

or have been due to the earlier onset of this devastating illness. The high rate of violent death among the subjects with "other" disorders reflects the prevalence of disturbance among neurotic patients and those with personality disorders in forensic psychiatric practice.

CONCLUSION

A quarter of deaths among this population of mentally disordered offenders were violent. As the population ages, the proportion of violent deaths will decrease, but comparison with figures for the general population indicated an increased risk of unnatural death by a factor of between two and three. Death by suicide in the 25 to 29 age range was five times more common among the study population than the general population. Violent death was not statistically associated with diagnostic category though was less common among those with affective psychosis and mental handicap. There is good reason to believe that violent death occurs at an older age among those with affective disorders and that the difference in the rate of violent death between the two psychotic groups will diminish as the population ages. The very high rate of violent death among the non-psychotic group with "other" diagnoses shows the degree of disturbance even when "formal" mental illness is absent.

The likelihood of committing lethal offences is higher than expected in the schizophrenic population but not particularly abnormal among other diagnostic categories of mental illness.^{12,13} Even so, the number of schizophrenic people who kill must be much less than 1%. In comparison, this study shows that the risk of violent death to schizophrenic people is enormous, reinforcing the view that the illness renders them much more dangerous to themselves than others.

Serious mental illness carries an increased risk of unnatural death, which is probably exacerbated among mentally abnormal offenders, many of whom are alienated from family and friends, destitute, and unable to find asylum. Ultimately, better under-

standing of—and hence better remedies for—many of these illnesses may be forthcoming. In the mean time, as the case presented shows, the mentally disordered who are troublesome or who have forensic histories are liable to be rejected by local hospitals. As more mental hospitals are closed the need for asylum support becomes more pressing and this unpopular but needy group is liable to suffer in consequence. Part of that suffering may be an untimely and lonely death.

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SHORT REPORTS

Is endocrine ophthalmopathy related to smoking?

Endocrine ophthalmopathy is most commonly seen in patients with Graves' disease but is also found in other thyroid disorders and occasionally in patients without any signs of thyroid dysfunction¹; the factors concerned are poorly understood. Having gained the impression that a history of smoking is common in patients with severe endocrine ophthalmopathy, we conducted a case-control study that documented smoking habits in these patients, patients with Graves' disease with only slight or no eye disease, and subjects without any thyroid disorder.

Patients, methods, and results

We studied all 12 patients treated in this department during 1972-84 with endocrine ophthalmopathy class 3 or more (Werner's classification)² (10 women, two men; mean age at onset of ophthalmopathy 38 (range 24-51)). Six patients had Graves' hyperthyroidism; two had previously been treated surgically for this disease, one had spontaneous hypothyroidism; and three did not have any known thyroid disorder but did have enlarged extraocular muscles on orbital computed tomography and a reduced response of thyroid stimulating hormone to thyrotrophin releasing hormone. For each proband two control patients with Graves' hyperthyroidism but less severe ophthalmopathy (class 0-2) were matched for sex, age at diagnosis of thyrotoxicosis (within five years), and year of diagnosis. All subjects completed a questionnaire including details of smoking habits. For each proband four controls were randomly selected from a population registry and matched for sex and exact age. Smoking habits for the year of onset of ophthalmopathy in the corresponding proband were asked for; the response rate was 88%. We defined subjects who had been daily smokers for some period during the past year as current smokers and those who had been daily smokers but had not smoked in the past year as ex-smokers.

Mantel-Haenszel odds ratios for matched pairs with 95% confidence intervals were used to calculate significance³; a result was considered to be significant when the confidence interval did not include the value 1.0.

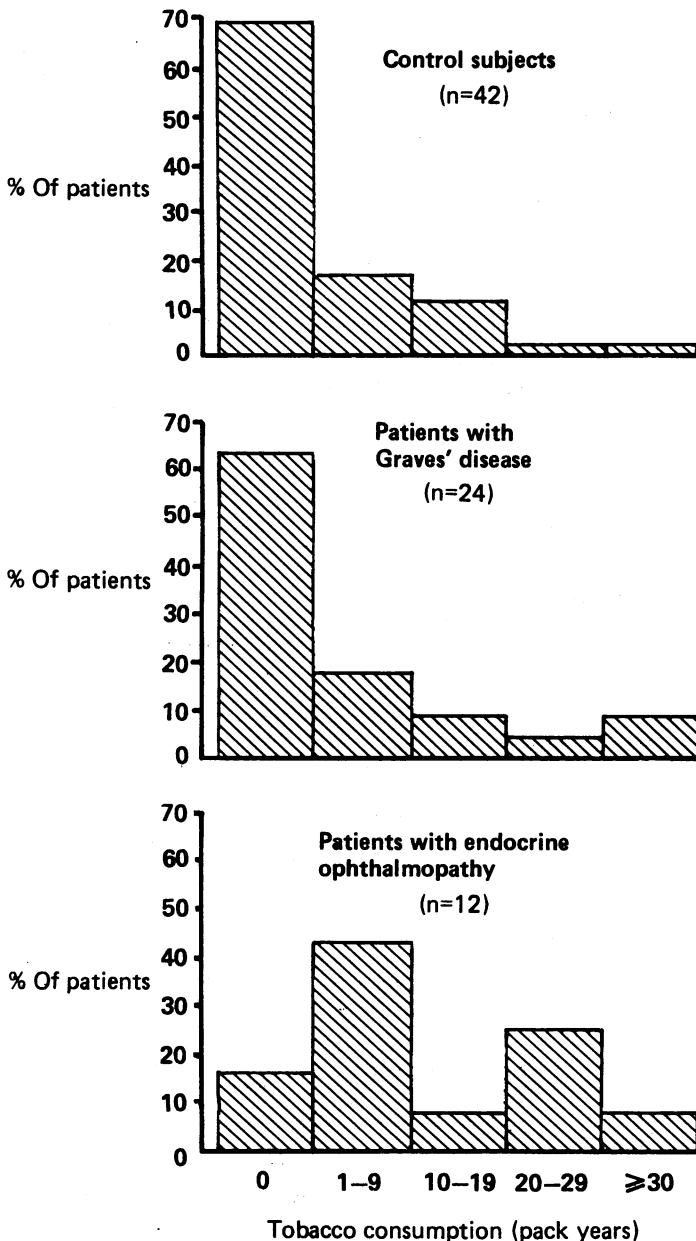
Ten of the 12 patients with endocrine ophthalmopathy (83%) were current smokers, including all four with loss of vision. This compared with 11 of the 24 (46%) hyperthyroid patients without severe eye disease and 13 of the 42 (31%) controls.

The figure shows that total tobacco consumption was considerably higher in the patients with endocrine ophthalmopathy than the two other groups. The odds ratio between patients with ophthalmopathy and controls was 20.2 for current smoking (95% confidence interval 2.8 to 144.8). When ex-smokers and current smokers were analysed together the odds ratio was reduced to 8.9 (1.3 to 60.2). The odds ratio between patients with thyroid disease with and without ophthalmopathy was 10.0 (1.4 to 74.3) for current smokers and 4.5 (0.8 to 24.3) when ex-smokers were included.

Comment

This study suggests that smoking and severe endocrine ophthalmopathy are associated. A higher proportion of patients with endocrine ophthalmopathy were smokers compared not only with randomly selected controls but also with patients with Graves' disease with slight or no ophthalmopathy. Therefore the main effect of smoking seems to be on the severity of eye disease in Graves' disease. The association was stronger when only current smokers were considered, which suggests that the effect of smoking on endocrine ophthalmopathy is direct and immediate.

An association between smoking and thyroid disease has been observed.⁴ Infiltrative and severe endocrine ophthalmopathy is believed to be of autoimmune origin.¹ Smoking affects both the cell mediated and the humoral immune systems, but the influence seems to be mainly an inhibitory one.⁵ Possibly subsets of T or B cells are differently affected by



Relative distribution of total tobacco consumption in all subjects studied. Pack years were calculated as average daily consumption of cigarettes (20) × number of years of smoking. For pipe smokers daily amount of tobacco consumed was converted to corresponding number of cigarettes.

smoking, and this might explain the induction of severe eye disease in thyroid disorders.

This is the first study suggesting a direct relation between smoking and severe endocrine ophthalmopathy. We emphasise that the number of probands was small and that the investigation was initiated by the observation that some of them were smokers. Further studies should be performed to see whether smokers are overrepresented among patients with thyroid disease with severe ophthalmopathy. If a relation was found stopping smoking might have a beneficial effect in patients with eye disease associated with thyroid disorders.

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Penetrating abdominal wound caused by a firework

Penetrating abdominal wounds caused by fireworks are uncommon; we report a case.

Case report

On Guy Fawkes's day in 1986 during an organised firework display a rocket failed to ignite. It was removed from its holder and thrown on the ground. On impact it caught fire and veered horizontally into the crowd. It became lodged in the clothing of a 12 year old girl, and within seconds the explosion to release the "stars" occurred. Struggling to free herself from her burning clothes, the girl burnt both hands. She also suffered deep burns to the left side of her abdomen and chest and the anterior surface of her left forearm (5% of her total body surface area). Just below the costal margin there was a wound 4 cm long and 1 cm wide with charred edges, which was thought to be superficial (figure). Her general condition was good, and she was admitted for observation.

Seven hours later her condition deteriorated. She complained of pain in her left iliac fossa and discomfort in her left shoulder. On re-examination there was rebound tenderness, guarding, and rigidity. The bowel sounds that had previously been present had disappeared. Her pulse, blood pressure, and temperature remained within normal limits. A second set of abdominal x ray films showed free gas under the diaphragm.

At laparotomy the wound in the left hypochondrium penetrated not only the abdominal wall but also the stomach. Anteriorly at the junction of the fundus and body and posteriorly near the attachment of the lesser omentum, lying below the stomach, was a 2.5 × 2.0 cm burn on the wall of the jejunum. A 2 cm laceration on the lower pole of the spleen was also found.

The gastric perforation was closed in two layers after excision of the charred edges of the wound. The laceration in the spleen was sutured, and the bleeding stopped. The burnt area of the jejunum was oversewn transversely with two layers of seromuscular sutures. The perforation in the abdominal wall was sutured from its deep surface, but the skin at the site of entry was left open. She made an uncomplicated recovery.

Comment

Fireworks used in displays are explosive or combustible. The rocket that caused this injury burns for from five to eight seconds and attains a



Patient on admission to casualty department.