may be different from other thyroid diseases, in that males are more strongly predisposed than females.

Our study may underestimate the incidence of thyroid dysfunction, since no thyroid function tests were available for 59 individuals. It is possible (although intuitively improbable) that the apparent excess of AAT among men could be caused by selective failure to detect biochemical thyrotoxicosis among the women rather than the men who did not have thyroid function tests recorded. The prevalence of AAT in our population lies within the range of previously reported estimates, but significant underestimation of the overall level of thyrotoxicosis cannot be excluded. The high prevalence of thyroid dysfunction identified argues for rigorous adherence to the recommendation of 6-monthly thyroid function testing in such patients. General practitioners and cardiologists need to establish robust programmes of regular thyroid function screening in users of amiodarone.

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References
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Severe back pain, depression and psycho-organic syndrome
Sir,
Altered mental activity is a common symptom of hypopituitarism. The most frequent causes of acquired hypopituitarism are pituitary tumors, empty sella, infiltrative or vascular disorders or cranial radiation therapy. We describe a patient with a classical clinical presentation and laboratory findings for a hypopituitarism, but with an extremely rare aetiology.

A 69-year-old woman was referred to the clinic in May 2000 because of progressive debilitation, depression and psycho-organic syndrome. In May 1999, a peridural catheter was placed for continuous administration of morphine (2.5 mg/day) to relieve long-lasting, severe lumbo-vertebral pain of degenerative origin. Since the autumn of 1999, the patient had fallen into a progressive condition of generalized tiredness, inactivity, depression,

Figure 1. Patient in May (above) and November (below). Reproduced with the patient’s permission.
and mental confusion. On examination, she was debilitated and disoriented, with phases of hallucinations. Cardiopulmonary examination was unremarkable. Neurologically, there was no focal deficit, but deep tendon reflexes were delayed. A fine, pale skin and a loss of the outer third of eyebrows were noted (Figure 1). The diagnosis at admittance was psycho-organic syndrome and major depression.

Blood chemistry and haematology were normal. Lumbar puncture showed a normal pressure; examination of the clear fluid revealed normal chemistry and no micro-organisms. Serum levels of free $T_4$ (4.6 pmol/l, normal 9–23 pmol/l), total $T_3$ (0.6 nmol/l, normal 1.2–2.6 nmol/l), and of morning (0800 h) cortisol (116 nmol/l, normal 170–800 nmol/l) were low; cortisol increased to 543 nmol/l 30 min after intravenous injection of 250 µg corticotropin. Basal levels of TSH and ACTH were 0.42 mU/l and 5.1 pmol/l, respectively, and gonadotropins were also low, despite the patient’s postmenopausal condition. Insulin-like growth factor I (9 nmol/l, normal 16–60 nmol/l) was also decreased, consistent with growth hormone deficiency and hypopituitarism. The patient was treated with cortisol acetate (37.5 mg/day) and, a few days later, thyroxine was added (first 0.05, then 0.1 mg daily). To search for the aetiology of the pituitary failure (in adulthood, most commonly caused by pituitary adenomas), MRI examination of the brain and the sellar region was performed. However, the pituitary gland was normal-sized, without any morphological changes. There were also no signs of malignant, infectious or granulomatous diseases.

The association of neuropsychiatric symptoms and hypopituitarism is well known. Glucocorticoid and thyroid hormone replacement therapy resulted in a marked improvement of the patient’s condition: the debilitation and psycho-organic syndrome disappeared, and the patient’s physical appearance and activity clearly improved within 6 months (Figure 1).

Meanwhile, we realised that the unusual feature of our case was the rare aetiology of the pituitary failure. Initial and ongoing efforts to identify a cause listed in the differential diagnosis of hypopituitarism in classical textbooks and review articles remained unsuccessful, and a presumptive diagnosis of hypophysitis was considered, although no additional arguments in favour of such a hypothesis could be found. An important clue came from the patient’s history with long-term intrathecal morphine therapy. Continuous intrathecal morphine is an effective therapy for the management of severe non-malignant pain. Such treatment is usually considered safe but can, apart from producing analgesia, depress ventilation. Moreover, the continuous presence of morphine in the intrathecal space may also have profound effects on pituitary function, particularly on the gonadal, but also on the adrenal and GH axis, as recently reported by Abs et al. Even though cause and effect cannot be proven in the case of our patient, it may be the first reported association of prolonged intrathecal morphine administration and complete anterior pituitary failure with a classical syndrome and resolution after hormone-replacement therapy.

It is therefore important to check pituitary function in patients treated with long-term intrathecal morphine.

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