

Entrapped Suction Drain Tube Removal – A Novel Non-operative Technique

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Abstract

Entrapped suction drain tube is a trivial issue but the management of which is challenging and cumbersome to both, the patient and the surgeon. Complications during its removal including pain and tearing of the drain tube increase the need for open retrieval of the fragments. A novel technique of using a Gigli saw to cut through the traversing suture intraluminally and removal of the drain tube can be performed in the ward without any extensive complications.

Keywords: Retained; Entangled; Suction drain tube; Gigli saw; Cut.

Introduction

Suction drains are used during closure of surgical wounds to prevent hematoma. Drains are commonly used in all surgical subspecialties and the problem of accidental anchoring of suction drain tube is not rare [1, 2, 3]. Accidentally fixed suction drain tubes with subcutaneous or deep sutures are generally noticed few days after the surgery during the removal of the drain which is embarrassing not only to the surgeon but also to the patient. Suction drain tubes are made of plastic or silicon material and are soft, and tear easily when removal is tried forcefully especially since cutting needles are used for suturing. Forceful removal often leads to breakage of the tube or an internal injury leading to the need for a reoperation. Sometimes, the tear may go unnoticed leading to retention of the tube inside the body or a joint leading to long-term complications [1, 2]. Here, we describe a simple and

novel technique of removal of such an internally fixed suction drain tube without the need for opening the surgical wound.

Technique

The suction drain to be removed is cut approximately 3 cm from the skin and held using a mosquito forceps. A sterile Gigli saw is pre-contoured by bending its tip on itself so as to not cause any penetrating injury (Fig. 1). The Gigli saw is then passed inside the cut end of the suction tube till the resistance of the suture material is felt and then a little further inside past the traversing suture in the tube. To-and-fro motion is made holding the Gigli saw till the suture is cut and the tube is pulled out (Fig. 2). An additional subtle kink may be made in the Gigli saw in its distal part, keeping in mind the approximate site of the traversing suture to aid in its cutting.

Discussion

Incarcerated surgical drain is generally noticed few days after surgery during its removal and is not only an embarrassment for the surgeon but also a legal liability. Trial of pulling out of entrapped drain tube is painful and also creates anxiety to the patient, which may be difficult in a restless patient.

Negligent forceful removal may fracture the drain tube or cause damage to the surrounding structures requiring open exploration on the operation table, draining the patient emotionally and financially. The retained fragment may sometimes go unnoticed and lead to long-term complications, especially when retained inside a joint [1, 2, 3].

Rue et al. described a method of entrapped silicone drain removal by pulling and rotating 5–6 times by holding the outer end of the drain with a hemostat [4]. This method, however, increases the risk of tearing and retention of the tube fragment when the working length is large when it is tethered deep inside. Lazarides et al. described a method of removal by inserting a Steinmann pin of appropriate size inside the drain tube such that the sharp end cuts the suture [5]. Steinmann pins which have a trocar tip with a sharp pointed end can pierce through the walls of the drain tube by the applied driving force. Hence, the likelihood of cutting through the intraluminal suture is more only if it comes in the way of the tip of Steinmann pin, while an eccentrically traversing suture is prone to slide on the outer aspect of the trocar tip. Further, silicon drain tubes which may be placed in a curved configuration in the wound are

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Figure 1: Contoured Gigli saw with a blunt tip and gentle kinking using an artery forceps.



Figure 2: To-and-fro movement of the Gigli saw in the drain tube.

prone to be pierced by the Steinmann pin and cut easily. In instances, where the traversing suture is oblique longitudinally in the lumen, it may direct the Steinmann pin outward toward the wall of the tube, thereby piercing it.

Gigli saw is a thin stainless steel wire with sharp cutting serrations used to cut through bone. The present technique involves the use of the sharp cutting edge of a Gigli saw to cut through the suture. Hence, the likelihood of atraumatic

retrieval of the drain tube is increased. The flexible nature of the Gigli saw allows it to safely advance even in cases when the drain tube is tethered deep inside. The blunted tip created by bending the tip of the Gigli saw over itself prevents piercing the wall of the drain tube on longitudinal pressure. The subtle kinking of the distal part of the Gigli saw aids in providing additional cutting pressure on the suture, increasing the odds.

Conclusion

Retained drain fragment is an untoward incident which may or may not lead to complications. However, the anxiety, complications, and the need for opening the surgical site for the removal of the drain are cumbersome to both the patient and the surgeon. This novel non-operative technique of using Gigli saw to retrieve an entrapped drain tube may be used easily in the surgical ward.

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