

Pulsed radiofrequency lesioning of saphenous nerve and adductor canal in lower limb pain due to metastatic nodule

Sir,

Metastasis from colon cancer presenting as painful swelling of thigh is a rare manifestation.^[1] We reported a case of neuropathic pain in the lower-limb due to a subcutaneous metastatic mass in the thigh that was managed with pulsed radiofrequency (PRF) lesioning of saphenous nerve (SN) and adductor canal.

A 59-year-old male presented with severe continuous burning pain and severe pain on touch in the affected area in the right lower limb on the medial side of thigh up to the ankle. The patient noticed a swelling in the thigh along with occurrence of pain. The patient was a known case of operated adenocarcinoma of sigmoid colon with metastasis involving the lungs, pancreas, axillary lymph nodes and lower-limb muscles. On examination, a subcutaneous nodule was present over the right thigh, 3 cm wide and 5 cm long, which was tender and partially fixed to muscles. Initially, pain was managed with oral pregabalin, amitriptyline and injectable non-steroidal anti-inflammatory drugs, tramadol and pentazocine. However, due to frequent complaints of abdominal pain, nausea and vomiting, interventional treatment was planned. After informed consent and with due aseptic precautions and non-invasive vital monitoring, ultrasound-guided (USG) diagnostic block of SN with 5 ml 0.25% bupivacaine with 20 mg Depo-Medrol[®] (methylprednisolone acetate) was given which immediately and completely relieved the pain below and around the knee (numeric pain score [NRS] 0/10 from initial score 9/10), but pain around the nodule was partially reduced (NRS 5/10 from 9/10). A second USG injection of similar solution given in the adductor canal (below the sartorius muscle) reduced the pain totally in the affected area (NRS 0/10). The complete pain relief lasted for 3 days and then severe pain recurred after 5 days, and PRF lesioning was planned. Again with non-invasive vital monitoring and using all aseptic precautions, skin at needle insertion site was infiltrated with 3 ml 1% lidocaine. Under

high-frequency ultrasound probe (6–13 MHz SonoSite[®] Turbo M, Fujifilm SonoSite India Pvt., Ltd. Gurugram, India) 20G radiofrequency cannula [COSMAN[®], Cosman Medical Inc., 76 Cambridge Street, Burlington, Massachusetts 01803-4140, USA] (15 cm long with 5 mm active tip) was inserted towards SN after identifying relevant sonoanatomy at mid-thigh [Figure 1a and b]. After confirmation through sensory (0.5 mv, 50 Hz) and motor (1.0 mv, 2 Hz) stimulation, PRF lesioning using an RF generator (COSMAN[®] RFG-1B) was done for 8 min [Figure 1c]. After SN lesioning, 2 ml 0.25% bupivacaine and 20 mg Depo-Medrol[®] was injected and cannula was pulled towards the adductor canal (below the Sartorius muscle and proximal to SN) [Figure 1d] and another PRF lesioning was done for 8 min and then 5 ml 0.25% bupivacaine and 20 mg Depo-Medrol[®] was injected through cannula. The patient reported immediate pain relief which is still continuing over 3 months.

In the present case, we suspected a peripheral neuropathic pain due to the metastatic nodule which was pressing the SN along with other nerves of thigh present in the adductor canal (nerve to vastus medialis and other sensory branches of femoral and obturator nerves). Therefore, only SN block was not sufficient for complete pain relief and additional adductor canal block (blocking other nerves present in the adductor canal) provided complete pain relief. In our patient, PRF was done because PRF lesioning has

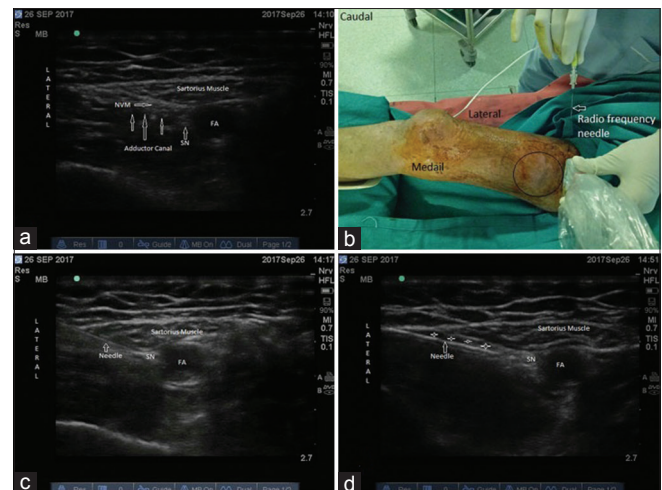


Figure 1: (a) Sonoanatomy at mid-thigh showing sartorius muscle and structures underneath, (b) radiofrequency needle being inserted towards saphenous nerve, (c) RF needle in contact with saphenous nerve for pulsed RF lesion, (d) RF needle in adductor canal for pulsed RF lesion in adductor canal. SN – Saphenous nerve; NVM – Nerve to vastus medialis; FA – Femoral artery, small stars – Adductor canal; RF – Radiofrequency

proved a successful treatment for chronic refractory pain involving the peripheral nerves.^[2,3] Moreover, it can be used safely where motor functions have to be preserved.^[2]

Pulsed radiofrequency neuromodulation of the SN has been used to treat chronic knee pain;^[4] however, pulsed radiofrequency treatment for neuropathic pain due to complex issue of compression of SNs and other nerves in the adductor canal by large metastatic nodule has not been reported earlier. Therefore, this case report provides an insight to use pulsed radiofrequency in other situations where pain is caused by nerve compression and conservative treatment is not effective.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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