

PSYCHIATRIC EVALUATION OF LEG FRACTURE PATIENTS

S. CHAUDHURY, N.L. DINKER & A.K. SHARMA

ABSTRACT

Fifty consecutive leg fracture patients and an equal number of age and sex matched normal controls were evaluated by psychiatric interview and mental status examination, Sinha's anxiety scale (SAS), Hamilton depression rating scale (HDRS) and the Michigan alcoholism screening test (MAST). Detailed evaluation revealed a high prevalence of alcohol dependence/abuse (34%) and depression (8%). Leg fracture patients were significantly less anxious but significantly more depressed as compared to the normal subjects. Psychiatric assistance would greatly aid in the management of these patients.

Key Words : Leg fracture patients, psychiatric morbidity, alcohol dependence, depression

There is considerable evidence in the literature which suggests that a substantial number of patients in nonpsychiatric wards suffer from undiagnosed psychiatric conditions. The prevalence of psychiatric disorders in medical and surgical wards has been estimated to vary from 20% to 80%, but only a small fraction of these are treated by a psychiatrist (Gobar et al., 1987; Kuhn et al., 1989). The commonest diagnoses include depression in various forms, adjustment disorders, substance abuse and organic mental disorders (Gobar et al., 1987). Undiagnosed psychiatric morbidity leads to much unalleviated and avoidable suffering to the patient. In addition, maladaptive behaviour due to anxiety, depression, acute and chronic brain syndromes, psychoses and substance abuse may modify the clinical presentation and complicate the management of the medical or surgical condition (Kuhn et al., 1989; Elvy & Gillespie, 1985). The identification and treatment of the psychiatric disorder may improve the overall management of these patients. The paucity of Indian work in this field prompted us to undertake the present

study with the aim to find out the psychiatric problems associated in patients having fracture of leg.

MATERIAL AND METHOD

The study was conducted at the orthopaedic centre of a service hospital during the period 1 Feb. 92 to 30 Jun. 95 on fifty consecutively admitted male patients with fractures of the long bones of the leg or acetabulum. Socio-demographic data along with details of the injury were recorded on a specially designed proforma. A psychiatric interview and mental status examination were carried out during the third week of hospitalisation after the initial orthopaedic treatment had been completed. Equal number of age and sex matched normal control subjects without any medical or psychiatric illness were also evaluated. Psychiatric diagnoses were made as per DSM III R criteria (APA, 1987). In addition all the subjects underwent the following psychological tests :-

1. Sinha's anxiety scale (SAS)- it is utilised to measure overall anxiety as well as anxiety in various areas such as social, psychological, economic and physical. The SAS consists of

100 items with forced choice response alternatives of yes or no. The possible range of score varies from 0 to 100. It is a clinically useful instrument for quick estimation of manifest anxiety (Sinha, 1992).

2. Hamilton depression rating scale (HDRS)-is a 17 item observer rating scale for the measurement of depression. The scale has high validity against global judgement and has been validated for Indians (Jiloha, 1989).

3. The Michigan alcoholism screening test (MAST)- 25 item test comprising questions relating to personal opinions on drinking, opinions of family and friends, problems arising from drinking and some signs and symptoms of alcohol dependence. It has a high sensitivity in detecting alcoholism. The questions are scored from 1 to 5. In general, 5 points or more places the subject in an alcoholic category; 4 points are suggestive of alcoholism; three or fewer points indicate the subject is not an alcoholic. Programmes using this scoring system find it very sensitive at the five point level, and it tends to find more people alcoholic than anticipated. However, it is a screening test and should be sensitive at its lower level (Gibbs, 1983).

Statistical comparisons were performed using the chi-square test (with Yates correction) and Kruskal-Wallis one way analysis of variance by ranks.

RESULTS

Demographic characteristics of the leg fracture patients and control subjects are given in table 1. There were no statistically significant differences between the two groups on any of the demographic characteristics. The commonest cause of injury were related to duty (n=23). The second common cause was road traffic accidents (n=18); other causes were accidents off duty hours (n=8) and attempted suicide (n=1) by a patient with schizophrenia.

Analysis of the scores on the psychological tests (table 2) revealed that the leg fracture patients obtained significantly lower scores on Sinha's anxiety scale as compared to the

TABLE 1
CHARACTERISTICS OF LEG FRACTURE PATIENTS (N=50) AND NORMAL CONTROLS (N=50)

Characteristics	Leg fracture patients	Normal controls
Age (in years)		
up to 20	2	1
21-30	23	25
31-40	11	12
41-50	11	12
Above 50	3	0
	$\chi^2= 3.50, N.S.$	
Education		
up to class 5	4	2
6-10 class	38	37
Above class 10	8	11
	$\chi^2= 1.14, N.S.$	
Family income(Rs. per month)		
Upto Rs. 2,000/-	2	1
Rs. 2,001-3,000/-	27	28
Rs. 3,001-3,500/-	9	9
Rs. 3,501-4,000/-	8	9
Above Rs. 4,000/-	4	3
	$\chi^2= 2.78, N.S.$	
Marital status		
Married	37	41
Unmarried	13	9
	$\chi^2= 0.93, N.S.$	
Religion		
Hindu	47	46
Sikh	1	1
Muslim	1	1
Christian	1	1
	$\chi^2= 0.34, N.S.$	
Domicile		
Rural	44	42
Urban	6	8
	$\chi^2= 0.33, N.S.$	

normal controls. On the other hand, the leg fracture patients had significantly higher scores on HDRS as compared to the normal controls. On the MAST 14 leg fracture patients and 2 normal controls were placed in the alcoholic category, while 4 patients and 2 normal controls were placed in the "suggestive of alcoholism"

TABLE 2
PSYCHOLOGICAL TEST RESULTS OF THE LEG
FRACTURE PATIENTS AND NORMAL CONTROLS

Test	Leg fracture patients (N=50)	Normal controls (N=50)
SAS		
Mean score	16.06	23.12
Range of score	1-67	1-62
Very high anxiety	4	4
High anxiety	3	8
"Normal" anxiety	4	6
Low anxiety	10	9
Very low anxiety	29	23
	KW=14.47, p<0.01	
HDRS		
Mean score	8.32	2.8
Range of score	1-20	0-4
Severe of depression	9	-
Minor depression	12	-
No depression	29	50
	KW=17.92, p<0.01	

category.

On psychiatric evaluation 24 (48%) of the leg fracture patients were diagnosed as psychiatric cases as compared to 1 (2%) of the control subjects. The difference was statistically significant ($X^2=22.9$; df=1; p<0.01). The psychiatric diagnoses of the leg fracture patients included: organic mental disorder (n=1), alcoholic psychosis (n=1), schizophrenia (n=1), alcohol dependence (n=11), alcohol abuse (n=6), adjustment disorder (n=5; with depressed mood 4, anxiety 1). One control subject was diagnosed to have alcohol abuse.

DISCUSSION

The results of the present investigation have to be interpreted with caution as the study was conducted on a special group of subjects viz, the army and paramilitary personnel. The injuries related to duty are expected. However, the large number of cases due to road traffic accidents (n=18) though in agreement with earlier studies (Kuhn *et al.*, 1989; Gobar *et al.*, 1987) indicates the necessity of prevention measures aimed at improving mechanical transport discipline which could bring down morbidity from this cause.

The significantly higher levels of depression in the leg fracture patients indicated by the significantly higher scores on the HDRS obtained by the leg fracture patients was on the expected lines and is in agreement with Kuhn *et al.* (1989). The significantly lower levels of anxiety in the leg fracture patients, however, seemed paradoxical, but is in agreement with *the finding of a study of limb injury cases during the Indo-Pak conflict 1971* (Dubey *et al.*, 1977). Similarly, Noble *et al.* (1952) in a study of wounded soldiers in the Korean war reported that wounded soldiers were apt to show less anxiety, in general the more disabling the wound the less the anxiety except in permanent mutilation. The causes for the low anxiety levels in these patients remains obscure. Psychodynamic explanations have been proposed based on the following presumptions: the soldier feels, being wounded, he has contributed to the cause of the nation. This reduces the anxiety. Sometimes being wounded is an honourable escape from battle/inhospitable terrain. The wounded soldier receives unlimited emotional support from colleagues, medical personnel and his family and friends. Finally good leadership, healthy interpersonal relationship and prompt treatment may have eliminated anxiety.

The major finding of our study was the high incidence of 48% of psychiatric disorders in the leg fracture patients. Alcohol abuse and dependence were the commonest diagnoses

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seen in 34% patients while depressive symptoms were second in frequency occurring in 8% patients. It has been reported that more patients with alcohol related problems are found in orthopaedic units than anywhere else in the hospital (Elvy & Gillespie, 1985) and our findings are consistent with this. It has also been reported that alcohol habit may contribute to the accident which result in fractures (Kuhn et al., 1989). In the present study this was found in only 4 patients. However, alcohol abuse and dependence can significantly contribute to serious psychopathology, and, while some patients may "medicate" their depression with alcohol, it is also well known that alcohol can cause or aggravate depression.

The psychiatric pathology found in the leg fracture patients in the present study are serious and are likely to adversely affect the patients treatment. Alcohol withdrawal problems with resulting uncooperativeness and a higher rate of complications are likely to occur. Depressive states not only cause emotional suffering, but may lead to pessimism, negativism or even self-punishing behaviour, possibly jeopardising treatment. It is obvious that psychiatric assistance will definitely facilitate in-hospital management of these patients and increase the chances of uncomplicated recovery of these patients.

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