

Some Aspects Of Burned Epileptics

P. S. Chari, M.S., M.Ch. (Plastic Surgery)

Introduction :

APPROXIMATELY one in every 200 people suffers from epilepsy at some time or the other, often for the major part of his life (Magnus, 1974). The problems of the burned epileptics, present a challenge not only in the treatment of severe burns but also in the field of preventive and social medicine.

Only two studies have been devoted entirely to the aspects of burns in epilepsy (Maisels and Corps, 1964; Richards, 1968). Tempest) (1956) during an investigation of the causes of burns in Wales found 18 persons (7%) to be suffering from epilepsy and their clinical history was characterised by a long duration of the disability, a high frequency of fits, and some degree of "mental degeneration" in all cases. Maisels and Corps (1964) at the Liverpool Regional and Plastic Unit reported similar findings; they believed that aura was important as a protective mechanism though only six of their 34 patients experienced it. Richards (1968) at the Birmingham Accident Hospital noted a high incidence of social maladjustment and psychiatric disorders in his patients. All the patients in the above series had grand mal seizures from time to time and all had

sustained their burns during this type of attack.

Subjects and Methods :

(1) *Incidence* : In the period 1969-74 33 Epileptic patients were treated in the Plastic Surgery Division of the Postgraduate Institute of Medical Education and Research, Chandigarh, suffering from burn injuries. The burned epileptics constitute 3.9% of all cases of burns and their sequelae treated in this division. The age and sex distribution are shown in Table I.

Table : I

Age Group	Males	Females
Less than 10 years	0	0
11 to 20 years	3	10
21 to 30 years	9	7
31 to 40 years	1	2
More than 40 years	1	0
Total	14	19

(2) *Socio-Economic Aspects* : All our patients belonged to the low socio-economic group. Only four of the male patients were employed. Only one female patient was employed, being a ward attendant. Two of the married female patients were abandoned by their husbands. Most of them were of

*Lecturer in Plastic Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh--160011 India.

low intelligence, accustomed to having their needs cared for by solicitous family members. Four Female patients were pregnant at the time of the burn injury. Six (19%) patients showed obviously abnormal behaviour during their hospital stay, the psychiatric diagnoses were acute organic brain syndrome, hysterical reactions and schizophrenia.

(3) *The Burn Injury* : Flame burns were sustained by 30 patients while three had scalds. Six had contractures and the rest had unhealed wounds. The time interval from the burn to attending our hospital ranged from a few hours to eight months. Most of them presented a few weeks after the burn with infected raw areas. The usual story was that the patient got a seizure while sitting near a fire or in the kitchen while cooking. One young male during a phase of abnormal behaviour clasped a red-hot iron chimney.

There were 21 (64%) burns of the upper extremities, 13 (40%) of the lower extremities, 7 (21%) of the face and neck, and 4 (12%) of the trunk. The extent of the burns ranged from 5% to 55% of the body surface. There were three deaths due to extensive burns. The characteristic feature of the injury was a deep burn affecting a relatively small area. In 23 (70%) patients the burn affected less than 15% of the body surface. Disfigurement or restriction of function was severe in 23 (77%) of the patients who survived, moderate in four (13%), and minimal in three (10%). The injury necessitated amputation of an arm in one unfortunate and fingers in three others. In six victims the burn was so deep as to expose

bones.

(4) *Clinical Features of the Epilepsy* : All the patients suffered from grand mal type of seizures. They were suffering for periods ranging from one and a half months to 20 years. Three epileptics got the burn injury during their first fit. The frequency of the fits varied from once a week to once in two years. The duration of illness was more than 5 years in (15%) patients, and 25 (79%) developed fits before the age of 20 years. Only one patient had a previous history of a burn sustained during a fit. None of the patients was taking anti-convulsant drugs regularly. Seven patients took the drugs at irregular intervals, the rest took some indigenous medicines or had no treatment at all. Family history was positive in only one patient whose mother suffered from epilepsy. One child of 11 years had encephalitis at the age of one year and started getting seizures six months later.

Only five (15%) patients said that they sometimes experienced aura before a fit. The auras consisted of visual and auditory hallucinations or sensations referred to the epigastrium. Aura is considered to be indicative of localisation in generalised seizures but in only two patients could epileptogenic foci be demonstrated.

Electro-encephalographic studies were done in 17 patients. The awake records did not reveal any definite abnormality in six subjects. Mild or moderate generalised dysrhythmias without definite localisation were present in six patients. Epileptogenic tendencies were revealed in five E.E.G. 's of

which two had suspicious temporal lobe foci.

Management

On admission the patients were kept in beds with railings. The epilepsy was controlled by administering Phenytoin and Pheno-barbitone in appropriate doses in consultation with a neurologist.

The burn wounds were treated with dressings till they were fit for covering with split skin grafts. It is unwise to embark upon complicated reconstructive procedures involving full thickness skin, unless the epilepsy is well under control and the patient is capable of taking drugs regularly. Anti-convulsant drugs must not be stopped as part of routine pre-anaesthetic regime as patients may develop fits on the operating table before induction of anaesthesia. The wounds were covered with split skin grafts only in 23 patients of whom six also had their contractures released. Full thickness skin cover had to be provided in four cases including one in whom the knee joint and tibia were exposed.

After discharge from the wards the patients were advised to attend the Neurology Department for long term follow-up of their epilepsy. The importance of taking drugs regularly must be emphasised. They should be warned to stay away from fires, water reservoirs and to avoid soft pillows for sleepings. The patients should be encouraged to lead as normal a life as possible.

Discussion :

The incidence of epileptics burned in domestic accidents has been reported to be 7% (Tempest, 1956) and 5% (Bull, et al.

1964). Maisels and Corps (1964) found 10% of patients with recent burns to be epileptics and Richards (1968) 8.6% of all adult admissions to the burns unit. The incidence of 3.9% epileptics in the present series appears to be low. Probably the usual pattern of large families, where some people are always at home, to protect the epileptic from injuring himself may be relevant. Tempest (1956) reported that five of his 18 subjects had been burned on previous occasions and Richards (1968) found that 50% of his patients had previous burns. Apart from burns, Richards found the accident liability of the whole group to be high. Twenty (66%) had sustained three or more accidents during the previous five years, of which only five of the accidents had been incurred as a direct result of an epileptic fit. We have only one case to cite who had a previous accident during a fit.

The male to female ratio of 1 : 1.4 is perhaps indicative of the greater risks run by women in the kitchen. A study from five major centres in India has reported a higher proportion of males with epilepsy roughly in the ratio 3 : 2 (I.C.M.R. 1973). The average age of the patients in Richard's series (44 years) is considerably higher than the average age of 24 years in the present series. This may be because ours is mainly a younger population and in the series quoted children with burns were usually treated in other hospitals. Epilepsy had developed in 79% of our patients before the age of 20 years; this is in accordance with other published reports concerning the early onset of idiopathic epilepsy (Lennox and Lennox, 1960).

The patients were all of low intelligence. One adult was so dull that she did not know the name of the village she came from and could not count upto ten. In epileptics the mean I.Q. is lower than in normals (I.C.M.R. 1973). Unfortunately I. Q. tests were not done in most of our patients. Richards (1968) found that 50% had an I.Q. below 90. It is on the other hand well known that many great and intelligent persons were reported to be suffering from epilepsy. It would be worth finding out whether those who got injured belonged to a group of epileptics with low intelligence. It has been shown that impairment of cognitive functions are directly related to the number of fits suffered by the patient (Mohan, 1974).

Abnormal behaviour was manifest on six (19%) patients. Unfortunately, psychiatric consultations were not requested in all the cases. Richards (1968) found a very high incidence of psychiatric disorders, previous psychiatric treatment had been given to 60%

of his cases. Pond and Bidwell (1960) found that 7% epileptic patients had been in a mental hospital and estimated that probably 10% of epileptics need a period of in-patient psychiatric care at some stage.

Aura preceding a fit was present in only 15% of our patients which is much lower than the incidence of 50% reported by Richards (1968).

The E.E.G. was normal in six patients (35%) of the 17 in whom this investigation was done. The incidence of normal E.E.G. in epilepsy is stated to be 10 to 20% and is higher in the grand mal type (Brain and Walton, 1969). A normal E.E.G. during the interval period does not exclude epilepsy.

Summary :

Some aspects of burned epileptics, as seen in Chandigarh, have been described. the relevant literature has been briefly reviewed.

REFERENCES

1. Brain, L. W. & John, W. : Diseases of the Nervous System. The English Language Book Society and Oxford University Press. Seventh Edition. 1969, P. 932-933.
2. Bull, J. P., Jackson, D. M. and Wilson, C. : Brit. Med. Jour., 4 : 1421-1427, 1964.
3. Hoch, E.M. : Indian children on a psychiatrist's playground. Indian Council of Medical Research, New Delhi-1967. P. 488.
4. Indian Council of Medical Research : Fourth Annual Report. Collaborative epidemiological study on epilepsy in India-1973.
5. Lennox, W.G. and Lennox, M.A. : Epilepsy and related disorders. Boston. Little Brown and Co. 1960, P. 1100.

6. Magnus, O., Vinken, P.J. & Bruyn, G.W. : Handbook of clinical neurology. Vol. 15. The Epilepsies. North Holland Publishing Company, Amsterdam, 1974 P.N.
7. Maisels, D.O. and Corps, B.V.M. : Lancet : 1 : 1298-1301, 1964.
8. Mohan, V. : Comparison of intellectual and memory functions in normals and epileptics. Thesis for M. D. Psychiatry, PGIMER-1974.
9. Pond, D.A. and Bidwell B.H. : Epilepsia (Amst) 1 : 285-289, 1961
10. Richard, E.H. : Epilepsia (Amst) 99 : 127-135, 1968.
11. Tempest M.V. : Brit. Med. Jour., 1 : 1387-1392, 1956.