

# Obtaining a hook from a disposable laparoscopic suction/irrigation system

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## ABSTRACT

Laparoscopic instruments are made to be either multi-use or disposable. Though the initial cost of reusable items is high, over time they become cost effective. These devices can be used on successive patients because they are reprocessed with appropriate disinfection and sterilization. Single-use disposable materials are sterile. They are not recommended for reuse. However, it is known that disposable devices are reused due to the financial concerns. In this study, a proposal is presented that could reduce some of the cost by taking a new tool from a disposable tool. It should be used in accordance with the production of a disposable device. It is hoped that creating another device from an existing one before disposal will be a financially friendly contribution to the institution.

**Keywords:** Disposable; hook; laparoscopic suction/irrigation system.

## Introduction

The surgical approaches have been steadily improving today. The medical technology has been developing and changing in line with it. The companies meet the requirements of the surgeons more quickly and produce surgical instruments and introduce them to the market by considering human health with the first priority. Meanwhile, they have to consider profit margins.

The medical instruments, especially the laparoscopic instruments, are produced either as reusable or disposable depending on their quality and functionality. The “reusable” materials which can be used again, are made of durable materials that are certified to be reusable by the

company. They can be cleaned and sterilized before they are used at the patients. Although their purchase cost is higher at first, they cost less since they are reusable. Since these instruments are durable for proper disinfection and sterilization processes, they can be used at different patients.

The “disposable” materials need to be disposed of after using them once. The companies provide these materials as sterilized, and they do not recommend reuse of them. Although it must be treated like this, these instruments cause a significant financial burden for the developing or undeveloped countries. It is known that disposable devices are reused due to financial concerns for this reason.



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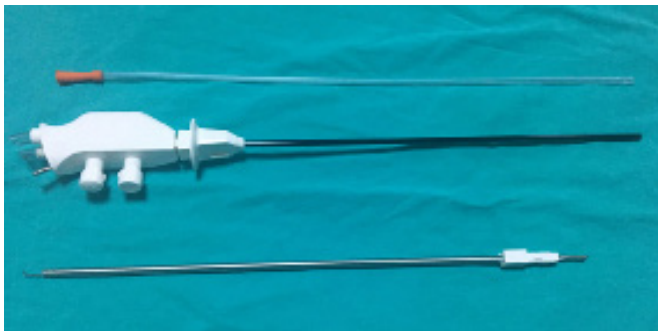
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Unfortunately, despite all the negative consequences, many health care centers reuse medical devices, without considering whether they have been produced as disposable or reusable, or whether they meet all the requirements in patient care and whether they are safe or not. However, complete reliability and safety is not guaranteed during the reuse of a disposable instrument at each patient.

In this study, we think that we can reduce the cost partly by obtaining a new instrument from a disposable tool. At least we hope to ensure using a disposable instrument in accordance with its intended purpose and creating another instrument after carrying out a number of processes before disposing them, thus financially contributing to the institution

### Technique

Some companies put disposable laparoscopic suction/irrigation systems on the market by integrating a monopolar cautery hook into them (Fig. 1). This laparoscopic suction/irrigation system is broken and the hook is removed once it is washed and cleaned after being used once (Figs. 2, 3). A plastic nelaton catheter is inserted into the entire



**Figure 1.** Disposable laparoscopic suction/irrigation with integrating a monopolar cautery hook into it.



**Figure 2.** Breaking the disposable laparoscopic suction/irrigation and removing the hook.

metal body (with the aim of avoiding unintended effects in the use of monopolar cautery) (Fig. 4). Then, the nelaton catheter is cut by letting a little part of the hook stay out. Then, the potential openings of this apparatus are sealed with silicone in order to maintain the continuity of pneumoperitoneum (Fig. 5). The own apparatus of the laparo-



**Figure 3.** Breaking the disposable laparoscopic suction/irrigation and removing the hook.



**Figure 4.** A plastic nelaton catheter is inserted into the entire metal body.



**Figure 5.** The potential openings of this apparatus are sealed with silicone in order to maintain the continuity of pneumoperitoneum.



**Figure 6.** The own apparatus of the laparoscopic suction/irrigation system that we cut for inserting the cautery is attached to the rear part and tightened.



**Figure 7.** Prepared hook.

scopic suction/irrigation system that we cut for inserting the cautery is attached to the rear part and tightened (Fig. 6). Finally, the laparoscopic hook is prepared (Fig. 7).

## Discussion

Ensuring cleanliness and continuity of laparoscopic devices is important for patients and surgeons. The increasing number of cases, the inadequate number of laparoscopic instruments and their high costs sometimes cause problems for the surgeons. Such that we have to clean the laparoscopic instruments and decontaminate them quickly without damaging the instruments to use them in the next operation. Although some instruments are disposable, they are used more than once, since they are still operational. The major reason for this is the increasing costs. However, in an experimental study carried out by using 40 laparoscopic trocars by Ulualp et al., it has been revealed that disinfection process is not effective on disposable laparoscopic instruments, which have a relatively complex structure, and reuse of them may cause cross-infection.<sup>[1,2]</sup> In another study, it has been found that reuse of them has not increased the rate of infection if they are sterilized properly and effectively.<sup>[3]</sup>

Special attention has to be paid to the cleaning especially for the lumen-instruments with a complicated structure and also the cleaning control is required. However, it has been reported that the interior parts of the lumen-instruments with a complicated structure such as the Suction/Irrigation system is not well cleaned and thus an infection

can develop due to contamination of the liquid passing through this lumen.<sup>[2,4]</sup> For this reason, we do not suggest reuse of these instruments.

The Suction/Irrigation system from which we removed the hook that we used has also a complicated structure with lumen. However, the hook we obtained is a one-piece, non-lumen tool that has no opening. To conclude, before disposing of the Suction/Irrigation system, its hook can be removed and it can be safely used as a laparoscopic monopolar hook cautery after a simple procedure after cleaning. Therefore, we can have a little financial contribution.

## Disclosures

**Peer-review:** Externally peer-reviewed.

**Conflict of Interest:** None declared.

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