

# Lesson of the Week

## Burns because of epilepsy

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Patients with epilepsy may sustain injuries as a result of seizures. Many of the patients attending outpatient clinics for the management of epilepsy have signs or give a history of burns sustained as a result of seizures. Although burns received during seizures have been reported in association with cerebral cysticercosis<sup>1</sup> and in subjects wearing grass skirts,<sup>2</sup> we are not aware of any surveys that have measured the extent of this problem in routine clinical practice. Serious burns as a result of epileptic seizures that require operative treatment are, however, well recognised by those who treat such patients,<sup>3,5</sup> and these burns are commonly deep.<sup>6</sup>

We investigated the prevalence, severity, and circumstances of burns and other injuries sustained during seizures in patients with chronic epilepsy.

### Methods

We asked 134 consecutive patients attending epilepsy clinics in teaching hospitals to complete a standardised questionnaire. The patients were asked about the duration and type of their epilepsy; the present frequency of their seizures and the drugs taken to control them; and the nature, severity, and circumstances of any burns (whether related to seizures or not) and other injuries sustained during seizures. They were also asked to recall the advice they had received about driving, swimming, working with machinery, and preventing burns. For comparison we gave a similar questionnaire to 80 patients with diabetes receiving insulin treatment, who were asked about burns and injuries sustained during the altered consciousness that occurs during periods of hypoglycaemia.

The results were expressed as medians and ranges and were analysed with the Mann-Whitney U test.

### Results

Of the 134 patients with epilepsy, 51 (38%) recalled having been burnt during a seizure (table I) and 12 had received burns more than once (table II). Nine patients (7%) recalled receiving a burn that was unrelated to seizures. There was no significant difference in the ratio of men to women, the frequency of seizures, and the number of anticonvulsant drugs used between the groups of patients who had and had not suffered burns during seizures, although the patients with burns were significantly older ( $p=0.02$ ) and had had epilepsy longer ( $p=0.01$ ). Burns were significantly more common in patients with complex partial epilepsy, with or without grand mal seizures, than in patients with only grand mal seizures ( $p=0.001$ ).

**Doctors should warn patients of the risk of burns during seizures at the time epilepsy is diagnosed. Simple measures could improve the safety of such patients in the home**

Table II shows the type of burns and their sources; burns were sufficiently severe to require hospital treatment in 17 cases, admission to hospital in five, and skin grafting in two. Seventy eight patients (58%), recalled receiving

TABLE I—Details of patients with epilepsy

	Patients with burns during seizures	Patients without burns during seizures
No	51	83
Sex ratio (M:F)	18:33	36:47
Median age (range) (years)	39 (17-76)	33 (16-78)
Median duration (range) of epilepsy (years)	27 (4-63)	19.5 (2-55)
Median (range) of seizures in past year	24 (0-5000)	18 (0-1400)
Type of seizure:		
Grand mal	9	39
Complex partial	18	12
Grand mal and complex partial	24	32

TABLE II—No and type of burns received during seizures in 51 patients with epilepsy

Type of burn	
Scalds from hot fluids	25
Burns during cooking	14
Burns from:	
Kettles	14
Fires and heating appliances	19
Cigarettes	4
Hot water bottles	3
Burns on multiple occasions	12
Facial burns	8

TABLE III—Advice or warnings recalled by patients with epilepsy

Hazard	Patients with burns during seizures (n=51)			Patients without burns during seizures (n=83)		
	Advice recalled	Advice not recalled	NA*	Advice recalled	Advice not recalled	NA*
Driving	30	7	14	43	3	37
Heights	23	23	5	55	25	3
Machinery	33	13	5	37	43	3
Swimming	28	18	5	40	40	3
Burns	4†	47		3	80	

\*NA=Not applicable on grounds of age, educational subnormality, or physical disability.  
†Two patients were warned before burning themselves and two afterwards.

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other injuries during seizures, including cuts, bruises, and falls (57 patients); scalp and facial lacerations (nine fractures and dislocations of joints (17); and oral injuries or damage to the teeth (13). Eighteen patients reported multiple injuries. Injuries other than burns were equally prevalent among the patients who had and had not sustained burns during seizures (32 patients (63%) and 47 (56%) respectively). Table III shows the advice and warnings that the patients recalled being given.

The 80 patients with diabetes treated with insulin who were questioned were comparable in age with the patients with epilepsy (median age 42, range 17-78 years); the median duration of diabetes was 19 (1-40) years, and the median frequency of symptomatic episodes of hypoglycaemia was 12 (0-200) a year. Eight of these patients recalled a burn that was not related to hypoglycaemia; only one patient had been burnt during a hypoglycaemic episode when he fell into an open fire. Fourteen patients with diabetes (18%) had sustained other injuries during episodes of hypoglycaemia.

## Discussion

Patients with epilepsy often injure themselves during seizures and are usually warned at the time of diagnosis about the dangers of heights, swimming alone, and working with machinery. We confirmed that burns sustained during seizures are common and may be severe, yet they are commonly overlooked in reports of the hazards of epilepsy<sup>7</sup> and are not mentioned in a standard textbook about the disease.<sup>8</sup> Burns were less common than simple cuts, bruises, and falls but more common than the well recognised risks of injuries to bones and damage to teeth. There is a lack of awareness among patients of the risk of receiving burns during seizures; only seven patients with epilepsy (5%) could recall receiving warnings about this risk, and two of these were warned only after they had been burnt. Although the reported incidence of burns received during normal consciousness was similar for both patients with epilepsy (7%) and those with diabetes controlled by insulin (10%), the risk of burns during altered consciousness was greater in patients with epilepsy. Interestingly, one patient with both diabetes and epilepsy reported that although he had not suffered any burns attributable to episodes of hypoglycaemia, he had fallen into an open fire and burnt himself seriously during a seizure.

Analysis of the circumstances of burns suggests that many are avoidable. Most burns occurred in the home while patients were

performing everyday domestic tasks. Contact with a hot kettle was the cause of 14 burns in patients with epilepsy, and insulated plastic kettles, which are now widely available, should be recommended. A further 14 burns were received while cooking; two patients who burnt themselves in this fashion subsequently cooked only when their spouse was in the home. Fitted guards on cookers may be helpful, and for those most at risk a microwave oven could reduce danger. Two patients had sustained burns from chip pans, and one patient, although not burnt herself, had caused a serious house fire when she had a seizure while using an open chip pan; self sealing deep fat fryers are a far safer alternative for patients with epilepsy. Nineteen burns were received from fires and heating appliances; lying against a central heating radiator was the most common cause of such injuries, and we suggest that radiators as well as solid fuel fires should be fitted with guards. The four burns that were received from cigarettes and the three from hot water bottles could have been easily avoided. In addition, patients with epilepsy should be advised not to light bonfires unattended.

This study indicates that epileptic seizures often result in burns, which may be serious. At present the association between burns and seizures is inadequately recognised by doctors, and patients should be warned of the risk at the time of diagnosis. Simple measures could reduce the risk of such injuries.

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# Medicolegal

## Mental Health Commission defeated over paedophile

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The Mental Health Act Commission, set up by the 1983 Mental Health Act as a watchdog for mental patients' rights, has lost the first court challenge to the exercise of its powers. On 26 May the High Court ruled that the commission had no jurisdiction to try to stop the treatment of a convicted paedophile with the luteinising hormone releasing hormone analogue goserelin. Even if the

commissioners had jurisdiction, said Lord Justice Stuart Smith and Mr Justice Farquharson, their decision not to allow the treatment to go ahead would be quashed on the grounds that they took into account matters they should not have taken into account, applied the wrong test, and reached a decision that was unreasonable.

Section 57 of the Mental Health Act stipulates that certain controversial treatments for "mental disorder" can be given only if three Mental Health Act commissioners certify that the patient is capable of understanding the nature, purpose, and likely effects of the treatment and has consented to it. In addition, the treatment cannot be given unless a Mental Health Act Commission doctor has certified—after consultation with two professionals other than a doctor concerned with the medical treatment—that the treatment

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