RESPIRATORY FAILURE LATE IN THE COURSE OF IMMUNE MEDIATED MYOPATHY

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HISTORY

- A 59-year-old, (L)-handed man first noticed muscle weakness 1 year before initial evaluation. This came on in the proximal arms and legs. He noticed that he had a hard time lifting bags full of groceries or going up the steps and had trouble standing up from a seated position. His muscles felt stiff, and he had burning in his anterior thighs. He felt that the muscles were sore, but there was no cramping.
- PAST MEDICAL HISTORY: Positive for diabetes diagnosed about 2-3 years before initial presentation. He also had hypertension and hypercholesterolemia.
- CURRENT MEDICATIONS: METFORMIN, ETODOLAC, LOTREL. He was on SIMVASTATIN, but stopped that about a year prior to presentation, and there was no change in any of his symptoms or function.

- Examination revealed mild proximal weakness in the arms (4+ deltoids and biceps) and moderate in the legs (3+-4- iliopsoas, adductors) with normal strength distally. Sensory was normal. Reflexes were 1 throughout with downgoing toes.

LABORATORY EVALUATION

- CPK was 9500.
- Right deltoid biopsy revealed myofiber necrosis and myophagocytosis without significant inflammation.

TREATMENT

- Prednisone up to 80 mg daily was given for several months with slight initial improvement and CPK decreased
- Methotrexate added with no change and LFTs elevated (including GGT)
- Patient demanded prednisone be tapered due to side-effects

TREATMENT

- Due to the presence of ptosis that seemed to fatigue,the possibility of myasthenia gravis was raised but AChR Ab was negative; no response to pyridostigmine
- IVIg added with no change in ocular manifestations but slight improvement of weakness that persisted with lowering IVIg dose and then worsened with stopping
- CPK decreased

TREATMENT

- Rituximab ordered 1000 mg daily x 2 doses 1 month apart
- The patient had a severe adverse reaction with hives, urine turning orange, very severe generalized weakness
- He did not seek medical attention or call regarding this reaction and stayed at home drinking large quantities of water

TREATMENT

- Maintenance IVIg was continued for more than a year with slight improvement and then stabilization but difficulty with venous access caused the patient to elect to stop therapy
- There was worsening of function in connection with marked elevation of CPK to >25,000
- The patient began requiring a cane and then a walker to ambulate
- Re-institution of IVIg after port placement stabilized his condition and led to slight improvement

TREATMENT

- After a subsequent discontinuation he again deteriorated to being wheelchair bound and unable to lift his arms overhead
- In spite of re-starting IVIg once again he did not improve and began to notice orthopnea 8 years into the disease course

DISEASE COURSE

- A few months later a PFT revealed FVC of 30% and at his next follow-up visit he was somnolent, confused and had asterixis and was noted to be using accessory muscles of respiration
- ABG revealed a pCO_2 of 127 with normal O_2 and pH 7.20
- He was admitted to the hospital and placed on BiPAP with gradual improvement of pCO_2 to 68 and the patient becoming lucid at which time he elected hospice care and died later the same day

RESPIRATORY FAILURE IN IMMUNE MEDIATED NECROTIZING MYOPATHY

- Two prior case reports
  - 70 yo with very acute onset and minimal response to treatment with IVIg, IV methylprednisolone, and rituximab with death within three months of onset and positive HMGCR antibodies[1]
  - 48 yo history of breast cancer with respiratory failure as presenting sign with elevated pCO2, and proximal arm and leg weakness. Biopsy with some myonecrosis, MHC staining and MAC but CPK only in the 800's. Excellent response to IV dexamethasone[2]
  - Respiratory insufficiency reported in 8 of 68 SRP positive IMNM patients but 0/45 with HMGCR antibodies in one series[3]

- 1. Sweidan AJ, Leung A, Kaiser CJ, Strube SJ, Dokukin AN, Romansky S, Farjami S. A Case of Statin-Associated Autoimmune Myopathy. Clin Med Insights Case Rep. 2017 Mar 30;10
- 2. Jaeger B, de Visser M, Aronica E, van der Kooi AJ. Respiratory failure as presenting symptom of necrotizing autoimmune myopathy with anti-melanoma differentiation-associated gene 5 antibodies. Neuromuscul Disord. 2015 Jun;25(6):457-60.
- 3. Watanabe Y, Uruha A, Suzuki S, Nakahara J, Hamanaka K, Takayama K, Suzuki N, Nishino I. Clinical features and prognosis in anti-SRP and anti-HMGCR necrotising myopathy. J Neurol Neurosurg Psychiatry. 2016 Oct;87(10):1038-44. doi: 10.1136/jnnp-2016-313166. Epub 2016 May 4.