



COMPARATIVE STUDY OF OPEN AND LAPAROSCOPIC APPENDICECTOMY

General Surgery

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ABSTRACT

Background: Appendicectomy is the most common emergency abdominal surgery. Both open and laparoscopic approaches are practiced, yet debate continues regarding operative time, postoperative recovery, complications, and cost-effectiveness. **Objectives:** To compare open and laparoscopic appendicectomy with respect to operative time, postoperative pain, hospital stay, complications, and return to normal activity. **Methods:** A prospective comparative study was conducted on 66 patients diagnosed with acute appendicitis at R.N.T. Medical College & Hospital, Udaipur, Rajasthan. Patients were randomized to either open appendicectomy (n=33) or laparoscopic appendicectomy (n=33). Data were analyzed using SPSS; $p < 0.05$ was considered significant. **Results:** Mean operative time was lower in laparoscopic group (29.7 ± 3.9 min) vs open (43.3 ± 6.0 min, $p < 0.001$). Postoperative pain score (VAS) was significantly lower in LA (1.36 ± 0.48) compared to OA (3.24 ± 0.81 , $p < 0.001$). Hospital stay was shorter in LA (2.0 ± 0.68 vs 2.8 ± 0.77 days, $p < 0.001$). Wound infection was significantly higher in OA (28% vs 3%, $p < 0.05$). Return to work was earlier in LA (8.7 ± 2.8 vs 11.3 ± 6.4 days, $p = 0.007$). **Conclusion:** Laparoscopic appendicectomy offers benefits of reduced pain, shorter hospital stay, fewer complications, and earlier recovery, though OA remains cost-effective. Choice should be individualized.

KEYWORDS

Appendicitis, Open appendicectomy, Laparoscopic appendicectomy, Comparative study

INTRODUCTION

Appendicectomy is the most frequently performed emergency surgical procedure. Since the first laparoscopic appendicectomy by Semm in 1983, minimally invasive surgery has gained popularity. Open appendicectomy, however, remains widely performed, especially in resource-limited settings. This study was conducted to compare outcomes between the two approaches at a tertiary care center.

MATERIALS AND METHODS

This prospective study was conducted from January 2024 to December 2024 in the Department of General Surgery, R.N.T. Medical College, Udaipur. A total of 66 patients with acute appendicitis were randomized into two groups: open appendicectomy (33 cases) and laparoscopic appendicectomy (33 cases). Inclusion criteria included patients > 10 years with uncomplicated appendicitis. Exclusion criteria included pregnant women, complicated appendicitis, and those unwilling. Parameters studied were operative time, postoperative pain, complications, hospital stay, and time to return to work. Statistical significance was assessed using chi-square and t-test ($p < 0.05$ significant).

RESULTS

Table 1. Comparison of Mean Operative Time

Group	N	Mean (min)	p-value
LA vs OA	33 each	29.7 vs 43.3	< 0.001

Table 2. Postoperative Pain Score (VAS at 24h)

Group	Mean \pm SD	p-value
LA vs OA	1.36 ± 0.48 vs 3.24 ± 0.81	< 0.001

Table 3. Postoperative Complications

Group	Complication rate	p-value
LA vs OA	3% vs 28%	0.016

Table 4. Postoperative Hospital Stay

Group	Mean (days)	p-value
LA vs OA	2.0 vs 2.8	< 0.001

Table 5. Time To Return To Work

Group	Mean (days)	p-value
LA vs OA	8.7 vs 11.3	0.007

DISCUSSION

Our study showed laparoscopic appendicectomy provides significant

benefits over open appendicectomy, including shorter operative time, reduced pain, fewer complications, shorter hospital stay, and earlier return to work. These results are consistent with prior studies such as Sauerland et al (2010) and Li et al (2010).

CONCLUSION

Laparoscopic appendicectomy is superior to open appendicectomy in terms of reduced pain, shorter hospital stay, and quicker recovery, though OA remains cost-effective and simpler. Individualized selection of procedure is recommended.

Declarations

Ethical Approval: Approved by Institutional Ethics Committee, R.N.T. Medical College, Udaipur.

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Conflict of Interest: None declared.

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