authors claimed the LA approach more favourable in terms of less stay in the hospital, less pain, less agony, and the last but not the least, an instant recovery which is not possible through OA

approach [2, 3, 12]. If we compare the time duration of operation for OA with other reports, they have less time as (10.7 – 30) minutes [11, 13, 14]. Overall, the findings of this research report qualify and quantify the results of other studies in terms of favour and preference of LA approach because it bears less pain, less time, less wound infections, no record of fatality, equipped with modern instruments and procedures. Khan MN, et al. filed one report of inflammation in OA and LA as well that received a conservative treatment. Therefore, if surgeons adopt standard procedures and antibiotics, they can easily control the case and appearance of complexities after surgeries [10, 16]. Kumar B, et al. & Pederson AG et al. claimed (8) days of recovery and resume of work through LA approach [13, 14, 17]. Therefore, the choice of surgeon and lack of randomization about the selection of patients can be the limitations of this research.

### CONCLUSION:

To conclude LA has multiple benefits in terms of the

shorter period of retention in the hospitals, a lesser amount of abdominal pain, that may require regular painkillers, with slight chances of wound pestilence. Moreover, patients can easily resume their jobs soon after their surgeries. By dint of the findings of this study, we recommend the patients who are supposed to be reported with probable appendicitis must take LA in their consideration before going for open appendectomy (OA).

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