INTRODUCTION

Approximately 180 per million people a year develop peripheral nerve injuries with the most common causes gunshot wounds (GSWs). GSWs to peripheral nerves are and often complicated by soft tissue loss, vascular injury, and infection.

We are presenting a case of a GSW to the left thigh resulting in a distal femur fracture requiring open reduction and internal fixation and an intramedullary rod complicated by post-operative weakness, numbness, and pain in the affected leg.

Imaging with computed tomography (CT) scan and electromyography (EMG) demonstrated injury to the sciatic nerve with perineural bullet fragments present. The patient underwent neurolysis of the sciatic nerve with neuro-monitoring followed by fat grafting. To date, this is the first case report of neurolysis and fat grafting to the sciatic nerve after a GSW.

RESULTS

On follow up 1.5 months after neurolysis and fat grafting, the patient reported improved left lower leg strength/function. On exam he had a well healed posterior thigh incision with no signs of infection, less plantar numbness, and improved ankle dorsiflexion.

CONCLUSIONS

Autologous fat grafting in other studies has shown a regenerative effect on scar tissue, peripheral nerve activity improvement, neuropathic pain relief, and extremity mobility in the setting of painful neuromas. A literature review shows this is the first case report of autologous fat grafting for a sciatic nerve injury with motor/sensory function improvement and reduced neuropathic pain. This case report demonstrates that fat grafting should be considered as an adjunct to neurolysis in complex peripheral nerve injuries.

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