Smoke Evacuation: A Novel Solution in a Busy Clinical Environment

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Surgical smoke from electrocautery and laser therapy is a commonly encountered hazard in dermatologic surgery. The health risks of surgical smoke are well documented. These risks include exposure to infectious particles and mutagenic compounds. Furthermore, there have been multiple animal studies demonstrating acute and chronic inhalational injuries.\(^1\) For reference, it’s estimated that the smoke generated from 1.0 gram of electrocauterized tissue has a mutagenic potential equivalent to 6 cigarettes.\(^2\)

Unfortunately, smoke evacuation represents a challenge in a busy clinical environment. The smoke evacuator apparatus traditionally requires an additional set of hands. This presents an obstacle when operating alone or when the procedure requires both of the assistant’s hands. The solution depicted provides efficient smoke evacuation while freeing the hands of both surgeon and assistant.

In this setup, the smoke evacuator is clipped securely to an easily adjustable Delasco metal stand available in most catalogs for surgical equipment. The flexible portion of the stand allows the evacuator to be oriented so that it is within the National Institute for Occupational Safety and Health recommended distance, 5.1 cm, from the site of cautery and positioned in a manner that does not block the surgeon’s visual field.\(^1\) A sterile towel is draped over the flexible neck to allow adjustments. A foot pedal enables the surgeon to easily turn on the smoke evacuator without releasing the electrosurgical device. The stand also adjusts vertically to increase its utility in different patient positions. This simple piece of equipment allows for efficient hands-free smoke evacuation (Figure 2).
References


Figure 1: “Smoke evacuation set-up”

Figure 2: “Smoke evacuation during surgery”