Myasthenia gravis: diagnosis delayed or missed

Frequently mistaken for more common conditions, myasthenia gravis is an autoimmune disease of neuromuscular function. Exhausting the muscular system, it fluctuates in severity while not disturbing the sensory processes or leading to atrophy. **Drs Jonathan P Sherlock, John C McGourty** and **Jeremy Brown** furnish two case reports charting the difficulty in diagnosis and the treatment options.

DR JONATHAN P SHERLOCK is a senior house officer in medicine, **DR JOHN C MCGOURTY** a consultant physician and **DR JEREMY BROWN** a consultant neurologist at the Queen Elizabeth Hospital, King's Lynn

Swallowing problems are common in older people[1]. Thirty percent of elderly people acutely admitted to hospital suffer from dysphagia[2]. There are many causes ranging from the simple ageing process (presbyphagia) to malignancy and neurological disease. As dysphagia is debilitating, can be life threatening and is often amenable to treatment, accurate diagnosis is essential. We report two cases recently presenting to our department with dysphagia and in whom there had been a significant delay in arriving at the correct diagnosis of myasthenia gravis.

Case 1 *(used with permission)*

An 88-year-old man with a known oesophageal pouch and hiatius hernia was referred for endoscopy in 2003 with several months of increasing dysphagia and weight loss. The endoscopy was normal, but a subsequent barium swallow study showed a large pouch — which had not changed from 2000 — a sliding hiatius hernia, a tortuous oesophagus and tertiary contractions. His symptoms of dysphagia and regurgitation continued, and were thought to be related to the oesophageal pouch. He was assessed by an ENT (ear, nose and throat) consultant and subsequently underwent a stapling procedure in May 2004. There was initially some improvement in his symptoms, although he continued to have difficulty swallowing fluids. On ENT review in October 2004 he complained that his speech had now also become slurred and monotonous. He was referred to the medical department where his main complaints were coughing and choking after food and drink, nasal regurgitation and at times unintelligible speech. On examination he had a Parkinsonian tremor, slight right ptosis without fatigue, weak eye closure, dysarthric speech, weak cough and mild truncal weakness. Investigations undertaken included acetylcholine receptor antibodies, which were raised at 86(NR 0–5). Electromyogram (EMG) showed increased 'jitter', in keeping with a diagnosis of myasthenia gravis. A CT scan of his chest was normal. He was treated with pyridostigmine and increasing doses of prednisolone with resolution of his symptoms. He has recently started therapy for his coincidental Parkinson's disease.

Case 2 *(used with permission)*

An 83-year-old lady was referred under the 'two week rule' in October 2004 for dysphagia. Endoscopy was normal, and a barium swallow study in November noted reduced peristalsis. Her symptoms continued to worsen, but when re-referred to the gastroenterology clinic no diagnosis was made. In January 2005, she also began to complain of diplopia; ophthamological assessment in May was inconclusive. In June her swallowing difficulty had become so extreme that she was referred by her GP for emergency admission. At presentation she was found to have bilateral ptosis,

Key points

- Thirty per cent of elderly people acutely admitted to hospital suffer from dysphagia.
- Serological studies demonstrate that myasthenia gravis in older people is much more common than previously thought.
- Myasthenia gravis in the elderly can present atypically with dysphagia,
- The diagnosis is easily confirmed by serology if suspected, and treatment results in good recovery.

reduced down gaze, shortness of breath, slurred speech, reduced cough reflex, inability to swallow, weak neck flexion and proximal muscle weakness. Swallowing assessment showed reduced oral transit time, and decrease in strength of swallow with time. Myasthenia gravis was diagnosed, and pyridostigmine was administered via nasogastric tube. She regained normal function within 10 days on pyridostigmine 30mg three times a day and prednisolone was started. Subsequently anti-acetylcholine receptor antibody assay came back raised at 91, and CT chest showed no thymoma. On follow-up her myasthenic symptoms remain well controlled.

Discussion

Myasthenia gravis (MG) is a readily treatable cause of dysphagia, and untreated has a high morbidity and mortality. Traditionally, it has been considered a disease of the young and middle-aged, but it is increasingly recognised to be undiagnosed in later life[3-6]. Recent UK population studies have reported an overall annual incidence of between 1.1 and 1.8/100,000, but rising to 9.9/100,000 in elderly males[5] and prevalence rates of 15/100,000 rising to 63/100,000 in the over-80s[7]. It had previously been suggested that the incidence of myasthenia drops off in later life, but it appears this is due to under diagnosis and less frequent antibody requesting in older patients. Routine sampling of blood from individuals in the Oxford healthy ageing project found an incidence of positive anti-acetylcholine receptor antibodies of 1/853 in those aged 60–74 and 8/1147 in the over 75s[4]. Interestingly, only one of these eight people had a clinical diagnosis of MG, but four had diagnoses of stroke or transient ischemic attack (TIA), supporting the hypothesis that MG is frequently mistaken for other more common conditions. This is particularly likely in older patients, because the major clinical features may be mainly limited to the bulbar muscles[8]. The other factor making diagnosis more difficult in the elderly is the frequent co-existence of other conditions. The first case clearly illustrates this, as this patient had both a pharyngeal pouch and early Parkinson's disease, with the less common diagnosis of MG not being initially considered.

With the ageing of the population and, given that MG can be treated satisfactorily albeit with a risk of side effects, it would seem timely to heighten clinicians' awareness of the occurrence of MG in later life. Delay in diagnosis unnecessarily places patients at risk of complications, and results in significant morbidity and cost. As these cases demonstrate, even in the very old, treatment is effective and allows patients to maintain a normal lifestyle.

Conflict of interest: none declared.

References

1. Leslie P, Carding PN, Wilson JA. Investigation and management of chronic dysphagia. *BMJ* 2003; Feb 22;**326**(7386):433-6
2. Lee A, Sitoh YY, Lieu PK *et al*. Swallowing impairment and feeding dependency in the hospitalised elderly. *Ann Acad Med Singapore* 1999; May; **28**(3):371-6.
3. Thanvi BR, Lo TC. Update on myasthenia gravis. *Postgrad Med J* 2004 Dec;**80**(950):690-700
4. Vincent A, Clover L, Buckley C, *et al*. Evidence of underdiagnosis of myasthenia gravis in older people. *J Neurol Neurosurg Psychiatry* 2003 Aug; **74**(8):1105-8
5. Schon F, Drayson M, Thompson RA. Myasthenia gravis and elderly people. *Age Ageing* 1996 Jan;**25**(1):56-8
6. MacDonald BK, Cockerell OC, Sander JW, Shorvon SD. The incidence and lifetime prevalence of neurological disorders in a prospective community-based study in the UK. *Brain* 2000; **123**:665-76
7. Robertson NP, Deans J, Compston DA. Myasthenia gravis: a population based epidemiological study in Cambridgeshire, England. *J Neurol Neurosurg Psychiatry* 1998 Oct;**65**(4):492-6
8. Kluin KJ, Bromberg MB, Feldman EL, Simmons Z. Dysphagia in elderly men with myasthenia gravis. *J Neurol Sci* 1996 Jun;**138**(1-2):49-52