

Comparative Study between Conservative Management versus Early Appendicectomy in Case of Appendicular Lump PreformationGajanan Anilrao Pande¹, Sandip Haribhau Tayade², Vedashree Dhananjay Deshpande³¹Senior Resident, Padmashree Dr. D Y Patil Medical College and Hospital, Navi Mumbai, MH²Assistant professor, Padmashree Dr. D Y Patil Medical College and Hospital, Navi Mumbai, MH³Clinical Assistant, Terna Medical College and Hospital, Navi Mumbai, MH

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Abstract:**Background:** An appendicular lump is a localized infection that arises a few days after acute appendicitis, involving the appendix, omentum, and bowel loops. The management of appendicular lumps is a topic of ongoing debate, with traditional approaches advocating for conservative treatment followed by interval appendicectomy. However, recent trends are shifting towards immediate surgical intervention.**Objectives:** to evaluate the feasibility and safety of interval appendicectomy for appendicular lumps, comparing it with early appendicectomy. The objectives include assessing effectiveness, complication rates, recovery times and operative challenges.**Methodology:** A prospective, comparative study was conducted on 50 patients with appendicular lumps at Dr. Shankarrao Chavan Government Medical College and Hospital, Nanded, from January 2020 to June 2021. Patients were divided into two groups: one underwent early appendicectomy, and the other received conservative treatment followed by interval appendicectomy. Data collection involved detailed history, physical examination, ultrasound diagnostics, and postoperative monitoring.**Results:** The study showed a male predominance with a mean age of 27.28 years. Group I (early appendicectomy) faced higher complication rates, including wound infections and adhesiolysis challenges, while Group II (conservative management) demonstrated lower morbidity and shorter hospital stays. The overall duration of medication was shorter in Group II, and the total hospital stay was significantly less compared to Group I.**Conclusion:** The study concludes that interval appendicectomy for appendicular lumps are associated with lower morbidity; shorter hospital stays, and reduced costs, making it a viable alternative to immediate surgical intervention. However, limitations like the small sample size and single-center setting suggest the need for larger, multi-center studies for broader generalization.**Keywords:** Appendicular Lump, Interval Appendicectomy, Early Appendicectomy, Conservative Management, Surgical Intervention, Appendicitis.

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Introduction

An appendicular lump is a common surgical entity, encountered in 2- 6% of patients presenting with acute appendicitis. Appendicular lump is the localization of infection occurring 3 to 5 days after an attack of acute appendicitis. This inflammatory lump is composed of the inflamed appendix, omentum and bowel loops.

The treatment of appendicular lump is controversial; however, there are several management options for appendicular lump.[1-2] Traditionally, these patients are managed conservatively followed by interval appendicectomy 4-6 weeks later, believing that an early appendicectomy in these cases is hazardous, time consuming and may lead to life threatening

complications such as faecal fistula. Advocates of initial conservative approach claim lower rate of complications compared to early operative approach. [3]

The treatment of appendicular lump is taking a turn from the traditional approach of initial conservative treatment followed by interval appendectomy to immediate appendectomy. [4] However this change is not widely accepted and a large number of surgeons continue to adopt the same traditional conservative approach. [5] The early surgical intervention is known to be an effective alternate to conservative therapy as it considerably reduces the total hospital stay and obviates the need for a second admission. [6-9]

The present study is designed to evaluate the feasibility and safety of interval appendicectomy in appendicular lump in our hospital by comparing the results of an equal number of patients treated by early appendicectomy.

Materials and Methods: The study is done in 50 patients with appendicular Lump who presented to surgery OPD, at Dr. Shankarrao Chavan Government Medical College and Hospital Nanded from 1st Jan 2020 to 30th June 2021. Our study is a clinical, prospective and comparative study conducted during the period of 1st Jan 2020 to 30th June 2021. Objective of the study was to evaluate the effectiveness, complication rates, recovery times, and operative challenges of conservative management versus early appendicectomy in treating appendicular lumps, utilizing ultrasound diagnostics as a key tool in treatment planning.

The study is done after obtaining a detailed history, complete general physical examination and systemic examination. All investigations and surgical procedures were carried out with proper informed written consent as appropriately. The data regarding patient particulars, diagnosis, investigations, and surgical procedures is collected in a specially designed case recording form and transferred to a master chart subjected to statistical methods like mean, standard deviation, proportion, percentage calculation and Fisher exact and t test are used.

Participants included both male and female individuals. They were required to present with acute abdominal pain and fever accompanied by vomiting and nausea.

Diagnostic criteria included ultrasound evidence of lump formation and clinical observation of a lump in the right iliac fossa. Eligible patients had to be hemodynamically stable. The study catered to two patient groups: those willing to undergo conservative management followed by interval appendicectomy, and hemodynamically unstable

patients willing to undergo emergency exploration. Additionally, it included hemodynamically stable patients who opted for surgical management despite the option of conservative management.

The study excluded patients presenting with appendicitis without lump formation and those with appendicitis that led to abscess formation without lump development. Patients who were not willing to undergo conservative management, interval appendicectomy, or emergency surgical exploration were also excluded from the study.

The patients were divided in two groups, each containing 25 subjects. In Group I, early surgical exploration was done within 24hrs of admission. Pre-operative preparation was done by keeping the patients nil orally, giving adequate parenteral fluids to maintain fluid and electrolyte balance, antibiotics and analgesics.

Drains were kept in a few cases which were removed after 48hrs and sutures were removed on the 8th post-operative day. Post-operatively patients were monitored for vitals, input output balance. In Group II, conservative approach with Ochsner Sherren Regime was adopted followed by interval appendectomy 6-8 weeks later. Patients in both study groups were discharged as soon as possible and duration of stay and duration of antibiotics and analgesics used in number of days was noted. There was no mortality noted in either group. The patients were followed up for a variable period.

Results:

A comprehensive study was conducted at Dr. Shankar Rao Chavan Government Medical College and Hospital, Nanded, from January 1st, 2020 to June 30th, 2021, to compare emergency appendicectomy versus conservative management followed by interval appendicectomy in 50 cases of appendicular lump. They were divided in two groups, each containing Twenty- Five. Results are as follows.

Table 1: Age and Gender Distribution Among Patients with Appendicular Lump: Comparison Between Early Appendicectomy (Group I) and Conservative Management (Group II)

		Group I n (%)	Group II n (%)	Total
Age in yrs	<20	6 (24%)	7 (28%)	13
	21-30	12 (48%)	12 (48%)	24
	31-40	3 (12%)	5 (20%)	8
	>40	4(16%)	1 (4%)	5
	Total	25	25	50
Sex	Male	17(68%)	13(52%)	30
	Female	8 (32%)	12 (48%)	20
	Total	25	25	50

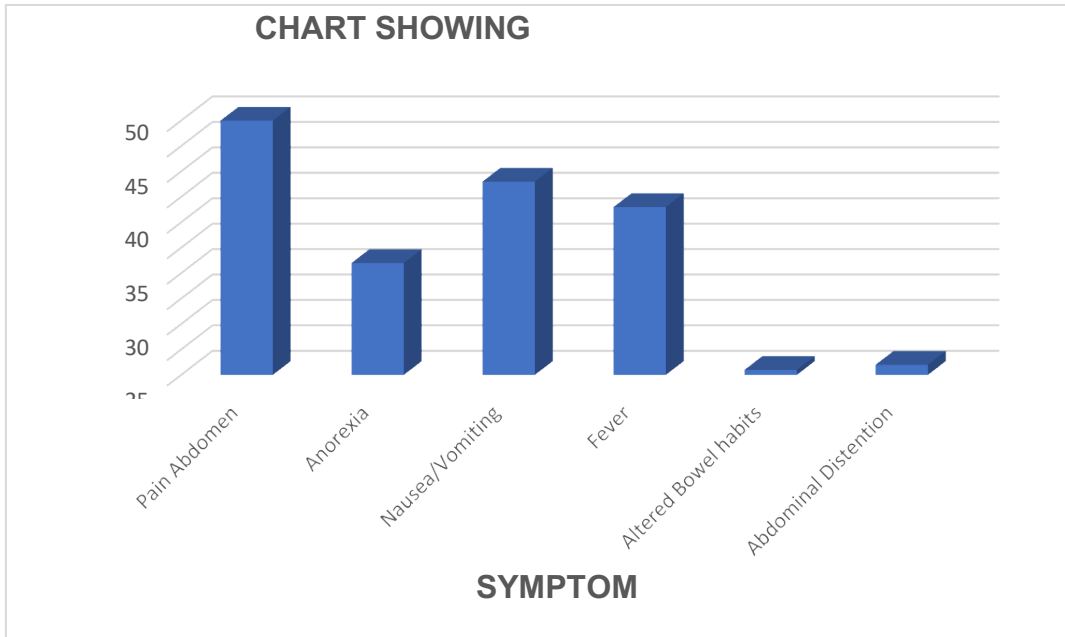


Figure 1: Prevalence of Symptoms in Patients with Appendicular Lump (N=50)

Table 2: Comparative Outcomes of Appendicectomy vs. Conservative Management in Appendicular Lump Cases

		Type of Treatment		P value
		Group I n (%)	Group II n (%)	
Operative findings	Simple lump	0	1 (4%)	-
	Adhesions	25 (100%)	4 (16%)	
	Loculated pus	8 (32%)	0	
	Adhesive intestinal obstruction	2(8%)	0	
	Normal	0	22 (88%)	
	Total	35	27	
Operative problems	Difficulty in localization of appendix	5 (20%)	3(12%)	0.13
	Difficulty in adhesiolysis	20 (80%)	3 (12%)	
	Minor trauma to bowel	9 (36%)	0	
	Minor bleeding	5 (20%)	0	
	Total	39	6	
Complications	Wound infection	6 (24%)	0	0.011
	Faecal fistula	0	0	
	Failure of treatment	0	2 (8%)	
	Lost follow up	0	1 (4%)	
	Adhesive intestinal obstruction	0	0	
	Total	6(24%)	3(12%)	
Total duration of medications	<= 5 days	13 (52%)	25 (100%)	0.03
	6-8 days	12(48%)	0	
	>8 days	0	0	
	Mean	5.72	5.16	
	SD	0.979795897	0.8	
	SE	0.195959179	0.16	
	95% CI	5.31-6.12	4.82-5.49	
Total duration of hospital stay	<= 5 days	8 (32%)	25 (100%)	0.041
	6-8 days	11 (44%)	0	
	>8 days	6 (24%)	0	
	Mean	6.13409657	5.41732549	
	SD	2.75119	6.00469	
		1374	6384	
	SE	0.550238275	1.200939277	
	95% CI	95% CI [5.17-7.40]	95% CI [4.97-6.14]	

In a detailed study involving 50 cases, the mean age of the patients was found to be 27.28 years, with a standard deviation (SD) of 11.02, spanning an age range from 11 to 70 years. A notable majority (48%) of these patients fell into the 21-30 year age group. The study highlighted a male predominance with a male to female ratio of 1.38:1. The patients were evenly split into two groups, with each group comprising 25 individuals. In Group I, the average age was 24.72 years (SD 9.44) ranging from 11 to 52 years, and in Group II, the mean age was slightly higher at 30.81 years (SD 12.31), with ages ranging from 16 to 70 years. Male preponderance was evident in both groups, with a ratio of 2.12:1 in Group I and 1.08:1 in Group II.

The study found that all patients experienced abdominal pain. Additionally, 44% of the cases were associated with anorexia, nausea/vomiting was present in 76% of cases, and fever was observed in 66% of the patients. In terms of operative findings, Group I showed adhesions in all patients, with 8 cases of loculated pus and 2 instances of adhesive intestinal obstruction. Conversely, Group II predominantly had normal findings (88%), with one case of a simple lump and four cases of adhesions.

Operative challenges varied between the groups. In Group I, the major operative issue, occurring in

20% of cases, was difficulty in adhesiolysis. Group II faced equal challenges (12% each) in localizing the appendix and adhesiolysis. Fisher's exact test indicated that these differences were not statistically significant, with a p-value of 0.13.

Complications also differed significantly between the groups. In Group I, the primary complication was wound infection, affecting 24% of patients, with the overall complication rate also standing at 24%. In Group II, treatment failure was the major issue, occurring in 12% of the cases, and this was also the overall rate of complication in this group. The Fischer Exact Test yielded a p-value of 0.011, indicating statistical significance. Regarding medication, 52% of Group I patients required parenteral medications for five days or less, with the mean duration being 5.72 days. In contrast, all patients in Group II required parenteral medications for the same duration or less, with an average duration of 5.16 days. The T-test results were significant, with a p-value of less than 0.05.

Hospital stay durations also varied significantly between the groups. In Group I, the majority (44%) had a hospital stay of 6-8 days, with an average stay of 6.13 days. For Group II, none of the patients stayed for 6-8 days; all had hospital stays of five days or less, with the mean duration being 5.41 days. The T-test confirmed the significance of these differences, with a p-value of less than 0.05.

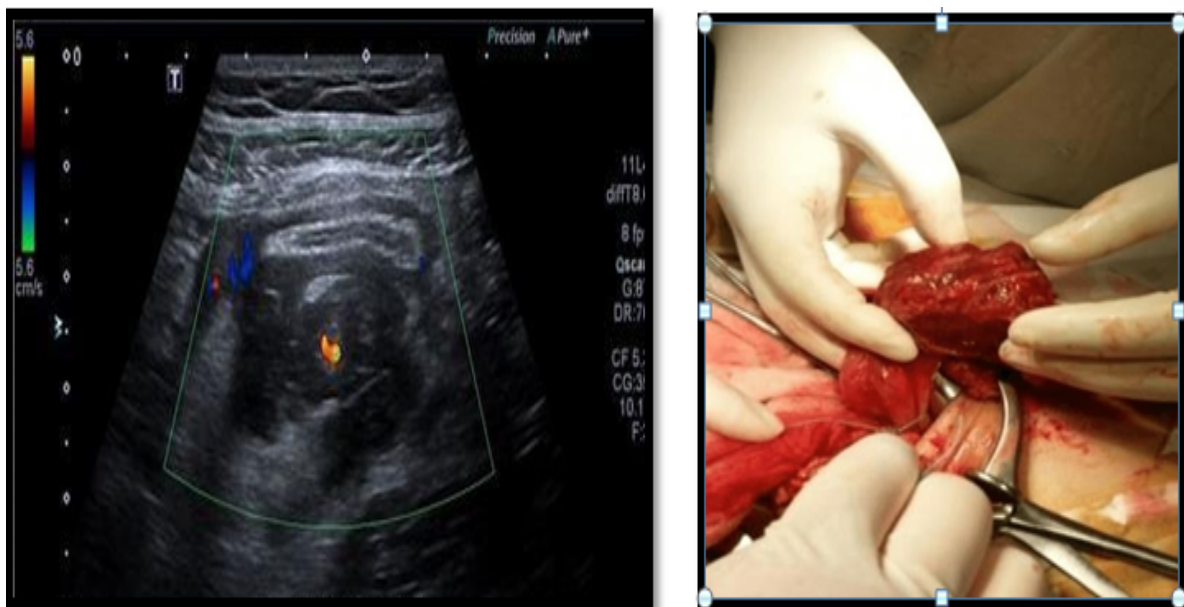


Figure 2: a. Ultrasound photos showing appendicular lump b. Intra-op photos of appendicular lump



Figure 3: a. Intra-op photo of appendicular lump with adhesions b. Post-op photo of wound infection

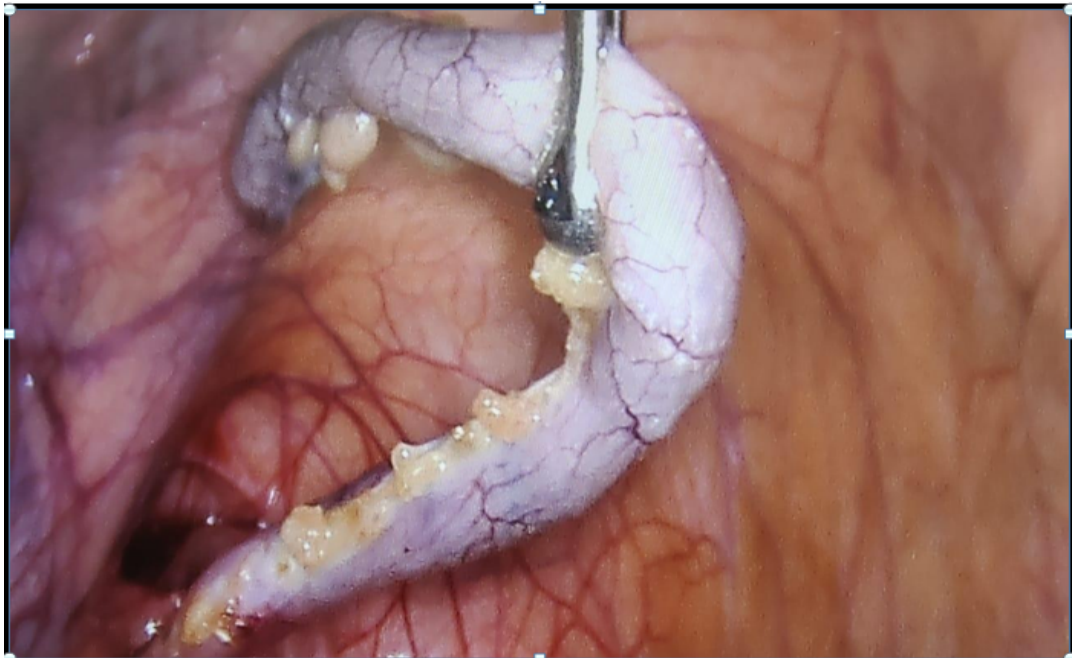


Figure 4: Intraoperative photo of laparoscopic appendicectomy

Discussion

This comprehensive analysis juxtaposes findings from multiple studies, delving into the complexities of treating appendicular lumps. The operative findings, problems encountered during surgery, complication rates, and duration of hospital stays are scrutinized, offering a nuanced understanding of the implications of different treatment modalities.

In the study by Malik Arshad et al. Group I exhibited a higher prevalence of varied complications: 72.7% presented with simple lumps, 9.1% with perforated appendix, and smaller percentages showed loculated pus (8%), abscesses (4.5%), and adhesions (5.7%). Meanwhile, Group

II predominantly faced adhesions (76.1%) and simple lumps (23.9%). Contrastingly, in "OUR STUDY," Group I demonstrated a universal occurrence of adhesions (100%), accompanied by a substantial incidence of loculated pus (32%) and adhesive intestinal obstruction (8%). Group II, in this study, primarily showed normal findings (88%) with a minority facing adhesions (16%). Malik Arshad et al. [1] reported significant challenges in Group I, notably in locating the appendix (46.6%) and adhesiolysis (26.1%). Group II also faced these issues, albeit at higher rates: 59.1% for appendix localization and 36.4% for adhesiolysis. "OUR STUDY" echoed similar difficulties but with distinct intensities. Group I encountered substantial adhesiolysis challenges (80%) and issues in

locating the appendix (20%). For Group II, these problems were comparatively lesser, both being at 12%. The complication rate in Malik Arshad et al.'s [1] study was 21.60% for Group I and notably lowers at 9% for Group II. However, "OUR STUDY" presented a more concerning scenario, with Group I facing a higher complication rate of 32%, and Group II at 12%.

Samuel M et al. [10] found a stark contrast in the mean hospital stays: a shorter duration for Group I (4.8 days) compared to Group II (13.2 days). In "OUR STUDY," the trend diverged, with all patients in Group II experiencing a stay of less than or equal to 5 days (mean 5.41 days), while Group I had a longer mean stay of 6.13 days, with 44% staying for more than 6 days.

Constantinos Simillis [11] in their study Seventeen studies (16 nonrandomized retrospective and 1 nonrandomized prospective) reported on 1,572 patients: No significant difference was found in the duration of first hospitalization, the overall duration of hospital stay, and the duration of intravenous antibiotics. The conservative management of complicated appendicitis is associated with a decrease in complication and reoperation rate compared with acute appendectomy and it has a similar duration of hospital stay.

Conclusion

The study concluded that appendicular lumps are more common in males, with a mean age of 27.28 years. Significant differences were observed between the two treatment approaches in terms of operative challenges, complication rates, duration of medication, and hospital stay. Emergency appendectomy led to more complications and increased morbidity, while interval appendectomy showed low morbidity, shorter hospital stays, reduced costs, and better patient compliance.

Limitations of the study include its relatively small sample size and the single-center setting, which may affect the generalizability of the results. Future research should focus on larger, multi-center studies to validate these findings and explore long-term outcomes of both treatment approaches.

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