

# EVALUATION OF IMPORTANCE OF DRAIN IN ELECTIVE ABDOMINAL SURGERIES

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**Abstract**-Drains are used in surgery for many years to prevent the accumulation of bodily fluids and improving body function. Drain helps in providing an opening for body fluids, pus/flakes, blood or debrided materials that obstructs with wound granulation or provides a source for bacterial infection. Abdominal drainage is performed via usage of pvc or hollow rubber tubes with small openings in the apex point. Placement of a drain via a puncture around the surgical site or abdomen with deep pockets where there the chances of fluid accumulation is at its greatest. this study was to focus the usefulness of the precautionary drainage of peritoneum after abdominal surgeries and to study the duration, the quantity and character of drain and associated various postoperative complications associated with drains, it's complications and comorbidities. To study the outcome in abdominal surgeries by comparing "drain" and "non-drain" group. All the abdominal surgery cases of both sexes admitted in surgical ward through OPD basis requiring elective abdominal surgeries for various abdominal pathologies will be evaluated with detailed history. Drain use may lead to similar wound infections, need for additional open procedures for postoperative complications and quality of life scores versus when compared with no drain use. Use of prophylactic drain in abdominal surgeries shows no advantage in helping in reduction of postoperative complications or any other surgical benefit for the same.

**KEYWORDS**-Drain, non-drain, complications', morbidity, mortality

## I. Introduction

Drains usage has been used in surgery for many years to prevent the accumulation of bodily fluids and improving body function. The first known use of drains was shown by Hippocrates who applied hollow tubes for the management of empyema. Erasistratus of Alexandria first showed how urinary catheters can be used in surgery while Aurelius Celsius of Rome performed surgeries using lead and brass conical tubes with adjustable plugs for the management of ascites. Claudius Galen also showed usage of leaden tubes for the management of ascites. Drain helps in providing an opening for body fluids, pus/flakes, blood or debrided materials that obstructs with wound granulation or provides a source for bacterial infection. Abdominal drainage is performed via usage of PVC or hollow rubber tubes with small openings in the apex point. Placement of a drain via a puncture around the surgical site or abdomen with deep pockets where there the chances of fluid accumulation is at its greatest (1-4). Drainage occurs via gravitational pull and action of capillaries. A surgical knot is used to

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avoid movement or pulling out of drain from abdominal cavities. This process is seldom precautionary. Experts are using precautionary drainage on daily basis after abdominal procedures after its plus points was shown by Sims. But this theory was rejected by many in the surgical society. Doctors who prefer use drains, argue that drainage of peritoneum can detect early problems at a fast rate thus providing an early option in helping improve lives while people who were not in favor say that drain of peritoneum is not possible. Hence it is of no use. The concept is that intra-abdominal drain application helps in early detection of various abdominal complications thereby preventing the early collection of pus filled collections, reducing mortality and morbidity and decreasing the overall postoperative stay. Regrettably the concept of precautionary drain is not on any database. So the importance of overall use of the precautionary drain in abdominal surgeries remains a topic of further discussion. Several trials were carried out to see the efficacy of precautionary drain application after abdominal surgery. The conclusion shows that the use of precautionary application of drain peritoneal cavities is not useful in many scenarios (5-9). Despite all the data majority of the experts still employ precautionary drain application of the drain in deep cavities on regular basis thus adhering to the values of Tait "When u have doubt apply drain". However there is sparsity of the data regarding the importance of the use of precautionary drainage. Thus the value of precautionary drain remains disputable. Therefore the objective of this study was to focus the usefulness of the precautionary drainage of peritoneum after abdominal surgeries and to study the duration, the quantity and character of drain and associated various postoperative complications associated with drains, its complications and comorbidities.

## II. Methods

Study design: cross sectional study

**SOURCE OF DATA:-** Department Of Surgery AVBRH

**METHOD OF COLLECTION OF DATA:-** All the abdominal surgery cases of both sexes admitted in surgical ward through OPD basis requiring elective abdominal surgeries for various abdominal pathologies will be evaluated with detailed history, examination, pathology, surgical procedure underwent, postoperative course, various complications, duration of hospital stay and follow up till 1month. All the operated cases for various Intra-abdominal diseases on elective basis were included.

Thus cases thus taken for comparative study will be distributed into drain group and the rest in non drain group. Study on the basis of surgical site infection associated with drain site infection and post operative recovery period has been done in order to elucidate the study in Acharya Vinoba Bhave hospital.

A Proforma will be prepared with detailed comparison on the basis of certain factors including

1. Diagnosis-
2. Surgical Procedure
3. Operation duration(min)-                      Drain                      Non drain
4. Drain Used-                                      Yes/no                      Yes/no
5. Amount of drain fluid-
6. Character of drain-
7. Drain removal day-

## 8. Post Operative Recovery Period

### 9. Complications-

- |                                             |        |
|---------------------------------------------|--------|
| 1. Surgical site Infection(Wound Infection) | Yes/No |
| 2. Pulmonary Infections                     | Yes/No |
| 3. Wound Dehiscence                         | Yes/No |
| 4. Post operative fever                     | Yes/No |
| 5. Anastomotic leak                         | Yes/No |
| 6. Intestinal obstruction                   | Yes/No |
| 7. Drain related complications              | Yes/No |
| a. Omentum pulling                          | Yes/No |
| b. Drain site discharge                     | Yes/No |
| c. Drain site Infections                    | Yes/No |
| 10. Hospital Stay (Days) -                  |        |
| 11. Follow up-(1Month)                      |        |

### **INCLUSION CRITERIA**

All the operated cases for various Intra-abdominal diseases on elective basis were included.

### **EXCLUSION CRITERIA**

1. Diabetic cases
2. Patients < 6yrs of age
3. Patients Underwent Abdominal Surgeries (Emergency) That Died Within 48hrs After Surgery.

Bias: In order to avoid bias similar surgeries have been carried out and distributed into drain and non drain group in order to avoid preferences among both the groups. A total of 80-100 cases will be taken for comparative study.

### **Expected Results**

Our results will show that using a precautionary drain will not reduce the overall anastomotic leak and use of the drain will not be associated with the decreased anastomotic leak. In addition, we will also find no marked differences in the occurrence of drain site infection, surgical site infection, re-exploration, and other complications between the comparative studies.

## **III. Discussion**

The study will observe that owing to many factors associated such as drain site infection, hospital psychosis, persistent drain site pain, unwillingness among patients for oral diet with drain in situ, lack of willingness/ effort & fear among patient/ relatives to mobilize in view of drain in situ the post operative recovery period among patients with drains also increases. A number of studies were reviewed in order to see the various factors associated with this study (10-43). Few studies on the associated healthcare facilities in Wardha were also reviewed (44-77).

For a lot of experts, the main goal of application of drain after anastomotic surgeries is to guide the outflow of abdominal cavities rather than accumulation itself, in cases of anastomotic adhesions and infections, leak,

hemorrhage, or abscess within the abdomen are expected to be detected early by the precautionary use of a drain. Nonetheless, the experts who are against the daily use of a precautionary drain claim that it would cause infection that stimulates the formation of residual discarded tissue fluids and eventually lead to obstruction of drain.

Interpretation:

1. There will probably be little or no difference in preference among surgeons regarding preference of drains however the overall complication rate among drain group versus non drain group where the latter will be higher, further the duration of hospitalization will recorded more in the drain group in the period extending from 15-30 days.
2. Drain will lead to similar wound infections, need for additional open procedures for postoperative complications in both the groups

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