

Treating chronic neuropathic chest wall pain following cardiac surgery with Percutaneous Electrical Nerve Stimulation (PENS). Case report.

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Introduction

Post cardiac surgical neuropathic chest wall and sternotomy scar pain are common conditions following cardiac surgery¹. A study by Eisenberg² noted that out of 540 subjects 217 were defined as having post CABG pain (PCP), 56% reported chest wall pain, graded by 65% as moderate, 72% reported it interfered with daily activity, 53 reported left-sided chest wall pain, 47 scar pain and 9 right-sided chest wall pain.

Case report on

A 63 year old man following two myocardial infarctions in 2003 underwent CABG, post operatively he developed a wound infection and underwent further surgery for wound and skin debridement and then further surgery to remove sternal wires following which he produced hypertrophic scarring over the sternum which is now very tender to touch. Since surgery he has complained of unilateral chest wall pain, worse on the left over 11th and 12th rib the pain is constant, complicated by Costochondritis with hyperalgesia and allodynia across the chest he is unable to sleep on either side due to pain and complains of repeat chest infections and breathlessness severely affecting his Quality of life.

Previous treatments included: -

Gabapentin, Dihydrocodiene, Co-codamol, Pregablin, Bupivacaine 0.5% and Depomedrone 20mgs for costochondral joint pain gained 2 weeks pain relief. AngioTENS specifically designed for chest pain reduced hyperalgesia by 50% but returned when AngioTENS was removed.

Discussion

Percutaneous electrical nerve stimulation (PENS) is used to relieve chronic intractable pain but unlike TENS the stimulating probes are surgically introduced and advanced subcutaneously, either around or immediately adjacent to areas of hyperalgesia and/or allodynia. The stimulating un-insulated probe(s) when in place under the skin are connected to a external generator (the Algotec NeuroStimulator), stimulation is then induced.

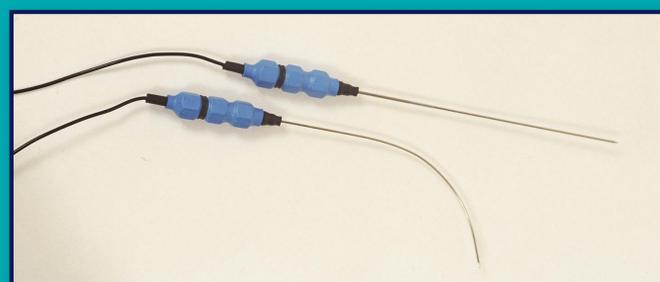
PENS probes inserted across both sides of the chest wall, Probe 1 left side, programme C for 1500s at 1.6v, Probe 2 right side, programme C for 1500s at 2.2v,

Outcome

Post PENS treatment at one month the patient reported a 95% reduction in chest wall pain which was sustained across the left side of the chest wall for 7 months and 12 months across the right side of the chest wall, but with no improvement in scar pain.



NeuroStimulator PENS therapy®



NeuroStimulator PENS therapy® Probe

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Conclusion

As Lahtinen's study suggests and our experiences at NRAC supports, large numbers of patients are affected by neuropathic chest wall pain post CABG and this case report offers a means through PENS of an alternative therapy. Presently waiting admission for the implant of a trial epidural lead(s) pre implant of a spinal cord stimulator.

References

Lahtinen P. et al. Pain after cardiac surgery. A prospective study of 1 year incidence and intensity. *Anesthesiology* 2006 Oct, 105(4) 794 - 800
Eisenberg E et al Prevalence and characteristics of post coronary bypass graft surgery pain (PCP). *Pain* Vol 92 issue 1- 2 May 2001, pg 11 – 17.