Multimodal Interventional Management of Refractory Abdominal Wall Spasticity in Adrenomyeloneuropathy

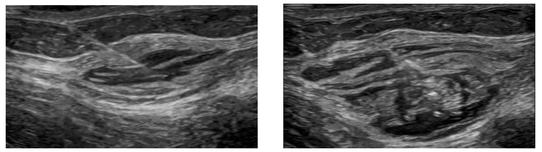
Deema Martini MD, Arya Bekhradi MD
Northwestern University Feinberg School of Medicine - Chicago, IL

INTRODUCTION

- Adrenoleukodystrophy (ALD) is a rare x-linked disorder caused by mutations in the ABCD1 gene that result in progressive neurologic and endocrine dysfunction due to toxic accumulation of very long-chain fatty acids[1]
- Adrenomyeloneuropathy (AMN), a common adulthood manifestation, is characterized by progressive lower extremity spasticity, neuropathic pain, gait impairment, and bowel and bladder dysfunction
- Nonspecific gastrointestinal symptoms including chronic abdominal pain, constipation, nausea, and weight loss may occur as a result of adrenal gland involvement[2]
- Management requires multidisciplinary care and is largely supportive and limited, often with oral antispasmodics and chronic pain medications[3]

MATERIALS & METHOD

- We describe a case in which abdominal pain and spasticity in a patient with AMN is treated with abdominal wall botox and transversus abdominis plane (TAP) blocks
- Informed consent for publication of this case was obtained from the patient



Ultrasound-guided TAP block procedure: A 25 gauge, 3.5 inch needle was advanced in plane with the ultrasound probe and passed through the external and internal oblique fascial planes. Approximately 15 ml of 0.25% bupivicaine with 40 mg methylprednisolone was incrementally injected in the transversus abdominis plane (as seen in the above images).

Patient Presentation:

65 year-old man with AMN, heart failure with reduced ejection fraction, type 2 diabetes mellitus, schizophrenia, bipolar disorder, degenerative disc disease, and obesity presented with chronic abdominal stiffness, pain, and spasticity in addition to bilateral lower extremity spasticity

Baclofen 20 mg TID caused moderate improvement in lower extremity symptoms, however abdominal symptoms continued and were debilitating

→ Patient demonstrated limited ability to care for any medical implant due to medical history and schizophrenia (e.g., spinal cord stimulator or intrathecal baclofen pump)

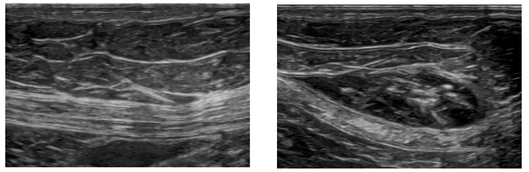
Ultrasound guided TAP blocks bilaterally resulting in >50% improvement for 2 weeks

→ Subsequent US-guided chemodenervation with 200 units of botulinum toxin

75% sustained improvement in abdominal pain and stiffness, resulting in significantly improved mobility and overall quality of life

→ Multimodal treatment regimen is ongoing, with each treatment being offered every 3 months





Ultrasound-guided botulinum toxin placement: Using sterile technique, a 22 gauge, 2.5 inch needle was introduced into each muscle. A total of 200 units of botulinum toxin was injected into the internal oblique (6 sites in total/3 sites per side) and external oblique (6 sites in total/3 sites per side) muscles (as seen in the above images).

CLINICAL OUTCOMES

>50%	~75%	>10 mo
pain relief with b/l TAP blocks	sustained improvement with botulinum toxin	ongoing treatment with benefit

DISCUSSION

- Literature on pain management in AMN remains limited
- Some literature describe successful use of intrathecal baclofen pumps for refractory spasticity and spinal cord stimulation for chronic neuropathic pain[4,5]
- To our knowledge, this is the first reported case describing combined ultrasound-guided abdominal wall botulinum toxin injections and TAP blocks for management of refractory abdominal wall spasticity in AMN
- This case highlights the important role of interventional pain within multidisciplinary care
- We demonstrate a multimodal interventional approach to offer meaningful relief and functional improvement for patients who otherwise do not qualify for a medical implant

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