



ISSN: 2319-9490

RESEARCH ARTICLE

PROSPECTIVE CLINICAL STUDY OF THE IMPACT OF PLACEMENT OF PROPHYLACTIC SURGICAL DRAINS ON POST-OPERATIVE RECOVERY IN PATIENTS UNDERGOING ELECTIVE ABDOMINAL SURGERY

Anurag Bhattacharjee^{1,*}, Bhavaniprasad Kalagani² and Harshal Ramteke³

¹Resident, Department of General Surgery, Jawaharlal Nehru medical college, Datta Meghe University of Medical Sciences, Wardha, Maharashtra, India

²Senior Resident, Department of General Surgery, Jawaharlal Nehru medical college, Datta Meghe University of Medical Sciences, Wardha, Maharashtra, India

³Professor, Department of General Surgery, Jawaharlal Nehru medical college, Datta Meghe University of Medical Sciences, Wardha, Maharashtra, India

Received 27th December, 2020; Accepted 20th January, 2021; Published 28th February, 2021

ABSTRACT

Drains have become an integral part of the current surgical practice, irrespective of the specialty, the most common binding factor is the placement of drains. They act as a medium through which excess bodily fluids are drained that may hamper the generalized function of the body. They also act as exit medium for the passage of various blood products, pus, or act even act as an early indicator for impending morbidity or even mortality. However, their negative effects also continue to increase. There is a growing demand to study the actual benefit of drains whether they should be used so rampantly. Studies carried out overtimes have focused on individual systems such as Drain or no drain in colorectal surgeries however a collective assessment regarding abdominal surgeries as a whole has not been done. Hence this study has been carried out to study the impact of placement of prophylactic surgical drains on the post-operative recovery period on patients of major elective abdominal surgeries. **Results** - In our study carried out on 90 patients, the post-operative recovery period inpatient with drain placement was 22.20 ± 9.61 days with 42% of patients them between 21-30 days. In comparison to non-drain group which was 17.22 ± 8.49 days with 35% of patients seen a non-drain group between 11-20days. The p-value < 0.5 and was not significant. **Conclusion** – Drain placement has neither any advantage or disadvantage on the post-operative recovery period in major elective abdominal surgeries.

Key words: Drains, Elective abdominal surgery, prophylactic surgical drains, post-operative recovery period

Copyright © 2021, Anurag Bhattacharjee et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Anurag Bhattacharjee, Bhavaniprasad Kalagani and Harshal Ramteke. 2021. "Prospective clinical study of the impact of placement of prophylactic surgical drains on post-operative recovery in patients undergoing elective abdominal surgery" *International Journal of Current Research in Life Sciences*, 10, (02), 3421-3424

INTRODUCTION

The requirement of prophylactic drain placement continues to be a topic of heated discussion. While many members of the surgical fraternity (Conlon *et al.*, 2001) voice their opinion that drain usage is an important component of surgical practice furthermore some continue to feel that placement of drain is a useless commodity and should eventually be replaced, certain sections remain aloof to the situation and use drain as a safety measure or perhaps as a precautionary measure due to his or her doubts (Rather SA *et al* 2013). The availability of different drains in the market shows us its vast usage and its developing market. Operative procedures (Durai *et al.*, 2009) have embedded drain placement as part of a protocol.

Surgeons who advocate for drains argue that drainage of the peritoneum helps in early detection of the problems at a faster rate thus providing an early option, while people who were not in favour say that drain of the peritoneum is not possible (Al-shahwany *et al* 2012). Hence it is of no use. Regrettably, the concept of a precautionary drain is not on any database. So the importance of the overall use of the precautionary drain in abdominal surgeries remains a topic that shall be discussed in this paper. Hence this study has been carried out to study the impact of drains on the post-operative recovery period on patients of major abdominal surgeries.

METHODOLOGY

The present study was undertaken in a rural hospital in central India. This study was a prospective observational study. The study period was from June 2019 to June 2020. Around 90 patients were enrolled in the study. This was a joint study carried out by Acharya vinoba bhawe hospital, wardha All the elective abdominal cases of both sexes admitted in the surgical ward through opd or in an emergency requiring elective

*Corresponding author: Harshal Ramteke,

³Professor, Department of General Surgery, Jawaharlal Nehru medical college, Datta Meghe University of Medical Sciences, Wardha, Maharashtra, India.

abdominal surgeries for various abdominal pathologies will be evaluated with detailed history, clinical examination, pathology, surgical procedure underwent, postoperative course, various complications, duration of hospital stay and follow up till 1month was documented. They received similar postoperative antibacterial protocol and other treatments (nil per orally, iv fluids, analgesics). these cases were divided into no- drain and drain group. The study was done after the approval from the ethics committee of Datta Meghe Institute of Medical Sciences University.

Inclusion Criteria: All The Operated Cases For Various Intra-Abdominal Diseases On Elective basis Were Included

Exclusion Criteria:

-) Uncontrolled Diabetic Cases
-) Patients <6yrs Of Age
-) Patients Underwent Abdominal Surgeries (Elective) That Died Within 48hrs After Surgery.

RESULTS

In the present study of 90 patients, the age of presentation was between 11-74 years with the majority of patients in the age group of 31-40yrs. There were 63 male and 27 female patients. Patients were divided into distributed into drain & Non- drain depending upon the choice of operating surgeon for placement of prophylactic drain. The drain group had 50 patients while the non-drain group had 40 patients.

Among patients in drain group, drain was placed in all patients undergoing abdominal surgeries and the post-operative recovery period was assessed and compared to patients who underwent abdominal surgeries without drain placement. In the present study of 90 patients, the mean post-operative recovery period in the drain group was 22.20±9.61 days with 42% of patients seen in the drain group between 21-30 days. While within the non- drain group it was 17.22±8.49 days with 35% patients seen in the non-drain group between 11-20days. Among the distribution of patients in terms of gender, it was observed that out of 90 cases studied 63(70%) were male patients while 27(30%) were female patients. The patients were distributed randomly irrespective of the diagnosis.

DISCUSSION

Drain placement has become an important protocol in abdominal surgeries, (Gurusamy et al., 2007) their continues to remain negative feedback not on the overall recovery rate but also from the patients itself. Furthermore, the study also observes that owing to many factors associated such as drain site infection, (Key et al., 2016)hospital psychosis, persistent drain site pain, unwillingness among patients for an oral diet with a drain in situ, lack of willingness/ effort & fear among patient/ relatives to mobilize because of the drain in situ prolongs the post-operative recovery period among patients with drains (Platell et al., 2007).Furthermore, various studies have shown that the persistence of drains over a prolonged period of time, causes the loss of fluids which indirectly retards the process of healing thus further prolonging the duration.

Table 1. Age wise distribution of patients

Age Group(yrs)	Drain	Non Drain	Total	2-value
≤20 yrs	1(2%)	2(5%)	3(3.33%)	4.77
21-30 yrs	6(12%)	5(12.50%)	11(12.22%)	p=0.44,NS
31-40 yrs	10(20%)	13(32.50%)	23(25.56%)	
41-50 yrs	13(26%)	8(20%)	21(23.33%)	
51-60 yrs	10(20%)	9(22.50%)	19(21.11%)	
>60 yrs	10(20%)	3(7.50%)	13(14.44%)	
Total	50(100%)	40(100%)	90(100%)	
Mean±SD	47.10±13.44	42.85±14.22	45.21±13.88	
Range	16-68	11-74	11-74	

Table 2. Statistical data presentation of table 1

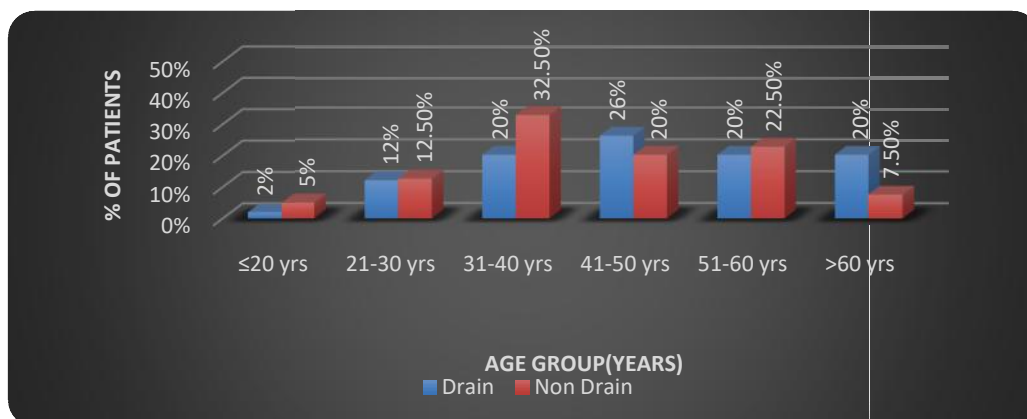


Table 3. Gender distribution of patients

Gender	Drain	Non Drain	Total	2-value
Male	34(68%)	29(72.50%)	63(70%)	0.21
Female	16(32%)	11(27.50%)	27(30%)	p=0.64,NS
Total	50(100%)	40(100%)	90(100%)	

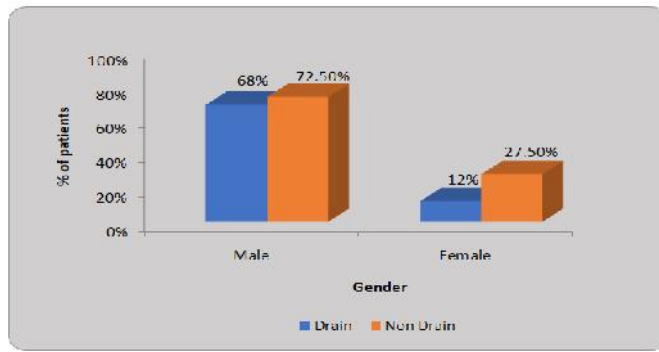


Table 4. Statistical data presentation of table 3

Table 5. Distribution of patients into Drain & Non-drain group

Study	No of patients	Percentage
Drain	50	55.56
Non Drain	40	44.44
Total	90	100

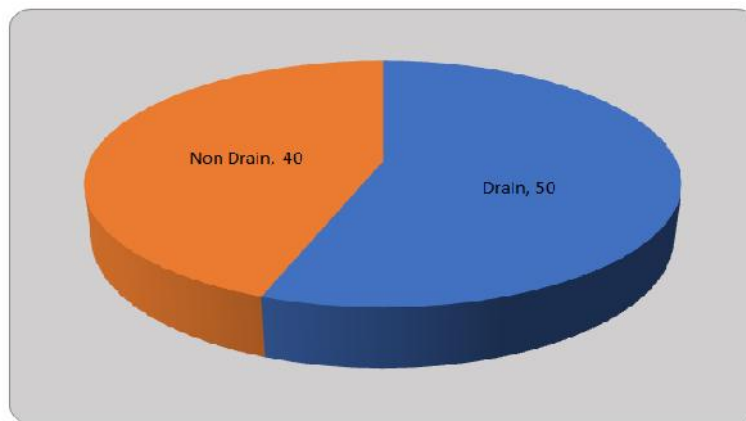
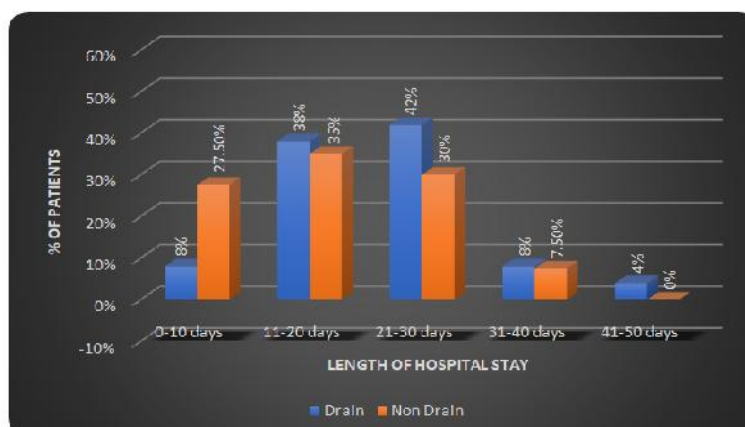


Table 6. Statistical data representation of table 5

Distribution of patients in two groups according to post-operative recovery period

Length of hospital stay	Drain	Non Drain	Total	2-value
0-10 days	4(8%)	11(27.50%)	15(16.67%)	7.60
11-20 days	19(38%)	14(35%)	33(36.67%)	p=0.10,NS
21-30 days	21(42%)	12(30%)	33(36.67%)	
31-40 days	4(8%)	3(7.50%)	7(7.78%)	
41-50 days	2(4%)	0(0%)	2(2.22%)	
Total	50(100%)	40(100%)	90(100%)	
Mean±SD	22.20±9.61	17.22±8.49	19.98±9.41	

Distribution of patients in two groups according to post-operative recovery period



Conclusion

In spite of the ritual of putting a drain which was thought to help in improving the overall patient outcome, there was no added advantage for putting a prophylactic drain placement in elective abdominal surgery.

Funding: This research received no external funding.

Conflict of interest: The authors declare that they have no conflict of interest.

Informed consent: Written and Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

Ethical approval for human: All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards (Institutional Ethics Committee Registration number: ECR/440/Inst/MH/2013/RR-2016).

Ethical approval: The study was approved by the Medical Ethics Committee of Datta Meghe Institute of Medical Sciences, Deemed University (Ethical approval Ref.No. DMIMS (DU)/IEC/2018-19/7448).

Data and materials availability: All data associated with this study are present in the paper.

REFERENCES

- Conlon KC, Labow D, Leung D, Smith A, Jarnagin W, Coit DG. *et al.*, 2001. Prospective randomized clinical trial of the value of intraperitoneal drainage after pancreatic resection. *Ann Surg.*, Oct;234(4):484–7.
- Rather SA, Bari SU, Malik AA, Khan A. 2013. Drainage vs no drainage in secondary peritonitis with sepsis following complicated appendicitis in adults in the modern era of antibiotics. *World J Gastrointest Surg* [Internet]. Nov 27;5(11):300–5. Available from: <https://pubmed.ncbi.nlm.nih.gov/24520428>
- Durai R, Mownah A, Ng P. 2009. Use of Drains in Surgery: A Review. *J Perioper Pract.*, Jul 1;19:180–6.
- Al-shahwany IW, Hindoosh LN, Rassam R. 2012. Drain or Not to Drain in Appendectomy for Perforated Appendicitis.11(3):349–53.
- Gurusamy KS, Samraj K. 2007. Routine abdominal drainage for uncomplicated open cholecystectomy. *Cochrane Database Syst Rev* [Internet]. Apr 18 [cited 2020 Sep 29];(2). Available from: <http://doi.wiley.com/10.1002/14651858.CD006003.pub2>
- Key A, Sch T, Med JA, Pipariya PR, Darbar R, Gupta A. 2016. Scholars Journal of Applied Medical Sciences (SJAMS) General Surgery Comparative Study between Drain versus No Drain in Elective Cholecystectomy., (November):2493–7.
- Platell C, Barwood N, Dorfmann G, Makin G. 2007. The incidence of anastomotic leaks in patients undergoing colorectal surgery. *Color Dis Off J Assoc Coloproctology Gt Britain Irel.*, 9(1):71–9.
