

Sympathetic Plexus Stimulation: a novel case study.

Kothari S., Goroszeniuk T.

Pain Management Centre, Guy's & St. Thomas' Hospitals, London SE1 7EH.

#### Introduction

Neuromodulation techniques for the control of chronic neuropathic pain have been increasingly gaining in acceptance. From encouraging results using short targeted stimulation of peripheral nerves and plexuses' producing pain relief<sup>2</sup>, we report on the first ever sympathetic plexus stimulation in five cases successfully treated at our centre.

Case History A: A 57 yr old Caucasian male, was diagnosed with chronic pancreatitis. Tests revealed an atrophic pancreas with loss of exocrine function. He was referred with severe, constant radiating back pain. To date medical therapy afforded him no relief.

Case History B: A 31 yr old male suffering with epigastric pain referred to back. He was diagnosed with chronic pancreatitis and associated pseudocyst of pancreas.

Case History C: A 56yr old Caucasian male was diagnosed with Carcinoma of Pancreas.

Case History D: A 41 yr old Caucasian female, was referred by the urologists for the management of severe intractable loin pain. A battery of investigations failed to demonstrate any specific pathology. She had similarly been unresponsive to several pharmacological manipulations.

Case History E: A 30 yr male complaining pain in left loin radiating to left groin. Thorough investigation by urologists failed to reveal any specific pathology.

#### Methods:

22 G, 150 mm., insulated short beveled needles (Stimuplex D, Braun) were introduced percutaneously to approach the coeliac plexus in patient A and lumbar plexus in patient B. Stimulation (Stimulpex, Braun) using a frequency of 2Hz and optimal amplitude was then administered for a duration of 5 minutes. The VAS pain score was recorded at one minute intervals throughout the procedure and then again at 30 and 60 minutes.

Case D later underwent a temporary trial catheter (Epimed).

#### Results:

The VAS at the start of the procedure of patient A was 7 and reduced to 0 at 5 minutes and the patient remained pain free at 30 and 60 minutes. Patient B and C started the procedure with a VAS of 9, which was subsequently reduced to 1 at 5 minutes. It stayed at 1 for both 30 and 60 minute observations. Case D and E started pre procedure with a VAS of 8 and 7 respectively, which reduced to 0 at 5 minutes and stayed at 0 for next 60 minute duration.

Case D gained pain relief for 8 weeks following the 5 minute stimulation and was completely pain free with the trial catheter and all patients are now awaiting permanent implant.

#### Discussion:

To our knowledge this is the first reported case study extending the use of nondestructive neuromodulation to include the sympathetic plexus. Fears of stability of electrode were thwarted as Pajunk stimulong trial catheter was successfully placed and retained for 14 days.

Conclusion: This small study has demonstrated that the technique as described can be an extremely effective method for the management of chronic pain in

specific clinical scenarios.. We acknowledge that further studies are most certainly needed to demonstrate that these results can be translated into producing sustainable long-term pain relief.

References:

1. Alo KM.,Holsheimer J., New trends in neuromodulation for the management of neuropathic pain. Neurosurgery, 2002, 5,690-704.
2. Goroszeniuk T., Goroszeniuk D.,Short neuromodulation trial in neuropathic pain produces varying duration but reproducible pain relief. Pain in Europe IV. 4th Congress of EFIC, Prague, 2-6.09.2003.