

DRAIN VERSUS NO DRAIN AFTER OPEN APPENDECTOMY FOR COMPLICATED APPENDICITIS

Ahmed Mohamed El Gendi, Mohamed Abdullah Sharaan, Tamer Nabil Abdelbaki, Sameh Gamal Elsayed El Desoky

Department of surgery, Faculty of Medicine, Alexandria University

Introduction

Acute appendicitis is the most common cause of emergency abdominal surgery, with a lifetime risk of 7–8%. Most cases are uncomplicated and treated with appendectomy or, in some cases, antibiotics alone. However, complicated appendicitis—such as perforation or gangrene presents greater challenges and higher risks of postoperative complications like wound infection, abscess, sepsis, and longer hospital stays. Classic symptoms, including anorexia, periumbilical pain shifting to right lower quadrant pain, nausea, and vomiting, appear in only about half of cases. Nausea and anorexia are particularly frequent. Older patients and males are more prone to complicated cases. A major surgical debate concerns the use of abdominal drains. Some surgeons support routine drainage to reduce postoperative infections, especially in complicated appendicitis. Others argue that drains do not lower complication rates and may increase drain-related risks. Therefore, the use of drains requires careful intraoperative and postoperative consideration.

Aim of the work

The aim of this randomized controlled study is to compare the incidence of post-operative complications (infected collections) in patients with complicated appendicitis undergoing open appendectomy using abdominal drain versus no drain.

Patients and Methods

This study involved 36 patients with complicated acute appendicitis (gangrenous or perforated with localized collection, but without general peritonitis) admitted to the Emergency Surgical Unit at Alexandria Main University Hospital (AMUH). All underwent emergency open appendectomy via McBurney incision after obtaining informed consent. Inclusion criteria: Adults (aged 15 years old and over). Exclusion Criteria: included: simple appendicitis, appendicitis with intra-abdominal malignancy, diffuse peritonitis requiring midline incision, appendicular mass managed conservatively, and pregnancy.

Baseline assessments: CBC, Coagulation profile, Renal function, CRP Under general anesthesia, patients were examined for abdominal masses. Those with palpable masses were excluded, and the remaining cases were randomly assigned to two groups using the closed envelope technique. Group A (n=18): peritoneal mopping with pelvic drainage. Group B (n=18): peritoneal mopping without drainag

Results

Table (1): Comparing distribution of background characteristics between study arms (n: 36).

	Group		
Term	Group A N (%) (n=18)	Group B N (%) (n=18)	p-value
Demographic data			
Age (years)	42.5 ± 20.7 17 to 75	34.1 ± 10.6 17 to 53	t: 0.1391
Sex			0.99
Female	6 (33.3)	7 (38.9)	
Male	12 (66.7)	11 (61.1)	
BMI	28 ± 2.4 24.2 to 31	27.6 ± 2.7 24.1 to 31.9	t: 0.5786
Comorbidities			
Diabetes	4 (22.2)	2 (11.1)	0.655
Hypertension	5 (27.8)	2 (11.1)	0.4
Ischemic heart disease	1 (5.6)	0 (0)	0.99
Past surgical history			0.23
CS	1 (5.6)	3 (16.7)	
Lap cholecystectomy	0 (0)	2 (11.1)	
Open cholecystectomy	1 (5.6)	0 (0)	
No surgical history	16 (88.9)	13 (72.2)	
α = 0.05. p < 0.05*, p < 0.01**, p < 0.001***			
P-values obtained from two-sample t-test (t) or Mann-Whitney test (U)			
P-values obtained from Pearson's chi-square test of independence			

Table (2):Comparing distribution of post-operative data between study

	Group			
Term	Overall	Group A N (%) (n=18)	Group B N (%) (n=18)	p-value
Wound infection	5 (13.89)	2 (11.1)	3 (16.7)	0.99
Wound infection severity	-	-	-	0.362
Deep	1 (2.78)	1 (5.6)	0 (0)	-
No infection	31 (86.11)	16 (88.9)	15 (83.3)	-
Superficial	4 (11.11)	1 (5.6)	3 (16.7)	-
Intra-peritoneal collection post-op	2 (5.56)	1 (5.6)	1 (5.6)	0.99
Time to stitch removal (days)	Avg ± SD 10.4 ± 1.3	10.2 ± 0.9	10.7 ± 1.5	t: 0.3039
Duration of antibiotics (days)	Avg ± SD 10.6 ± 1.4	10.4 ± 1.3	10.7 ± 1.5	t: 0.6415
Need for readmission	0 (0)	0 (0)	0 (0)	0.99
α = 0.05. p < 0.05*, p < 0.01**, p < 0.001***				
P-values obtained from two-sample t-test (t) or Mann-Whitney test (U)				
P-values obtained from Pearson's chi-square test of independence				

Conclusion

In conclusion, in this randomized controlled study of adults undergoing open appendectomy for localized complicated appendicitis, routine prophylactic drain placement did not reduce postoperative intra-abdominal collections or wound infections. However, it was associated with significantly greater postoperative pain and longer hospital stays. These findings, along with prior evidence, support a shift away from routine drainage and favor a more selective, individualized approach based on intraoperative findings and surgical judgment.