

## Ideas and Innovations

# Bipolar cautery forceps: An economical version

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### ABSTRACT

**Context:** Bipolar cautery forceps are an expensive instrument and especially in Government Medical colleges and Government Hospitals, getting a pair is a very tedious and prolonged task due to official reasons.

**Aims:** To make a cheap and easily obtainable bipolar cautery forceps.

**Settings and Design:** The reason for innovation was that the cautery forceps in the department were out of order and we were not getting replacements.

**Materials and Methods:** Made from condemned and damaged forceps or from stainless steel nonsurgical forceps which are very low-cost, very cheap and easy to get hold of, especially in a Government institution with limited resources.

**Results:** It has been used for the past one and a half years in our Department for plastic surgical procedures, including microvascular surgery. Initially, it was designed when the cautery forceps in the department were out of order and we were not getting replacements and later on, it became part of the routine set as it was found to be equally good.

**Conclusions:** A very cheap and useful alternative to the commercially available bipolar cautery forceps has been made.

### KEY WORDS

Bipolar cautery forceps, electrocautery, alternative

### INTRODUCTION

Bipolar cautery is an indispensable instrument not only for plastic and microvascular surgery, but also for many other branches of surgery. Good bipolar cautery forceps are quite costly and get electrical problems very often. Such problems are of major concern in Government Hospitals, where getting a new instrument is a very difficult and time-consuming task due to financial and administrative reasons and available instruments are age-old. There is also the problem of sterilizing the forceps for multiple cases when there are only one or two cautery forceps.

### MATERIALS AND METHODS

Condemned Adson's tissue forceps are easily available, usually in large numbers. It is easy to find the ones which should make good bipolar cautery forceps. Fine Adson's forceps with minor damage, either of the tip or of the hinge, even if disarticulated, were used. For finer tipped forceps, commercially available stainless steel forceps used for handling electronic equipments were used, each costing around Rs. 20. If insulation was required, ones with a plastic sheath till the edge were used, which gave good insulation.



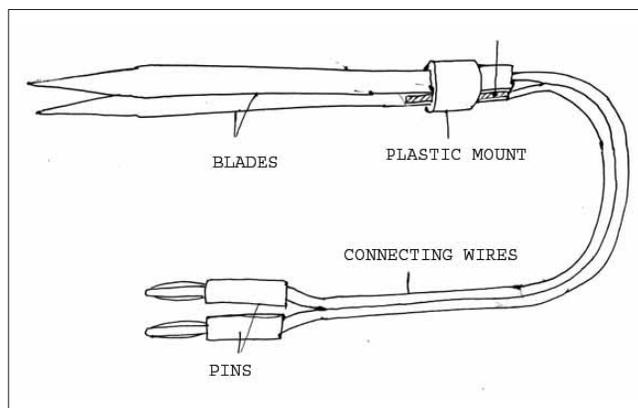
**Figure 1:** Disarticulated forceps blades mounted with insulation material in between

### Technique and clinical experience

The forceps with a damaged edge were equalized in length and the edges filed to be atraumatic, under magnification. They were then disarticulated and remounted in the correct position after connecting wires to each blade directly or through an adapter [Figures 1-2], with nonconductive material in between. The hinge was held together using acrylic material. The other ends of the wires were connected to suitable pins to match the cautery machine. The plastic-coated electronic forceps gave readymade insulation till the edge. The forceps were used with the regular cautery machine.

### DISCUSSION

The homemade bipolar cautery forceps have been in use for over a year and a half in over 100 patients. They were found to be as good as the commercially available forceps. The Adson's forceps used were found to be even



**Figure 2:** Diagram of construction of bipolar cautery forceps

better than the commercial bipolar forceps that we had, in terms of significantly less charring. Since the forceps are made by the author himself and of very simple design, any damage or connection problems can be easily rectified. We have found it very useful and are very happy with the performance and in many instances, we prefer it over the original ones we have. Each forceps costs around Rs. 40 in materials to make. The low cost of making each forceps has ensured an ample number of cautery forceps for use in our theatre which has multiple operating tables and large case loads.

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