

Easy to Apply Negative Pressure with Injector as an Active Mini Drain System

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1. Clinical Image

There are many drainage systems that can take off substances from body such as pus, blood, serum, lymph or intestinal content. The most important feature for the selection of appropriate drainage system to be used is the volume and viscosity of the liquid [1]. The ideal drainage system should be soft and non-irritant in order not to cause damage to the healthy tissues [1]. Furthermore, the drain must be stiff and can be fixed to tissue. Many different drainage systems have been defined for use postoperative surgery period. The drainage systems work as active-passive or open-closed. Closed drains are preferred by most surgeons, because open drains are more likely to cause infection than closed drains. Drainage systems based on pressure are divided into two; active and passive drains [2]. Active drains use pressure and are more effective in preventing the formation of hematomas. Collector is designed as injector which can be found in every operation room and the injector has no high collecting capacity, so we have called that system mini-drain. In this study, it is aimed to introduce a drainage system which works as closed and active, is prepared by an injector under operation conditions.

Materials required to prepare an active mini drain are; 20 cc disposable injector, 2,5 cc injector, blood drawing set with butterfly needle and scalpel number 11. Technique: After cutting the needle of the butterfly tip set, a catheter of the desired length was obtained, and the first 5 cm distal part of the catheter was drilled with a scalpel (number 11) in order to facilitate drainage. The distal part of the catheter that is drilled by a scalpel was placed in the operation area. The catheter was then transferred from the incision line and fixed to the skin (**Figure 1** and **Figure 2**). The potential dead space may occur after any kind of surgical procedure [3]. Seroma, hematoma and infection occurring in these dead spaces may decrease surgical success. In these cases preventive approaches take over [4]. The incidence of these complications can be reduced by careful hemostasis, dead space-free surgery and effective drainage systems [2]. Many types of drains have been defined which can be used as open-closed or active-passive. These drains are not always available in the operating room so; the need for planning new substances is implemented quickly, easily and safely. Due to the low cost of closed drainage systems made by injector, in the literature its usability was indicated [3,5]. Depending on the size of the dead space formed after surgery, the injector size can be planned as 5cc - 10cc - 20cc - 50cc. In the literature, there are publications showing that the desired pressure is determined and controlled drainage can be achieved by measuring the pressure with a manometer. The system we have planned was single-use and none of the patients had local tissue trauma or infection. The drain system we designed with the injector is simple and inexpensive as well as providing effective negative pressure and is also easily applicable. When the standard drainage systems can not be supplied in the operation room, we defend the design of this system is effective for patient.

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Figure 1: The proximal part of the catheter was inserted into the injector after the needle of the 20 cc syringe was removed. A 2.5 cc injector was used as a piston of previous injector.

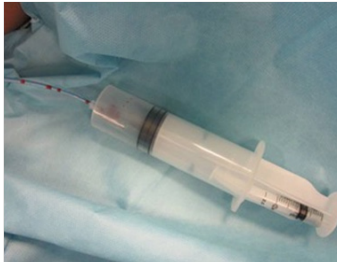


Figure 2: After the desired negative pressure was provided by the piston, the 20 cc injector was semi-fixed to the patient skin by court plaster. In the postoperative period the planned system was re-established when the collector was filled.

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