

Introduction

Mitochondrial myopathies are a group of neuromuscular diseases caused by defects in the mitochondria. Patients often present with muscle weakness, exercise intolerance, and multi-systemic involvement. Pain management in these patients requires careful consideration due to potential complications from their underlying metabolic condition. The suprascapular nerve block is a technique used for shoulder pain relief, which can be beneficial in certain clinical scenarios. This report discusses a case of a 45-year-old male with mitochondrial myopathy who underwent a suprascapular nerve block for chronic shoulder pain.

Case Presentation

A 45 year old male with a past medical history of mitochondrial myopathy confirmed by biopsy and genetic testing presented with a 2-year history of right shoulder pain, exacerbated by movement and resistant to oral analgesics. His medical history was significant for mitochondrial myopathy, diagnosed 10 years prior, with symptoms of muscle weakness, fatigue, and occasional muscle cramps. There was no history of trauma or previous shoulder surgery. On physical examination, inspection revealed atrophy of the right supraspinatus and infraspinatus muscles, with tenderness to palpation over the suprascapular fossa. Range of motion was limited in active and passive abduction and external rotation. Manual Muscle testing revealed 3+/5 strength for right shoulder abduction. There were no sensory deficits and reflexes were +2 for brachioradialis and triceps bilaterally.

Patient underwent an MRI of the right shoulder which showed chronic tendinopathy of the supraspinatus and infraspinatus muscles with no rotator cuff tear.

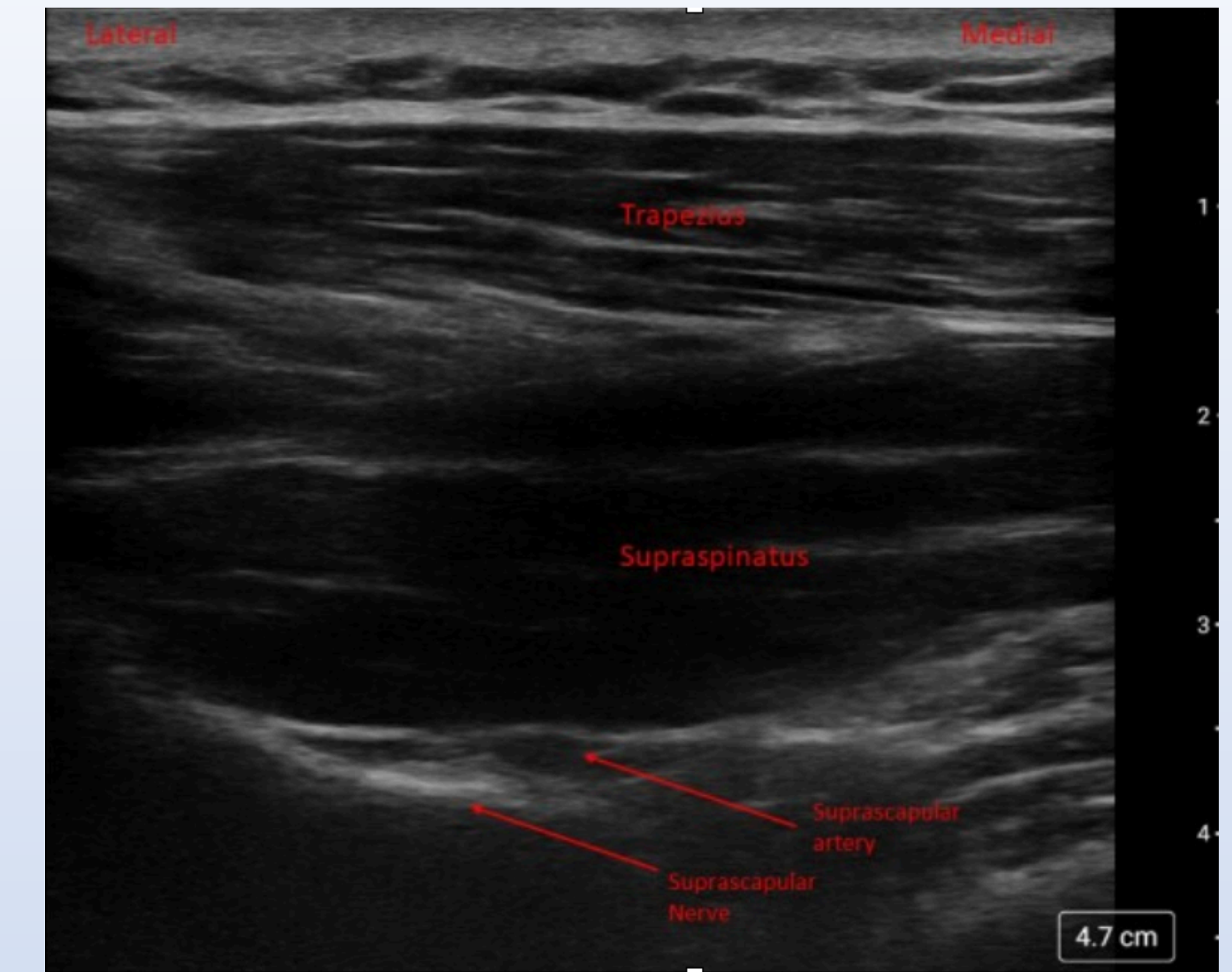
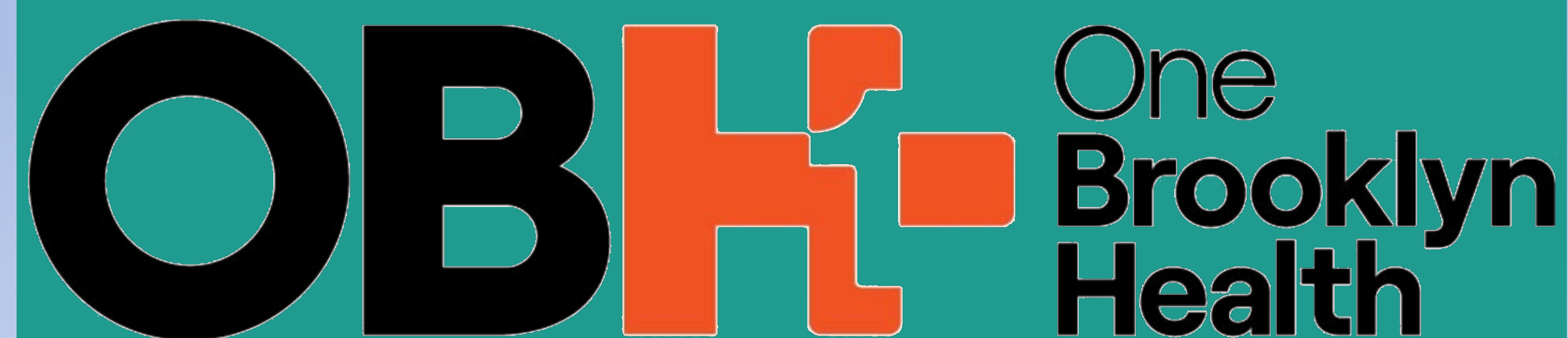
Electromyography studies showed decreased motor unit recruitment and abnormal spontaneous activity, such as fibrillations and positive sharp waves, in the supraspinatus and infraspinatus muscles, consistent with chronic denervation and myopathy. Nerve conduction velocity studies revealed normal sensory and motor nerve conduction velocities, with no evidence of peripheral neuropathy. The findings were consistent with a localized muscle involvement rather than a diffuse peripheral nerve disorder.

Given the refractory nature of his shoulder pain and the underlying mitochondrial myopathy, a decision was made to perform a suprascapular nerve block. The patient was counseled regarding the procedure, benefits, and potential risks. Informed consent was obtained. The patient was positioned in the sitting position. Under ultrasound guidance, a 22-gauge needle was advanced towards the suprascapular notch. Once the needle was in place, 10 ml of 0.5% bupivacaine was injected around the suprascapular nerve. The patient reported significant pain relief within 15 minutes post-procedure. At 1 month follow-up, the patient reported sustained pain relief and improved shoulder function. There were no complications related to the nerve block.

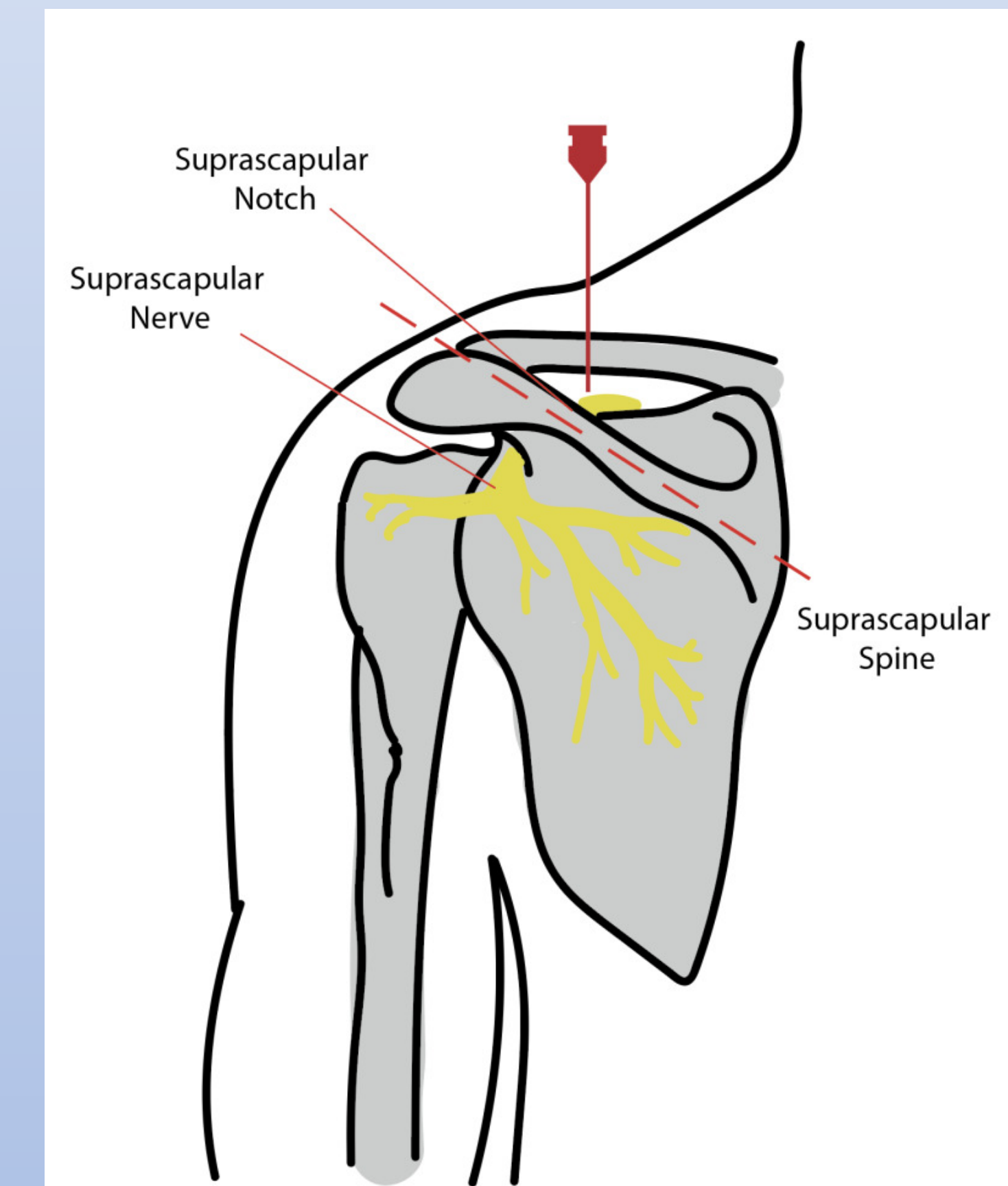


CASE REPORT: SUPRASCAPULAR NERVE BLOCK IN A PATIENT WITH MITOCHONDRIAL MYOPATHY

Amalraj Siva M.D. PGY -3
Charlene Canales D.O. PGY-2
Daniel Sanchez M.D. PGY-2
Michael Sposito M.D. PGY-2



High frequency ultrasound view of the posterior approach to the suprascapular nerve



Discussion

Pain management in patients with mitochondrial myopathy is complex due to their unique metabolic requirements and potential for increased sensitivity to medications. The suprascapular nerve block provided effective pain relief without systemic side effects, making it a valuable option in this patient population.

The success of the nerve block in this case underscores the importance of tailored pain management strategies in patients with mitochondrial myopathy. Ultrasound guidance was crucial in minimizing the risk of complications and ensuring accurate delivery of the anesthetic.