Construction of a Simplified Pericardiocentesis Electrode*

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A recent communication by Neil, Hurst, and Penfold described the construction and advantages of a pericardiocentesis electrode. It was clear that this device would be a definite aid in tapping pericardial effusions, serving both as a solid electrical contact for electrocardiogram monitoring and as a guard against inadvertent advancement of the tapping needle. It was also apparent that without the availability of a machine shop or a commercial source, procurement of this pericardiocentesis electrode would be difficult. We have therefore fashioned a device of essentially the same design, but of easily available material and without the use of complicated tools. This report describes the construction and use of a simplified pericardiocentesis electrode (Fig. 1).

DETAILS OF CONSTRUCTION

The basis of the device is a #18 gauge Cournand indwelling arterial needle (such needles are in everyday use in cardiology laboratories). The needle is sawed off at the hub. Then, with the flange supported in a vise, the hub is drilled through with a 5/64th inch drill bit to remove the extension of the original needle. A small hole is drilled perpendicularly into the hub with a #21 or #22 drill bit and threaded to receive a small thumb-screw (8/32 thread N.C.). A 15 to 20 cm. piece of rubber-insulated, braided copper wire (as used on the "Bovie" electrocautery) is soldered to a side of the hub from which the chrome plating has been removed by filing. The other end of the wire is soldered to the base of an electrocardiograph lead receptacle removed from a discarded electrocardiograph electrode.

USE OF THE DEVICE

The entire apparatus is autoclaved. When ready for use, the "V" lead of the electrocardiograph is screwed into place and any needle (up to size #15 gauge) is inserted fully through the hub and locked in place by the thumb-screw. The pericardiocentesis is carried out in the usual way with constant electrocardiogram monitoring of the "V" lead. When the desired depth of penetration is obtained, the thumb-screw is loosened and the device slid forward on the needle and locked in position with the flange flush against the skin.

SUMMARY

A simplified pericardiocentesis electrode is described which prevents inadvertent advancement of the needle and allows constant electrocardiographic monitoring.

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REFERENCE