Subject : Microstim current display
Date : Tue, 22 Nov 2005 09:38:00 +0100
Linked to : Nigel Harper
From : "NIGEL HARPER" <nigeljnharper@btopenworld.com> (By way of helen.lamb@viamed.co.uk)
To : JSLAMB (John Lamb) <GoldMine User>

Dear John,
These are the points I would make. A display of the delivered current is not advantageous because:

1) The current required for supramaximal stimulation varies considerably between patients (Kopman 1984, Greer 2001). The best way to establish supramaximal stimulation is to gradually increase the stimulus currrent until the maximal response is elicited (Harper 1995).
2) Because the Microstim is a constant current stimulator, it is not subject to current-reduction as a result of high skin impedance. A non-constant current stimulator needs a display to indicate the delivered current.
3) A numerical display can give the erroneous impression to the inexperienced user that the display somehow indicates the magnitude of the muscle response.

References
1)Kopman AF, Lawson D. Milliamperage requirements for supramaximal stimulation of the ulnar nerve with surface electrodes. Anesthesiology 1984; 61: 83-85.

2)Greer-R; Conway-D; Harper-NJN. Neuromuscular monitoring in Intensive Care patients: Milliamperage requirements for supramaximal stimulation. Br-J-Anaesth. 2001 Oct; 87: 625-627.

3) Harper NJN. Monitoring Neuromuscular Blockade. in Muscle Relaxants in Anaesthesia. eds Harper NJN and Pollard BJ. Edward Arnold 1995. Chapter 6, pp 97-126.

Looking forward to receiving some samples!

Best wishes,

Nigel