0200-0300. Sleep related vehicle accidents are more common in the mid-afternoon compared with the rest of the normal waking day. Male drivers under 30 years are the main victims of these accidents. Death or serious injury to drivers may well be greater than for the "average" accident. Sleep related vehicle accidents comprise about 16-23% of road accidents, the higher proportion being relevant for motorways. Because of the profound influence of the circadian rhythm of sleepiness on sleep related vehicle accidents, they can occur after even a short period of driving. These conclusions are borne out by those from other countries.¹⁻⁵ A recent report from the United States concludes that in addition to the human suffering caused by sleep related vehicle accidents there are considerable financial costs.¹¹ More public awareness needs to be drawn to the dangers of driving while sleepy.¹²

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Sarcoidosis presenting after resection of an adrenocortical adenoma

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Patients with Cushing's syndrome have grossly raised concentrations of circulating corticosteroids. Treatment may result in unmasking of steroid dependent conditions. We report a case of sarcoidosis presenting after resection of an adrenocortical adenoma.

Case report

A 42 year old white woman presented in 1993 with a six year history of weight gain (30 kg), depression, amenorrhoea, and hirsutism. She had a past history of hypertension and diabetes. She was obese (133 kg; body mass index (weight over height squared) 43.4) with a centripetal distribution of fat, moon face, buffalo hump, hirsutism, and chemosis. Blood pressure was 190/120 mm Hg and there was no other physical abnormality. Routine haematological and biochemical profiles were normal. A random blood glucose concentration was 11.3 mmol/l.

The patient was admitted for investigation. Both low dose and high dose dexamethasone suppression tests showed loss of diurnal variation and failure of suppression of cortisol secretion. In the presence of a low adrenocorticotrophic hormone concentration this suggested an adrenal source for the Cushing's syndrome. This was confirmed by computed tomography, which disclosed a 2 cm mass lesion in the left adrenal gland. Left adrenalectomy was performed and histological examination confirmed an adenoma. The patient was discharged taking hydrocortisone 20 mg in the morning and 5 mg at night and glibenclamide 10 mg daily.

She was readmitted six weeks later. Since the operation her weight had fallen by 14 kg. Blood pressure was 140/80 mm Hg and the glibenclamide had been stopped because of recurrent hypoglycaemia. She had, however, developed several new symptoms. These included polyarthralgia affecting wrists, elbows,

and knees and partially responding to ibuprofen prescribed by her general practitioner. Clinical examination of the joints showed nothing abnormal. She had also noted multiple subcutaneous nodules over her arms and legs. These nodules measured up to 6 cm diameter and were non-tender, firm, and attached to overlying skin and subcutaneous tissues. They had not been present before surgery. Biochemical and haematological investigations disclosed only a raised corrected calcium concentration (2.9 mmol/l; normal 2.2-2.5 mmol/l). The histological appearance of a biopsy sample of a nodule on the patient's forearm was "non-caseating granuloma" compatible with sarcoidosis. This diagnosis was supported by a raised serum angiotensin converting enzyme value of 109 U/l (upper limit of normal 65). And though the chest x ray picture was normal, lung function tests showed a low V₂₅ (maximal expiratory flow at 25% of forced vital capacity) with a normal transfer coefficient, suggesting small airways narrowing; in a non-smoker this may be a feature of sarcoidosis.

The patient was treated with prednisolone 20 mg daily, and within three days her joint symptoms had disappeared and serum calcium concentration had fallen to 2.6 mmol/l. One month later the skin nodules had disappeared.

Comment

To our knowledge this is the first report of sarcoidosis being detected in a patient after resection of an adrenocortical adenoma. We suggest that the activity of the sarcoidosis was suppressed before surgery by the high circulating cortisol concentrations, removal of which after adrenalectomy unmasked the sarcoidosis. This is supported by the lack of evidence of sarcoidosis before operation and the rapid resolution of symptoms and restoration of normocalcaemia on the reintroduction of exogenous steroids. We emphasise that this case illustrates the suppressive rather than curative effects of steroids on sarcoidosis. The aetiology of the patient's Cushing's syndrome was not related to pre-existing sarcoidosis, as this characteristically spares the adrenal gland¹ and there was no histological evidence of granulomatous infiltration.

This case should raise awareness of the possibility of unmasking steroid dependent conditions after treat-

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ment of Cushing's syndrome. Review of published work suggests that such cases are rare. In one case sarcoidosis presented after adrenalectomy in a patient with Carney's syndrome (primary adrenocortical nodular dysplasia, cardiac myxomas, and spotty pigmentation).² A case of inflammatory polyarthritis has been reported after surgery, the articular symptoms responding to hydrocortisone replacement.³

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Self reported hypertension among unemployed people in the United States

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Higher death rates from cardiovascular diseases have been reported among unemployed people in several countries after age, socioeconomic status, and marital status have been controlled for. Other studies have found that blood pressure and serum cholesterol concentration rise before and after loss of a job. Moreover, unemployed people consult doctors about cardiovascular conditions including hypertension, more often than do employed people.¹ We used data from a cross sectional survey of American adults to estimate the risk of hypertension among unemployed people after controlling for other risk factors.

Subjects, methods, and results

In 1992, 48 states and the District of Columbia participated in the behavioural risk factor surveillance system, which entailed interviewing people by telephone who had been contacted by dialling random numbers. A total of 96 213 people were interviewed. The median percentage of complete interviews for all the states was 82%. The percentages of respondents who had had their blood pressure checked in the past year were similar by demographic group. People who had not had their blood pressure checked in the past year were excluded. This study included people aged 30-59 who were available for work outside the home (n=36 957). Data for each state were weighted demographically and by selection probability.

Subjects were categorised as having hypertension if they had been told more than once by a health care professional that they had high blood pressure. Employed people either had an employer or were self employed (n=34 120). Unemployed respondents had been out of work for less than a year (n=1314) or a year or more (n=1523). Rates of unemployment estimated by the behavioural risk factor surveillance system were significantly correlated by state with unemployment rates obtained from the United States Bureau of Labor Statistics.

We computed prevalence odds ratios by logistic regression² to estimate the relative risk of hypertension among unemployed people. These ratios were adjusted for age, body mass, racial or ethnic group, education, and alcohol consumption. The table shows the results. People who reported having been unemployed for a year or more had a higher estimated risk of hypertension than those who reported having been unemployed less than a year. Unemployed men with less than a high school education had the highest risk of hypertension (prevalence odds ratio 3.1 (95% confidence interval 2.5 to 4.6)), but men who had graduated from high school and been unemployed for a year or more still had an increased risk (table). Women who

Adjusted prevalence odds ratios (95% confidence intervals) for self reported hypertension among unemployed Americans aged 30-59, by length of unemployment, education, and sex*

Education	Unemployed	
	< 1 year	≥ 1 year
Whole sample:	1.3 (1.0 to 1.6)	1.7 (1.4 to 2.1)
Men:		
Did not graduate from high school	3.0 (2.2 to 4.1)	3.3 (2.1 to 5.2)
Graduated from high or technical school	0.8 (0.4 to 1.6)	2.0 (1.3 to 3.2)
Educated beyond high or technical school	1.1 (0.6 to 2.0)	1.5 (0.7 to 3.6)
Total	1.3 (0.9 to 1.8)	2.2 (1.7 to 2.9)
Women:		
Did not graduate from high school	1.7 (0.8 to 3.3)	2.4 (1.5 to 3.9)
Graduated from high or technical school	1.2 (0.7 to 2.1)	1.3 (0.9 to 2.1)
Educated beyond high or technical school	1.3 (0.8 to 2.2)	0.8 (0.5 to 1.3)
Total	1.3 (0.9 to 1.6)	1.7 (1.4 to 2.1)

*Behavioural risk factor surveillance system, 1992.

had been unemployed for a year or more and had less than a high school education had an increased risk of hypertension (table). Age (prevalence odds ratio $e^{0.06}$ (95% confidence interval $e^{0.059}$ to $e^{0.062}$)), body mass ($e^{0.13}$ ($e^{0.10}$ to $e^{0.14}$)), being black ($e^{0.42}$, ($e^{0.28}$ to $e^{0.56}$)), and alcohol consumption ($e^{0.09}$ per ounce (28 g) ($e^{0.05}$ to $e^{0.13}$)) predicted self reported hypertension; sex did not.

Comment

The prevalence of self reported hypertension was increased among unemployed people in the United States, especially among men with less education. This is consistent with the association of lower education with a higher prevalence of hypertension³ and the fact that men are more adversely affected by unemployment than women.⁴

The recognised limitations of this study are that the subjects could have misclassified their hypertension and employment status and that we did not control for health selection bias—that is, unemployment because of poor health. Other studies have indicated that self reported hypertension is quite accurate and that people who lose their jobs involuntarily suffer adverse health consequences. To our knowledge, however, no other population based study has shown increased hypertension among unemployed people after other risk factors have been controlled for.

Stress with job loss and subsequent unemployment may result in adverse physical and mental health. Stressful life events, including unemployment, may precede heart disease.⁵ We recommend that unemployed people receive appropriate screening for and treatment of hypertension, especially those in poorer socioeconomic groups.

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