INTRODUCTION

- Raynaud’s phenomenon (RP) involves sympathetic hyperactivity which causes vasoospasm of the digital arteries and arterioles, severely restricting blood flow.\(^1\)
- Chemical and surgical sympathetic blockade can mitigate sympathetic vasoconstriction to improve blood flow and provide relief from the pain and ischemia associated with RP.\(^{1,2,3}\)
- Surgical intervention is typically reserved for cases of RP that are refractory to pharmacological management.\(^2\)
- Patients with connective tissue disorders often have underlying vaso-occlusive pathology (external compression of vessels from contraction of surrounding tissues, vasculopathy from hyperplasia and fibrosis, vasculitis, and thrombosis) that can contribute to poor perfusion and be refractory to sympathectomy.\(^1,4\)
- Although stellate ganglion blocks (SGB) are ideal for providing profound sympathetectomy of the upper extremity, brachial plexus blocks have been studied as a viable alternative.\(^5,6\)

CASE DESCRIPTION

An 18yo female with a history of RP, mixed connective tissue disorder (MCTD), and severe peripheral vasculitis presented with a two-week flare of cold fingers accompanied by skin discoloration and worsening pain. Daily physical exams revealed rapidly progressive ischemic changes of her distal phalanges despite aggressive medical therapy.

After extensive discussion between the anesthesia pain service and plastics/hand surgery team, it was decided to perform a temporary chemical sympathectomy to determine whether the patient would be a good candidate for surgical sympathectomy. Chemical sympathectomy was achieved under MAC with an U/S-guided supraclavicular block using 15ml of 0.25% bupivacaine and dexamethasone 6mg. Successful block placement was confirmed by 1.3˚C increase in skin temperature and appropriate upper extremity weakness.

DISCUSSION

The supraclavicular brachial plexus block provided an adequate upper extremity sympathectomy.
- Block was confirmed by appropriate upper extremity weakness, increased peripheral cutaneous temperature, and return of patient’s ability to use iPad touchscreen.
- Results suggest that the patient had a significant sympathetically-mediated component to her disease, particularly important in the setting of an MCTD that likely contributed to the patient’s vascular compromise.\(^4,5\)

Stellate ganglion block is traditionally the ideal block to induce a chemical sympathectomy of the upper extremity.
- However, it is difficult to evaluate successful placement in patients that may fail to respond to chemical sympathectomy because SGB does not induce a motor block.
- SGB has its own set of serious risks such as inadvertent intrathecal block and epidural injection.
- Performance of SGB requires fluoroscopic guidance with additional equipment and trained personnel.

This case illustrates a novel indication for supraclavicular block as a diagnostic and therapeutic tool prior to surgical sympathectomy.

REFERENCES