

SLIGHT CHANGES TO FIX THE PNE LEAD CAN DOUBLE THE SUCCESS RATE

Aims of Study

During recent years the peripheral nerve evaluation (PNE) became a standard test before implantation of a sacral root nerve stimulator (SNS). The PNE-test has the main challenge of positioning temporary leads in the location with the best response. We all have the problem of lead migration after positioning in the sub-chronic treatment phase. Although the lead is fixed to the skin, it often moves out of position when the patient moves. That requires at least two changes: voltage (V) needs to be increased and/or the response becomes different. We cannot say for sure or just with our experience, if the outcome justifies a chronic implant or if the PNE has to be redone. With a simple improved technique, the lead is kept in place during the time of the evaluation.

Methods

In the last 15 patients, we used a new technique to subcutaneously secure the PNE lead. We tested the sacral roots with the PNE needle in local anesthesia to find the root with the best response. Under X-ray control we place the PNE-lead to the tip of the needle before the needle is pulled back. After additional testing with the same parameters, the needle is taken off and used as a trocar subcutaneous. The lead is guided with this trocar subcutaneous and secured in this easy way. The contra-lateral lead is placed using the identical technique and subcutaneously guided to the same side. To remove the leads, a little more force is needed as opposed to the common way.

Results

In 12 patients, voltage was not changed through the entire sub-chronic evaluation. Three of the patients needed an additional PNE to place the lead(s) accurately. With the electrode correctly positioned, voltage was almost not required to be changed ($\pm 0.5V$). A X-ray proved the electrode position. Electrodes had to be placed again for two reasons: The electrode slipped deeper while positioned through the PNE needle or pulled back at the time when it was subcutaneously tunneled. In one heavy patient, subcutaneous fat caused the lead to move and demonstrated that even this technique cannot always ensure a good result.

Conclusions

This described technique is simple, easy to learn and does not cost anything more. Independent to securing the lead, it is important to ensure the lead is in the best response position. The highest risk to move the electrode out of its optimal position happens while the PNE needle is pulled back and the lead is held or pushed in. Perhaps this is a good alternative to the two-step implant. 11 patients have already received chronic implants; two patients are waiting to receive their implant. The mean follow-up is 6 months and all systems are working to the satisfaction of the patient and the surgeon. This technique to place the PNE leads improves the success rate to 80%.