Objectives. Central post-stroke pain (CPSP) refers to chronic neuropathic pain resulting from lesions of the central somatosensory nervous system. The prevalence of CPSP is 1-12% in stroke patients and symptom onset is usually within six months. Most patients complain of burning, allodynia and hyperalgesia. CPSP is typically pharmacoresistant and therapeutic options for refractory cases are limited. Spinal cord stimulation (SCS) is a minimally invasive technique that is effective in relieving peripheral neuropathic pain. A couple of recent case series have also shown some effectiveness of traditional low-frequency SCS in CPSP. We describe the first reported case of refractory CPSP treated with high-frequency SCS (HF-SCS) delivered at 10-kHz.

Methods. An 85-year-old male with a history of hypertension, pre-diabetes, and stroke presented for management of right leg pain. One year prior, he presented to the ER with new left-sided weakness. MRI of the brain showed a subacute ischemic infarct in the right lateral medulla and lacunar infarcts in bilateral basal ganglia. Following his stroke, he underwent intensive rehabilitation and had near complete resolution of left hemibody weakness. Six months ago, he began to experience new right leg pain. Workup for re-stroke was negative. Pain was constant and burning with average intensity of 8/10 on the 11-point numerical rating scale and associated with allodynia and hyperalgesia. He received no benefit from amitriptyline, physical therapy or a right lumbar sympathetic block. Given the refractoriness of symptoms, he was recommended for an HF-SCS trial.

Results. Leads were placed epidurally spanning T8-T11 vertebral bodies. Following a successful trial, the patient underwent permanent implantation. At 8-week follow up, he reported >80% relief, 2/10 average pain, and significant improvement in quality of life.

Conclusion. Based on early results from our case report, HF-SCS at 10-kHz appears to be a promising therapeutic option in patients with medically refractory CPSP.