Prolonged relief of chronic pelvic pain by pulsed radiofrequency ablation of superior hypogastric plexus performed under ultrasound guidance: A case report

Sir,

Non-malignant gynaecological chronic pelvic pain (CPP) is commonly treated by medical drugs but frequently is inadequate. Recently, ultrasound-guided superior hypogastric plexus block (SHPB) with local anaesthetics was found effective, however, its effect was short-lived.\[1\] We describe longer pain relief by pulsed radiofrequency ablation (PRF) of superior hypogastric plexus (SHP) for CPP.

A young female nulliparous married patient, 25 years of age, 45 kg, 151 cm tall, with CPP secondary to adenomyosis was referred for pain management. She had a history of severe, aching, infraumbilical lower pelvic pain, radiating to back and perineal region, from the last day of menstrual cycle lasting for 5–7 days; occurring every month for the last 2 years. Treatment included oral tablets of various antispasmodic, non-steroidal anti-inflammatory drugs, hormonal therapy with oral contraceptives and gonadotropin-releasing hormone (GnRh) analogues, intramuscular diclofenac injections and laparoscopic adenomyomectomy, all of which were not effective.

She reported lower pelvic pain of a numerical rating scale (NRS) 8/10. Routine blood investigations including serum estradiol (27 pg/mL), follicular stimulating hormone (10 mIU/mL), luteinising hormone (7 mIU/mL) and testosterone (1 ng/dL) were within normal levels. Heart rate was 110/min and non-invasive blood pressure was 126/88 mmHg. As she was nil orally, after obtaining informed consent, an ultrasound-guided superior hypogastric plexus block (USHPB) for immediate pain relief was planned in the pain centre. The bladder was voided and after attaching basic monitors and securing intravenous line, under aseptic precautions, USHPB was performed with 0.2% ropivacaine with 30 µg clonidine with good pain relief and no complications [Figures 1 and 2].\[1\] Intravenous ceftriaxone 1 gm was injected after a negative sensitivity test. Post-procedure, NRS decreased to 1–2 within 15 min and heart rate decreased to 84/min. She remained pain-free but reported similar symptoms next month, and a repeat USHPB performed was again effective.

The patient desired prolonged pain relief, and thus PRF of SHP was planned after 2 weeks of the present block, in the pain-free period. The patient was informed that post-PRF pain relief would commence after 5–10 days, and that PRF is effective for 4–6 months. After consent, she reported for a procedure with oral bisacodyl the night before and overnight fasting. In the operating room similar precautions and monitoring as described above were undertaken. Ultrasound scanning was done with a curvilinear probe as previously described.\[1\] After local infiltration, a 20-gauge 15-cm Cosman radiofrequency cannula with 10-mm active tip was inserted in out of plane (OOP) needle orientation to hit the anterior bony vertebral body of L5. The styllet was removed and replaced with a radiofrequency electrode. Motor response to 2Hz stimulation at 2 V was negative. Following this, radiofrequency ablation with a pulse frequency of 2Hz and a pulse width of 20 ms was applied for 480 s at 42°C. Post-procedure, intramuscular injection of diclofenac 75 mg was given. The patient remained haemodynamically stable, reported no complications and was discharged after 4 h with advice to continue oral pain medications. After one week she reported a NRS 4–5/10, which decreased to NRS 0–2/10 at one month and has remained so since the last 5 months. Patient consent was taken for the present report.

The aetiology of CPP is complex as it involves both somatic (T12-S5) and visceral (T10-S5) systems.\[2\]
For alleviating CPP, numerous modalities have been tried but have not proved completely effective like surgical procedures of pre-sacral neurectomy, surgical removal of superior hypogastric plexus, laparoscopic uterosacral nerve ablation (LUNA) and hysterectomy.[2]

SHPB for CPP is effective because of sympathetic predominance in the plexus, which transmits the majority of pain signals from the pelvic viscera.[3] It is commonly performed under fluoroscopic or computed tomographic (CT) guidance, however, disadvantages include radiation hazards and the requirement of a special block area. Longer pain relief in the present patient with neurolytic agents was not deemed appropriate as CPP was non-malignant. Conventional radiofrequency ablation (CRF) was not preferred as it causes neurodestructive process compared to PRF, which causes non-destructive neuromodulation, and secondly, it requires close proximity of needle to nerve compared to parallel needle orientation required in CRF, not possible in the present technique of USHPB with anterior OOP needle orientation.[4,5]

The effectiveness of PRF for long-term relief of CPP in the present female patient is encouraging, and thus randomised controlled trials of the same are recommended.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has/given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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