Editorial: Multiple waveforms and spinal cord stimulation – A new era?

G K Matis

Abstract

Back pain is a highly prevalent adverse health condition in adults. Almost 20% of the population suffers either from severe or disabling back pain (1). Failed back surgery syndrome (FBSS) is associated with the persistence of pain following surgical treatment of these patients (2) with an incidence ranging between 10% and 40% (3).

Spinal cord stimulation (SCS) is recommended as a treatment option when the conventional medical management has failed (4). In this context the patients can choose among various waveforms (tonic, BURST, high frequency) (5). However, up until now (with the exception of the USA), the patients should choose only one type of stimulation. It was not possible for them to combine at the same time 2 different waveforms, for example a tonic stimulation for the leg pain and a BURST-stimulation for the back pain.

As of September 24th, a new neurostimulator (Spectra WaveWriterTM, Boston Scientific) (Fig. 1) is available for the patients living outside the USA (6). On the same day, we performed the first implantation in Europe (Fig. 2). This device is a milestone for the field of neuromodulation. For the very first time the physicians can offer a really personalized therapy with combined waveforms. The individual nature of pain can now be better addressed.

The novel waveforms could be considered as the epidural version of the bolus dosing strategies which many pain physicians already implement in their everyday practice (7). Providing multiple waveforms during SCS-trials could overcome the limitations of providing only one stimulation-modus and, thus, achieve better pain relief (8). The availability of a neurostimulator which can support at the same time more than one stimulation types marks the dawn of a new era. As always a new era is associated with hope and great expectations and as Charles Kettering, an American inventor, once said: “high achievement always takes place in the framework of high expectation”.

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Figure 1
The new neurostimulator.

Figure 2
The whole team.

References
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