Answer: Ocular myasthenia gravis and an ‘ice pack test’, a two minute application of ice (wrapped in a clean towel or other protective covering) to the affected levator muscle. Myasthenia gravis (MG) is an acquired autoimmune disease caused by antibodies to the acetylcholine receptors at the neuromuscular junction of skeletal muscle. The resultant defect in neuromuscular transmission causes muscle fatiguability and weakness. Weakness may localise purely to eye muscles termed ocular myasthenia or may affect other skeletal muscle termed generalised MG. About 50 to 70% of ocular myasthenia will eventually develop generalised MG.

By cooling of the affected muscles, neuromuscular blockage is decreased. ¹ Hypothetically, at a cooler body temperature, MG patients can exercise longer or at a higher intensity before the onset of fatigue or weakness. Application of an ice pack to the affected eyelid has been shown to be both sensitive and specific in a number of small studies. ²,³ This test has not been confirmed to be helpful in diagnosis of ocular myasthenia in patients with extra-ocular muscle weakness (diplopia). ²,⁴

It is prudent to bear in mind that confirming the diagnosis of ocular myasthenia is often difficult. Careful interpretations of results of investigations is vital to establish a firm diagnosis as treatment may involve thymectomy or long-term immunosuppressants.

Edrophonium challenge test should only be carried out when there is a clear abnormality and is only deemed positive if the abnormality objectively improves with administering edrophonium in a double blind fashion. An experienced tester must be present. The test can only be performed with continuous cardiac monitoring and resuscitation facilities immediately available, provided there are no contra-indications such as asthma, cardiac conduction defect, etc.

Tests such as repetitive nerve stimulation, single fibre electromyography (EMG), and assays for acetylcholine receptor antibodies are less sensitive in ocular myasthenia compared to generalised MG. Assays for antibodies to acetylcholine receptor antibodies should be performed but these may be negative in about 15% of patients with generalised myasthenia gravis and 50% of patients with ocular myasthenia gravis. Furthermore, response to symptomatic treatment with acetylcholinesterase inhibitors may be equivocal.

Computed tomography of the thorax should be performed to look for the presence of thymic hyperplasia or thymoma which may be locally invasive.

REFERENCES