

Role of Negative Suction Subcutaneous Drains in Contaminated Abdominal Surgeries

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Received date: December 11, 2018; **Accepted date:** December 23, 2018; **Published date:** January 03, 2019

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Abstract

Wounds and their management are fundamental to the practice of surgery. In any elective surgery or in the surgery of trauma, the surgeon's task is to minimize the adverse effects of the wound, remove or repair damaged structures and enhance the process of wound healing to restore function. Because of unavoidable contamination of wounds that occurs at the time of surgery, surgeons have used a number of methods of wound management. Use of subcutaneous drains at the site of surgery is one of them. The study was carried out prospectively on patients of contaminated abdominal surgeries to assess the role of placement of negative suction drains in wounds subcutaneously on the incidence of incisional Surgical Site Infections (SSIs). This study was a prospective, open and comparative cohort study. Patients were divided into two groups by random sampling. Total sample size was 300 patients with 150 in each group. Subcutaneous suction drains were inserted in one group (cases) and no drains were inserted in another group (control). The results from the present study show that use of negative suction drain in subcutaneous plane during laparotomy for class III wounds reduces the incidence of postoperative surgical site of infection, seroma formation and wound dehiscence. It was concluded that insertion of subcutaneous suction drains at the end of operation could provide effective drainage of the wound collections and wound seroma, thereby preventing SSI and wound dehiscence.

Keywords:

- To know any role of placement of negative suction drains in wounds subcutaneously,
- To assess the role of placement of negative suction drains in wounds subcutaneously on the incidence of incisional SSIs.

Patients were divided into two groups by random sampling. Total sample size was 300 patients with 150 in each group. Subcutaneous Suction drains were inserted in one group (cases) and no drains were inserted in another group (controls). All laparotomy incisions performed at SKIMS Soura, in the age groups of 16 and 75 years, of either sex were included in the study. Among these patients only those patients with contaminated abdominal surgeries (class III) were included in the study. The patients were randomized to two groups. The first patient was put in the study group and the following in the control group. Prophylactic antibiotics were given to both groups of patients. The patients <16 years and >75 years, all the immunocompromised patients including patients on steroid therapy, patients with associated factors like diabetes, hypertension, bronchial asthma, tuberculosis, sepsis elsewhere, radiotherapy, hepatic insufficiency or renal insufficiency, patients who were in shock at the time of presentation, patients requiring ileostomy for surgical reasons or death of the patients in the postoperative period due to systemic cause were excluded from the study. Accidental removal of the drain was also excluded from the study. The incision was made by scalpel only. Wound closure technique was uniform in all of the patients. A closed drainage system for subcutaneous tissue was used through a separate stab incision. Drains were kept in place for two days. All the patients were examined and evaluated postoperatively for detection of wound seromas, SSIs and wound dehiscence. All participants were followed in outpatient department at regular intervals for about a month. They were evaluated throughout for wound healing and any complications. The diagnosis of seroma was made on a clinical basis in patients having serous discharge or soft fluctuant bulge in the wound which on aspiration revealed serous fluid. SSI cases were diagnosed within 30 postoperative day by ICT (Information and Communications Technology) according to the Centers for Disease Control and Prevention (CDC) criteria [1]: (1) Purulent drainage with or without laboratory confirmation from the superficial incision; (2) Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision; (3) At least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat and superficial incision were deliberately opened by surgeon, unless they were deliberately opened by



