A 42 year old man presented with a three month history of diabetes and hypertension. Over the past six months, he had a backache and increased skin pigmentation. On examination, there was increased pigmentation of the face, neck, and hands. The rest of the physical examination was normal, except for proximal muscle weakness of the lower limbs. The 24 hour urinary free cortisol was 4533 nmol (normal range 99–378 nmol/day). Serum cortisol concentration after a 1 mg dexamethasone suppression test was 618 nmol/l. After a high dose dexamethasone suppression test, the serum cortisol was 556 nmol/l. The rest of the pituitary functions were normal. The midnight cortisol concentration was 737 nmol/l and a concomitant ACTH measurement was 32.5 pmol/l. Serum potassium was 1.7 mmol/l; otherwise electrolytes and renal function tests were normal. Magnetic resonance imaging of the pituitary was carried out and computed tomograms of the chest and the adrenal are shown in figure 1 and figure 2.

**QUESTIONS**

1. Discuss the radiological findings. What is the probable diagnosis?
2. Which is the best test to confirm the diagnosis?
3. How would you manage this patient?

**Answers on p 140.**