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'Chest epilepsy' in a child

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Summary: Pain is a most unusual manifestation of epilepsy, and it is rarer still for chest pain to be the primary manifestation of a seizure disorder. We report here a 6 year old boy with epileptic chest pain – 'chest epilepsy' – an entity not previously described in children.

Introduction

Chest pain is frequent in children.[1] It is usually benign in nature in contrast to adults, where it is often a manifestation of a serious underlying illness. Pain is a most unusual manifestation of epilepsy and it is rarer still for chest pain to be the primary manifestation of a seizure disorder.[2] A 60 year old woman with chest pain which proved to be epileptic in nature was reported in 1987.[3] We report epileptic recurrent chest pain in a 6 year old boy, an entity hitherto unreported in children.

Case report

A 6 year old boy was referred with a history of recurrent paroxysms of severe non-radiating pain over the left hemithorax, though the child could not explain the exact site but pointed more to the anterior side. The episodes occurred 5–10 times a day, every day for 8 months. Each episode was associated with sweating, used to last for 10–15 min and subsided abruptly. He would cry because of the intense pain and even i.v. pentazocine failed to relieve the symptoms. There was no alteration in consciousness before, during or after these episodes. There was no history of any preceding febrile illness or any relation of chest pain to exertion or deep breathing.

Physical examination revealed no abnormality. We observed that during the episode of chest pain, in addition to the features already described, the child would clutch the left side of the chest or rub his hands over it. No abnormal movements of the chest muscles were seen. Blood counts, electrocardiogram, X-ray of chest and spine, echocardiogram and ultrasound of the abdomen were normal. The urine for porphobilinogen was negative on three occasions and detailed psychiatric examination was normal.

In view of the paroxysmal nature of attacks and associated sweating, an electroencephalogram (EEG) was done. The interictal record revealed bihemispherical bursts of spikes, spike and wave and sharp wave forms (Figure 1). A diagnosis of a simple partial seizure 'chest epilepsy' was made. Treatment was instituted with carbamazepine 10 mg/kg/day in divided doses. The frequency of attacks decreased and the dose was gradually increased to 20 mg/kg/day. There was a dramatic improvement with complete cessation of attacks over the next 6 weeks. Repeat EEG done 9 months later (Figure 2) was normal. The patient continues to be asymptomatic on follow-up after one year.

Discussion

Musculoskeletal pain, cough, costochondritis, psychogenic and idiopathic causes account for most of

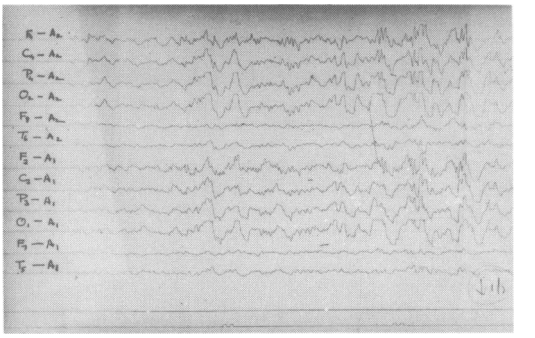

Figure 1 EEG prior to anticonvulsant therapy showing bihemispherical bursts of spikes, spike and wave and sharp wave forms.

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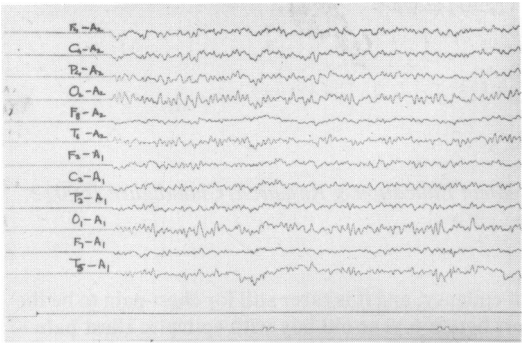

Figure 2 Normal EEG 9 months after anticonvulsant therapy.

the chest pain seen in children.[1,4] Epileptic chest pain is extremely rare and has not been described in children.[3,4]

In all large series of epilepsy reported there have been a small number of patients where pain was present either as an aura or an associated phenomenon with seizure activity.[2] In a review of 3,000 cases of epilepsy, pain was an associated feature in only 1% of the cases.[5] This pain has been described to be of three varieties: hemicorporal (unilateral), cephalic and abdominal (visceral and pneumogastric).[6] The pain has been postulated to be related to muscle contraction, extremity distortion due to increased muscle tone, vascular contraction and small muscle contraction in gastrointestinal tract and other areas. Rarely, epileptogenic activity arising from structures deep within the brain can produce pain as an isolated phenomenon as in the present case. There is only one published report in the English language where chest pain was a primary presentation of epilepsy. A 60 year old woman had a history of recurrent pain of the left chest wall. Placement of deep pain stimulating electrodes in periventricular grey matter reproduced chest pain which was relieved by intravenous diazepam.[3] In our case, the presence of paroxysms of chest pain associated with autonomic phenomenon such as profuse sweating restricted to left hemithorax and a normal psychiatric examination gave a clue to the epileptic nature of the chest pain.

Although autonomic disturbances have been reported in abdominal epilepsy, details have not been described.[7,8] We have not found any report of abdominal epilepsy associated with localized sweating.

We propose to set a diagnostic criteria for chest epilepsy: (1) paroxysmal chest pain; (2) exclusion of other chest wall and visceral pathology; (3) abnormal EEG tracing; and (4) response to anticonvulsant therapy. Unlike abdominal epilepsy, alteration of mental status may not be an invariable feature, the chest pain being a manifestation of simple partial seizures.

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