

FIG. 2.—Steady-state plasma amitriptyline and nortriptyline levels in case 11 before and during concomitant medication with diazepam.

epoxide to induce microsomal enzymes. Orme *et al.* (1972) again found evidence of enzyme induction by chlordiazepoxide in animals and also observed that it increased the excretion of urinary 6 β -hydroxycortisol in two out of five of their patients. Increased excretion of this metabolite is thought to be an index of hepatic enzyme induction. In these two subjects, however, warfarin levels were *not* affected. The present study complements that of Orme *et al.* who found no interaction effects with nitrazepam, diazepam, or chlordiazepoxide and warfarin. It further stresses the need to measure the actual plasma levels of a particular drug before assumptions about this type of interaction can be made as other less direct indices may be misleading. The practical clinical implications of drug interactions are considerable. Starr and Petrie (1972) calculated the very sizeable risk that patients have of drug interactions when on maintenance anticoagulant therapy due to either self-medication or additional drugs prescribed for them by other

practitioners. It is possible that maintenance tricyclic antidepressant therapy may become common practice in view of the prophylactic value of this regimen reported by Mindham *et al.* (1972). Further, it is conceivable that failure in prophylaxis with just such treatment might result from the unwanted effects of intercurrent medication.

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E.E.G. and Personality Factors in Baby Batterers

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Summary

Out of 35 parents who battered their children eight had an abnormal E.E.G. All of these were found to be psychopathic, of low intelligence, and to be persistent batterers. The presence of an abnormal E.E.G. strongly suggests that some baby batterers are more closely related to those who commit acts of violence and that taken as a whole they are not a homogenous group about whom it is safe to generalize. The possibility of a separate subgroup among baby batterers, therefore, needs close attention.

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Introduction

Growing interest in the subject of "battered babies" has led to a belief that those who injure their children are not aggressive criminals but relatively normal persons who are exposed to unusual and excessive stress (Helfer and Kempe, 1968). The view has also been put forward that psychopathy is not a significant finding (Steele and Pollock, 1968). Despite this it has been shown that a high proportion of baby batterers have a history of blackouts or fits (Gibbens and Walker, 1956). Because of this and because we believe that insufficient emphasis has been placed on the possible organic background of this type of antisocial behaviour we decided to undertake an investigation of E.E.G. findings among baby batterers and any attendant abnormal personality correlates.

It is known that between 5 and 10% of the general population exhibit E.E.G. abnormalities (Hill and Watterson, 1942; Cobb, 1963). In selected groups such as university students and flying personnel E.E.G. abnormalities occur in fewer than 5% (Williams, 1941; Harding, 1973). In contrast, among those who are known to have committed acts of violence—for example, motiveless murder etc.—abnormalities may be found in 20% or more (Hill, 1943; Stafford-Clark and Taylor, 1949).

Subjects and Methods

As part of a comprehensive study in baby battering which will be reported elsewhere and which involved 134 battered babies in all, E.E.G.s were recorded from 35 subjects who either confessed to inflicting injuries on their children or in whom the index of suspicion was high enough to make it virtually certain that they had done so. In addition to these, 16 of their husbands and wives were also subjected to E.E.G. examination. In 13 other instances there was either no spouse or he or she was not available. Five subjects failed to co-operate while one other who attended fainted, leading to abandonment of the procedure.

The E.E.G.s were divided into two groups. Those graded as *normal* either consisted of alpha activity with negligible amounts of theta activity or contained alpha activity together with small amounts of theta activity (fig. 1) or showed only low voltage beta activity or harmonically related frequencies and prominent mu activity. Those graded as *abnormal* contained noticeable

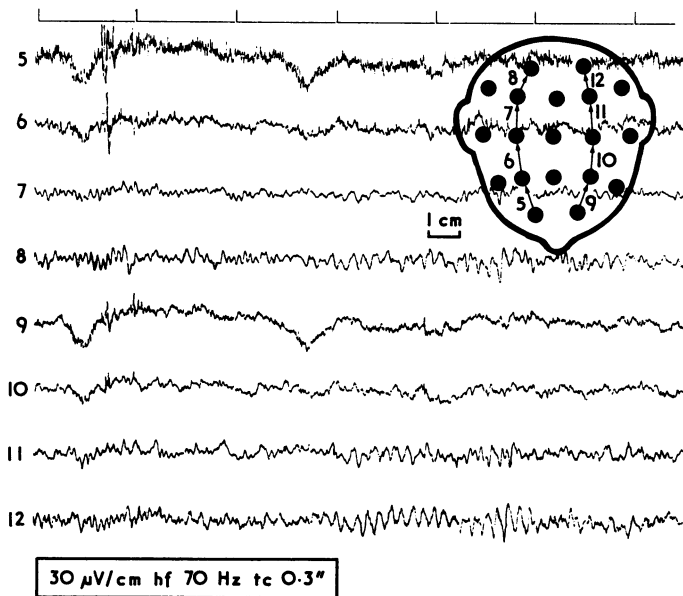


FIG. 1—Normal E.E.G. showing alpha activity and small amounts of theta activity.

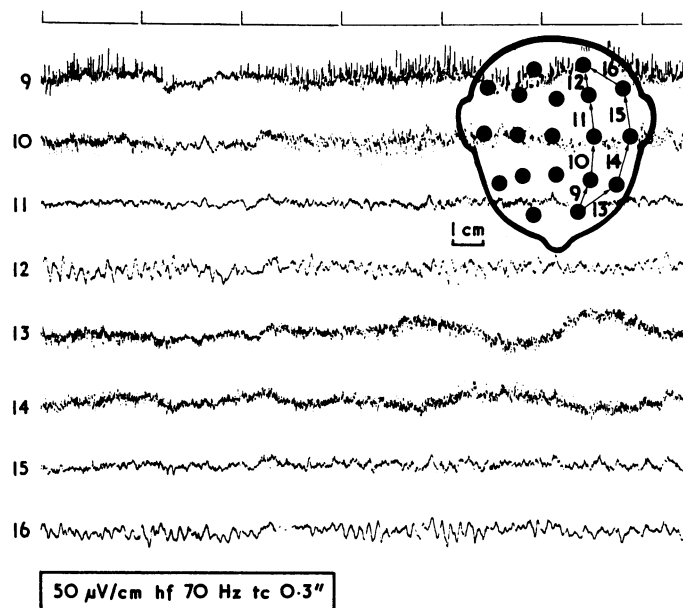


FIG. 2—Abnormal E.E.G. showing noticeable theta activity.

theta activity in the absence of drowsiness, though with some alpha activity (fig. 2), or showed a dominant activity of low frequency or the presence of marked asymmetry (figs. 3 and 4)

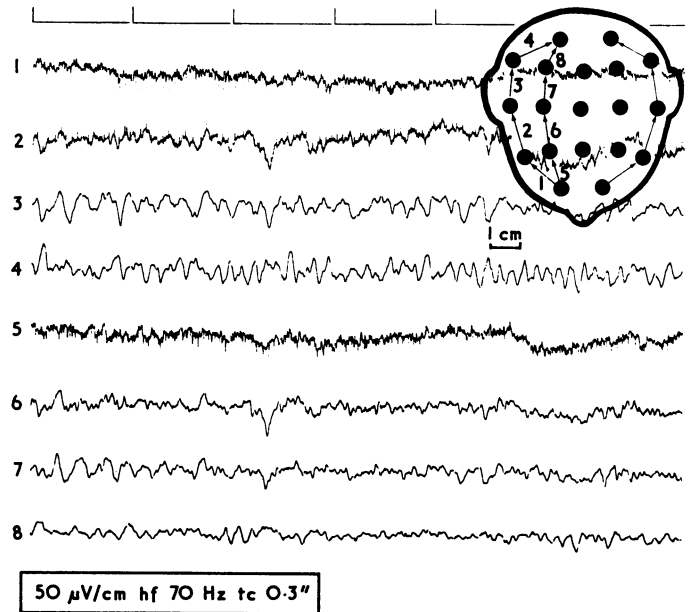


FIG. 3—Abnormal E.E.G. showing dominant activity of low frequency.

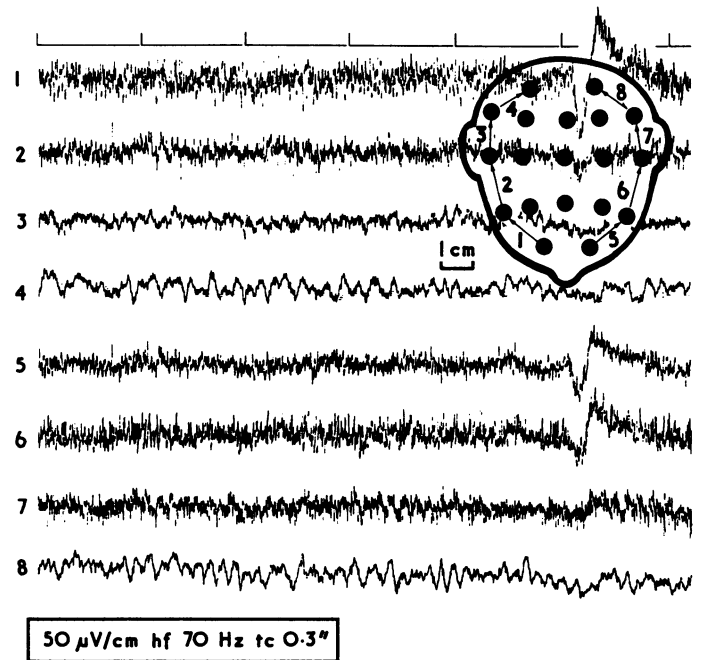


FIG. 4—Abnormal E.E.G. showing marked asymmetry.

or transient or complex activity of the type associated with epilepsy. No abnormal response to three minutes of hyperventilation occurred in any of the subjects.

In addition to the E.E.G. recordings the subjects underwent a standardized psychiatric interview and were given a shortened form of the Wechsler Adult Intelligence Scale (W.A.I.S.) (Wechsler, 1955).

In all cases assessments of the E.E.G. findings and psychiatric interviews were done "blind"—that is, each assessment was

made without knowledge of the results of the other—and the electroencephalographer did not know whether the patient undergoing E.E.G. was a baby batterer or a spouse.

Results

Of the 35 parents who battered their children 8 (23%) had demonstrably abnormal E.E.G.s. In the case of the other 27 batterers and 15 of their spouses no E.E.G. abnormality was shown. The one remaining spouse who was known to have epilepsy but was not responsible for battering the baby had a characteristically abnormal E.E.G.

On further investigation the eight batterers with abnormal E.E.G.s were generally found to be of low intelligence though no lower on average than were those subjects in whom no E.E.G. abnormality could be shown. Of the women tested those with an abnormal E.E.G. tended to score higher on performance subtests than did those with a normal E.E.G. (see table I). All eight subjects with abnormal E.E.G.s could be

TABLE I—Performance I.Q. and E.E.G. Findings

Performance I.Q. (W.A.I.S.)	E.E.G. Normal	E.E.G. Abnormal
Subnormal to borderline	8	1
Dull normal to average	4	5

Males are not included in this table since there was only one with an abnormal E.E.G.

TABLE II—Personality Diagnoses and E.E.G. Findings

Personality Diagnosis	E.E.G. Normal		E.E.G. Abnormal	
	Male	Female	Male	Female
Personality disorder (mild and moderate severity)	3	9	—	2
Aggressive psychopathy	6	3	1	5

defined according to the American Psychiatric Association (1952) classification as having a personality disorder (table II)—that is, without reference to the act of battering. They were also found to be persistent batterers—that is, to have battered one child more than once and sometimes more than one of their children.

Discussion

Because the numbers are on the small side only tentative conclusions can be drawn. Nevertheless, the prevalence of abnormal E.E.G. findings strongly suggests that some baby batterers at least are much more closely related to other groups committing acts of violence than they are to the general population. This is borne out also by the results of psychological testing, particularly of the group with abnormal E.E.G.s, which also showed a consistent variation from the normal population. It therefore seems clear that baby batterers are not a homogenous group about whom it is safe to generalize. Whereas in some

instances battering may be a response to unusual and excessive stress situations—though this needs further investigation—the presence of a definitely abnormal E.E.G. in almost one-quarter of the cases points to what may well be a separate subgroup to which special attention should be paid. This is further borne out by a demonstrable relation between personality diagnosis and abnormal E.E.G.s. Indeed five female batterers and one male batterer all with abnormal E.E.G.s could undoubtedly be classed not only as having a personality disorder but as aggressive psychopaths (Walton, 1973). The male subject also had a criminal record. The two other female patients exhibited a personality disorder though this was not primarily of an aggressive type.

Conclusion

The findings reported here suggest that it may be wrong, even dangerous so far as the children are concerned, to rely too heavily on seemingly facile explanations of why parents batter their children. There is an over-ready tendency to assume that battering parents have experienced inadequate mothering in their own childhood and are therefore recreating in their own child-rearing practices the same maltreatment they themselves experienced as children (Steele and Pollock, 1968). This should be avoided. Retrospective assumptions of this kind are attractive in that they are difficult to disprove. They are also, however, equally difficult to prove. To assume that all such parents or even the great majority can be adequately treated by “a transfusion of mothering”, as has been suggested (Court and Kerr, 1971), may not be altogether justified and in the light of our own findings may even be dangerous to the children concerned.

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