Have I had a stroke?

PAT J. PHILLIPS MB BS, MA, FRACP

This series is aimed at helping the busy GP diagnose and manage patients with diabetes and its complications. When managing this patient, what issues would you consider?

Case history

Dean, aged 67 years, presents with facial weakness saying, 'Have I had a stroke? I woke up this morning like this.' He and his wife Sarah are worried. He is certainly at high risk of a stroke, having had hypertension for 24 years, type 2 diabetes for 18 years and a myocardial infarct last year. He stopped smoking 10 years ago. After his infarct he lost 3 kg, although at 94 kg and with a height of 1.8 m (BMI, 29 kg/m^2) he is still overweight. (A rough guide to a healthy weight is given by subtracting 100 from the height in centimetres. Dean's height indicates his healthy weight would be around 80 kg.)

Dean's hypertension and diabetes are moderately controlled: blood pressure is 135 to 150 mmHg systolic and 70 to 80 mmHg diastolic and HbA_{1C} 7 to 9% (the ideal HbA_{1C} is below 7%). His cardiovascular medications are enalapril 10 mg twice daily, bendrofluazide 5 mg a day and atenolol 25mg twice daily, started after his infarct. His oral hypoglycaemics are metformin 500 mg tablets, two at breakfast, one at lunch and two with the evening meal, and gliclazide 80 mg tablets, two in the morning and two in the evening. He also takes diclofenac 50 mg twice daily most days for arthritis.

Examination confirms the facial weakness with sagging of the right half of his face, consistent with a seventh cranial nerve (facial nerve) disorder. Eye movements and other cranial nerve and neurological examinations are normal.

Dr Phillips is Senior Director, Endocrinology, North Western Adelaide Health Service, The Queen Elizabeth Hospital, Woodville, SA.

What should you consider?

- What caused the problem affecting Dean's face?
- What is the natural history?
- What interventions should be considered?
- What medication changes should be considered?

What caused the problem?

Dean's forehead muscles are affected as well as those of the lower face, making it likely that this is a lower rather than an upper motor neuron lesion. It is therefore likely that he has Bell's palsy (a seventh cranial nerve syndrome) and that he has not had a stroke (Figure).

Bell's palsy is known to be associated with diabetes among other conditions, and it is likely that diabetes is the cause in this patient. However, he should still be examined for vesicles on the external ear (indicating zoster) and masses in the parotid. While the usual cause of Bell's palsy is thought to be re-activation of a neurotropic virus (generally herpes simplex), in diabetes the palsy may be one of the cranial mononeuropathies that occur, although the third, fourth and sixth cranial nerves (the ocular nerves) are more commonly affected.

What is the natural history?

Assuming this is a diabetic cranial mononeuropathy, it will get better as the ischaemic nerve regenerates. Interestingly, glycaemic control has little effect on the natural history of Bell's palsy, unlike most of the other neuropathies where hyperglycaemia worsens the clinical picture both acutely and chronically.

DR P. MARAZZI, SCIENCE PHOTO LIBRARY

Figure. A lower motor neuron facial nerve lesion in a smiling patient (not the case patient). Note that in a lower motor neuron lesion the palsy is not ameliorated by emotion-induced movement, as opposed to in an upper motor neuron lesion.

In a palsy caused by viral re-activation, the prognosis depends on the severity, and more than 90% of those with mild or moderate weakness are likely to recover completely.

In Dean's case, the paralysis is more severe and he may not recover normal function.

What interventions should be considered?

The first intervention should be eye protection if eyelid closure is incomplete. Artificial tears, creams, protective glasses and night patches may be necessary. Rarely, tarsorrhaphy may be required.

The use of corticosteroids and/or antiviral agents is controversial. In Dean's case, corticosteroids would destabilise his diabetes. Similarly the place of nerve stimulation and decompressive surgery

(except early in those with severe dysfunction) is unclear. Analgesics may be used to relieve pain.

A speech therapist may be able to recommend food preparation techniques and ways of eating if Dean finds this difficult because of incomplete mouth closure.

What medication changes should be considered?

Simplify Dean's medication

Enalapril and bendrofluazide could be replaced by a combined ACE inhibitor–thiazide combination (Accuretic, Monoplus, Renitec Plus 20/6). Atenolol, 50 mg, could be taken once a day. Switching to 1000 mg or 850 mg metformin tablets twice daily would reduce the number of tablets and medication taking occasions (the dose may need reducing if renal function is impaired). Gliclazide in a slow release formulation (Diamicron MR) could be used.

Increase cardiovascular protection

Stopping the NSAID should be considered because it may be antagonising Dean's hypotensive medications and having adverse gastrointestinal and renal effects. Low dose aspirin should probably be started. A statin could be added if Dean satisfies the PBS criteria (or can afford a private script).

Consider a Home Medicines Review

Dean is taking six different medications and 16 tablets a day, and several of these medications have potentially dangerous side effects or interactions. He may also be taking over-the-counter medications, herbal remedies or nutrient supplements that may have adverse effects or interactions. A Home Medicines Review, accomplished through a team approach involving Dean, his preferred community pharmacist and you as his GP , would help maximise the benefit from his medication schedule.

Summary

- Upper motor neuron facial nerve disorders, such as occurs in stroke, cause contralateral face weakness sparing the forehead whereas lower motor neuron lesions typically cause weakness involving the whole ipsilateral face.
- Patients with diabetes are more likely to develop Bell's palsy than the general population.
- Cranial mononeuropathies in people with diabetes usually involve the ocular nerves but may involve the facial nerve.
- Normal function should return as the ischaemic facial nerve regenerates. Symptoms involving the eye should be treated (with medications and protective glasses or patches) to prevent permanent damage. Analgesics can be used to relieve pain. MT

DECLARATION OF INTEREST: Dr Phillips has received grants and acted as consultant for a number of pharmaceutical companies; none of these interests are relevant to this article.