

DRAIN VERSUS NO DRAIN AFTER OPEN MESH REPAIR FOR INGUINAL HERNIA: A PROSPECTIVE COMPARATIVE STUDY

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Introduction

The inguinal canal is a common site for hernias, especially in males, due to its structural weaknesses. An inguinal hernia occurs when an organ or tissue protrudes through the inguinal region of the abdominal wall. Surgical drains are manufactured tubes used to evacuate various body fluids and have been an integral part of surgical procedures for many years. Their applications can be broadly classified into prophylactic and therapeutic categories. Surgical wound complications pose significant challenges in postoperative care, often leading to prolonged hospital stays, increased healthcare costs, and adverse patient outcomes. Common complications include seroma, hematoma, surgical site infection (SSI), and wound dehiscence. Understanding these complications, their etiology, and management is crucial for improving surgical outcomes and patient safety.

Aim of the Work

The aim of this study was to compare the role of prophylactic subcutaneous drain versus no drain after open mesh repair for inguinal hernia in order to assess its value in decreasing postoperative seroma, hematoma formation, scrotal edema, wound dehiscence and wound infection.

Subjects and Methods

The study included 100 patients who underwent open mesh repair for inguinal hernia at the GIT and hepatobiliary (B) unit; Alexandria Main University Hospital and the surgical unit; Gamal Abdel-Naser Hospital from February 2024 to August 2024. patients were evenly divided into two groups:
Group (A): 50 patients subjected to inguinal hernioplasty with closed suction or open corrugated rubber drainage.
Group (B): 50 patients subjected to inguinal hernioplasty without a drain.
Randomization was achieved using a computer-generated random number sequence, ensuring that participants were assigned to either the drain or no-drain group in a truly random manner. Both groups underwent the same surgical technique for open mesh repair, with the only difference being the presence or absence of a drain.
Patients were monitored in the immediate postoperative period for signs such as bleeding, or late infection. Vital signs including blood pressure, heart rate, and respiratory rate were monitored. Temperature monitoring was implemented to promptly identify signs of fever or hyperthermia, which could indicate infection or other complications.

Patients were monitored in the early postoperative period for signs such as bleeding, seroma, SSI or scrotal edema. Temperature monitoring was implemented to promptly identify signs of fever or hyperthermia, which could indicate infection or other complications.

Results

Table 1: Distribution of Studied Cases According to Postoperative Complications.

Postoperative Complication	Group A (n= 50)		Group B (n= 50)		Statistical Analysis	
	Number	Percentage	Number	Percentage	x ²	p
Hematoma	3	8.0%	14	28.0%	5.635	<0.001*
Grade I	3	100.0%	7	50.0%		
Grade II	0	0.0%	2	14.3%		
Grade III	0	0.0%	5	35.7%		
Seroma	4	6.0%	7	14.0%	3.551	0.006*
Grade I	4	100.0%	5	71.4%		
Grade II	0	0.0%	2	28.6%		
Scrotal Edema	7	14.0%	8	16.0%	0.774	0.994
Wound Dehiscence	1	2.0%	3	6.0%	0.411	0.591
Wound Infection	2	4.0%	6	12.0%	0.935	0.759

(x²) chi-square test; (p) probability value, significant if ≤ 0.05.

Table 2: ANOVA Analysis of Postoperative Complications Across Drain and No Drain Groups.

Complication	Group	Mean Complications	F-value	p-value
Hematoma	Redivac Drain	0.02	12.5	<0.001*
	Rubber Drain	0.01		
	No Drain	0.28		
Seroma	Redivac Drain	0.03	18.0	<0.001*
	Rubber Drain	0.01		
	No Drain	0.14		
Wound Dehiscence	Redivac Drain	0.03	14.0	<0.001*
	Rubber Drain	0.01		
	No Drain	0.1		
Wound Infection	Redivac Drain	0.2	17.5	<0.001*
	Rubber Drain	0.14		
	No Drain	0.12		

(*) Statistically significant difference if p value ≤ 0.05.

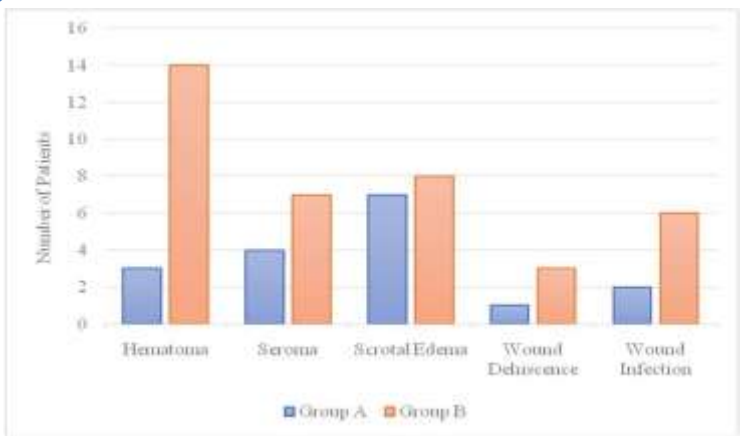


Figure1: Postoperative complications in both study groups.

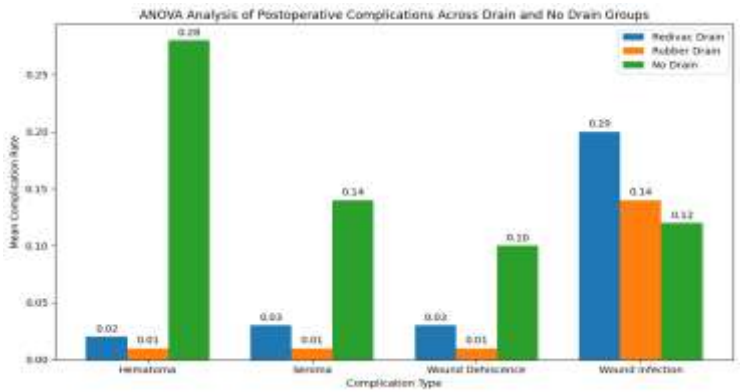


Figure2: Postoperative Complication Rates by Group.

Conclusion

- The use of drains is beneficial in preventing postoperative complications without adding unnecessary risk, supporting its routine use in specific cases of inguinal hernia repair.
- The use of rubber drains after open mesh repair for inguinal hernia significantly reduces the incidence of postoperative seroma and hematoma.
- Factors associated with increased risk of postoperative complications after open inguinal hernia repair:
 - Bilaterality
 - Longer operation time
 - High BMI
 - Elderly
 - Presence of comorbidity including taking anticoagulants