

# Rare case of overlap of myositis and myasthenia gravis

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## Background

Myositis and myasthenia gravis (MG) are both autoimmune disorders presenting with muscle weakness. So far, only fewer than 50 cases of co-existence of myositis and myasthenia gravis are reported in literature either as isolated cases or in case series.<sup>1,2</sup> We report a rare case of overlap syndrome of myositis with myasthenia gravis.

## Case presentation

We report a case of a 67-year-old woman with breast cancer and thymectomy, who was referred to rheumatology with pain in thighs and biceps after being started on aromatase inhibitor therapy that continued on after stopping this therapy. There was no proximal muscle weakness or tenderness. Impression of polymyalgia was made on initial review. Her blood tests showed elevated serum levels of creatinine kinase. Extended myositis spectrum antibody screen showed positive antinuclear antibodies and transcription intermediary factor 1-gamma antibodies. Magnetic resonance imaging indicated pelvic girdle and thigh muscle myositis. Electromyography didn't show any evidence of neuropathy. Muscle biopsy was consistent with necrotising myopathy. Computed tomography was performed to rule out active cancer. It was unclear whether inflammatory changes on biopsy are paraneoplastic in context of previous thymoma, so a conservative expectant approach was suggested. After a stable course of reducing creatine kinase levels and no muscle power deterioration for 3 years, the patient started deteriorating over 1 month and she developed proximal muscle weakness to that extent where she was unable to walk without support associated with bilateral ptosis and difficulty in swallowing towards the end of her meals. Clinical possibilities of myositis flare up and new onset of myasthenia was considered and acetylcholine receptor antibody test was sent. She rapidly deteriorated in the next 24 hours, developed bilateral ptosis, breathing difficulty and profound weakness of neck and proximal muscles while she was on steroids. She was admitted to the hospital where she underwent treatment with intravenous immunoglobulins, pyridostigmine and a high dose of steroids. Acetylcholine receptor antibody was reported high 7 days later. She improved rapidly within 1 week. Her dyspnoea and muscle weakness improved. She was discharged with a plan

to continue escalating steroids till she made a full recovery or hit 90 mg (1.5 mg/kg) on alternate days and to stay on it for 2 weeks, and then to start reduction of prednisolone at the rate of 5 mg per 5th dose unless the symptoms recur where she should revert back to last dose or reduce until hits on 15 mg on alternate days.

## Conclusion

This case illustrates need to consider myasthenia when a patient with inflammatory myositis deteriorates despite being on steroids. ■

## References

- 1 Garibaldi M, Fionda L, Vanoli F *et al.* Muscle involvement in myasthenia gravis: Expanding the clinical spectrum of Myasthenia-Myositis association from a large cohort of patients. *Autoimmun Rev* 2020;19:102498.
- 2 Huang K, Shojania K, Chapman K *et al.* Concurrent inflammatory myopathy and myasthenia gravis with or without thymic pathology: A case series and literature review. *Semin Arthritis Rheum* 2019;48:745–51.

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