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REGULAR FEATURE

Ujuzi (Practical Pearl/*Perle Pratique*)

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Ujuzi means skills in Swahili and is intended to be a regular feature for colleagues to share practical interventions, innovations and novelties that have proved useful in the management of patients in the prehospital environment or Emergency Centre. You can let Ujuzi know about your practical ideas by emailing practicalpearl@afjem.com.

Improved cotton wool three-lead ECG electrodes

In a resource limited setting, such as Ghana, it can be fairly expensive to replenish standard, disposable electrodes used for continuous ECG monitoring. As a result, running out of electrodes happens more often than it should. This creates an unsafe monitoring environment for the critically ill in the emergency centre and intensive care unit or during procedural sedation and anaesthesia. We have found that one can effectively improvise ECG electrodes using cotton wool swabs. The method is described below:

1. Slightly moisten three cotton wool swabs (Fig. 1). Use normal saline although it works well with water too.
2. Place the cotton wool swabs in normal position as you would electrodes for a three lead ECG (Fig. 2). Use of water-soluble gel (such as KY Jelly) between the skin and cotton wool swabs is optional.
3. Attach the ECG leads to the cotton wool swabs and fasten by taping over the probe and swab as shown in Fig. 2.
4. Turn on the monitor and inspect the ECG tracings for quality (Fig. 3).

Improved electrodes have been described in the literature previously, but none as simple as using cotton wool swabs.^{1,2} Samaddar, et al. described local sourcing and manufacturing of reusable electrodes in two papers.^{1,2} He showed that use

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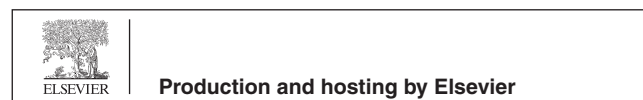


Figure 1 Equipment required for improvised cotton wool three-lead ECG electrodes.

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Figure 2 Placement of cotton wool ECG electrodes.



Figure 3 Monitor output for cotton wool ECG electrodes.

of the locally produced, reusable electrodes reduced the cost of disposable electrodes.^{1,2} We recommend similar local innovation. Use of cotton wool swabs should not be considered standard of care and must be used only as a temporizing measure when no suitable alternative is available.

Conflict of interest

None declared.

References

1. Samaddar DP, Mahapatra BC, Ray B. Indigenous reusable chest electrodes a cost effective alternative to commercial disposable electrode for ECG monitoring. *Indian J Anaesth* 2002;**46**(6):437–40.
2. Samaddar DP, Singh RN, Kumar S, et al. Indigenous improvisation in the use of ECG leads in a multidisciplinary ICU – a value engineering. *Indian J Crit Care Med* 1999;**3**(1):8–14.