

# LEARNING OBJECTIVES

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## **When to suspect Epilepsy**

Children may present with epilepsy in a similar way to adults and it may be a fairly obvious diagnosis, however a substantial proportion may not present in the typical way. There are a few different examples which I witnessed during my time in epilepsy clinic which highlighted these less typical presentations. For example, a child may only present to the GP after educational problems are flagged at school. Teachers may have noticed periods of inattention leading to poor academic development and this could point to periods of absence seizures. A different presentation may be with a child who has had nocturnal unwitnessed seizures and only presents after a history of daytime lethargy – again something which may be picked up at school. And a final example is of a child with learning difficulties. Diagnosis of epilepsy in such a child may be particularly difficult due to communication barriers and confusion between stereotypical behaviours and seizure activity. I have realised that concerns raised both at school and from the child's parents are extremely good indicators in terms of making a diagnosis.

## **Evaluation of the first seizure**

Both children and adults who have been suspected to have had a seizure should have urgent referral to a specialist in epilepsy (as a general rule, febrile convulsions do not warrant referral). Treatment is not normally initiated until after a second epileptic seizure OR if there is a high probability of epilepsy. Things that indicate a high probability of epilepsy include neurological deficit, structural abnormalities evident on brain imaging or EEG analysis showing unequivocal epileptic activity.

A detailed history (including collateral history) is absolutely crucial and correct evaluation of a first seizure is dependent on it. There should be a wide differential on first presentation and all systems should be checked to rule out pathology such as cardiac arrhythmias, among others.

EEG is an important investigation modality. It is not normally performed until after the second epileptic seizure. Abnormalities are seen in 70% of cases if prompt EEG analysis is carried out (within 48 hours of event). If normal, a sleep-deprived EEG may be useful as it can detect epileptiform discharges in an additional 10-20% of cases. The important thing to note is that an EEG should be used to SUPPORT a diagnosis of epilepsy and in no way should it be used in isolation as a diagnostic tool.

Certain structural abnormalities cause particular epilepsy syndromes and so neuro imaging should be used to identify these if there is a clinical suspicion. MRI is the investigation of choice.

As mentioned earlier, the differential diagnosis net should spread wide and for this reason appropriate blood tests should be performed to identify potential causes.

There may be a place for neuropsychological assessment in those with educational difficulties. It may also be indicated if imaging identifies abnormalities in regions implicated in cognition, or if there has been cognitive decline in the patient.

In terms of management of a first seizure, early specialist involvement is crucial and the next most important aspect is patient and family education. Carers should be advised about recognising and being able to manage seizures and the first aid measures they can take themselves so that there is minimal harm to the child.

### **Management of febrile fits**

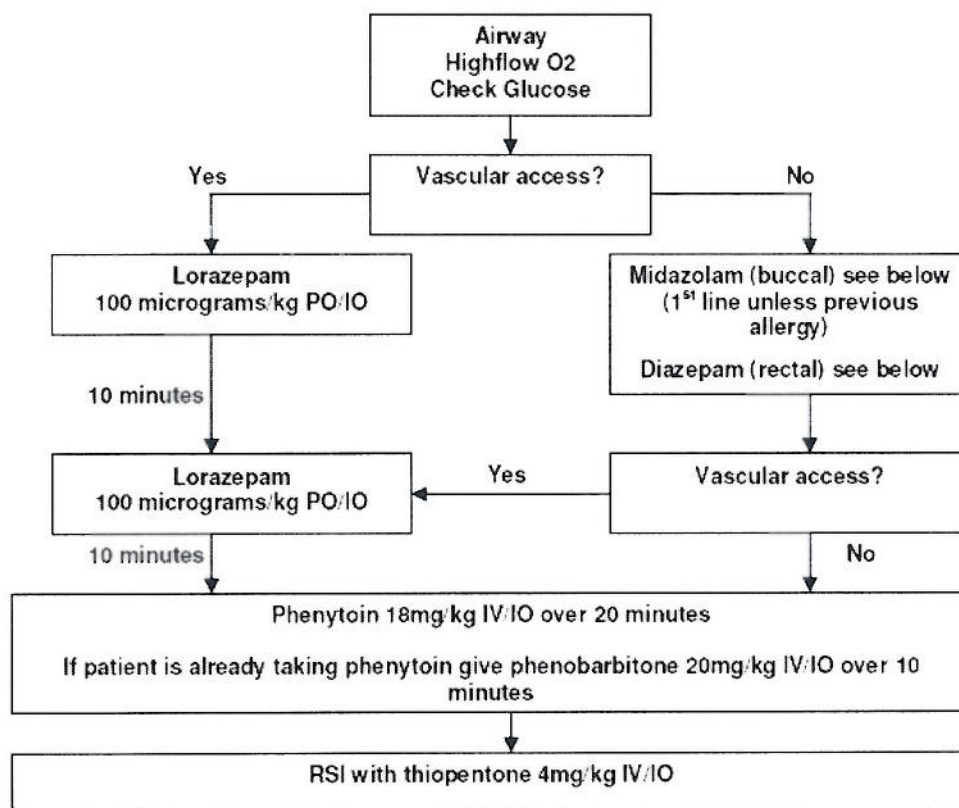
Febrile fits are seizures which occur in children aged between 6 months and five years which are associated with fever (in the absence of underlying CNS infection).

Emergency treatment:

- Recovery position & ABC
- Blood glucose measurement
- ?antipyretic (no clear evidence it prevents seizures)
- Seizure lasting >5mins → rectal diazepam (repeat after 5mins if required) OR single dose buccal midazolam
- IF meningococcal disease suspected, Benzylpenicillin or Cefotaxime should be given

## APLS guideline for status epilepticus

### APLS Status Epilepticus algorithm



#### Buccal midazolam doses

Neonate 300 microgram as a single dose

Child 1-6 months 300 micrograms/kg (max 2.5mg), repeated once if necessary

Child 6 months-1 year 2.5mg, repeated once if necessary

Child 1-5 years 5mg, repeated once if necessary

Child 5-10 years 7.5mg, repeated once if necessary

Child 10-18 years 10mg, repeated once if necessary

#### Diazepam rectal doses

Neonate 1.25-2.5mg repeated after 5 minutes if necessary

Child 1 month-2 years 5mg repeated after 5 minutes if necessary

Child 2-12 years 5-10mg repeated after 5 minutes if necessary

Child 12-18 years 10mg repeated after 5 minutes if necessary

### **Meeting children and their parents, taking history as well as assessing the psychosocial impact**

There were a few important learning points from my time spent at epilepsy clinic. The first is about the history of the presenting complaint. Although this is and should be important in most specialties, it is particularly pertinent in trying to make a focussed diagnosis in paediatric neurology. A good detailed history with collateral supporting evidence can be more helpful diagnostically than any investigation and so real care has to be taken to get an accurate account of the events surrounding an episode.

Another theme I found was the discussion between doctor and carer in terms of management plan of seizures. It was very much a dialogue with both parties coming to a joint decision regarding best therapy rather than the traditional didactic approach. Again, this is important in all aspects of medicine however I found it especially evident here.

In many of the cases I saw, there was a report or evidence of input from the child's school. This is really important because the majority of their time is spent at school and so some supporting evidence from them is invaluable in determining how the epilepsy is being controlled and what kind of affect it is having on the general development of the child.

### **Multidisciplinary Team**

As with any medical specialty, the role of the MDT is crucial. Some of the professionals involved in a child's care are listed here:

- Paediatric neurology consultant
- Epilepsy specialist nurse
- Community paediatrician
- GP
- Occupational therapist
- Child psychologist
- Child psychiatrist

As epilepsy is a chronic condition, management in the community is very important and so along with the hospital teams, the healthcare professionals in the community play a very important role in the continued care of a child. The overall aim is to have good control of seizures while being on the lowest dose of medication and being able to function at the highest level possible. By working together, the MDT can help achieve this so as to make sure the child has the best quality of life possible.

# Elective Reflection

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I am seriously considering a career in paediatrics and neurology is a certain area that also interests me. Therefore I thought it ideal to do an elective placement in paediatric neurology.

The majority of my time was spent in the epilepsy clinic. From my paediatric module in 4th year MBBS, I knew a little about epilepsy in children but I was interested in knowing more. During my time in the clinics I acquired the knowledge of how the diagnosis of epilepsy is made, and the way it is managed according to APLS guidelines.

One specific skill I wanted to develop was taking a paediatric history from both the patient and the parents and particularly explore the psychosocial impact on the family. I had ample opportunity to practice this skill and I believe I managed to really strengthen my ability.

The consultant taught me a great deal and my time with him was very valuable. I would definitely recommend this elective to other students interested in pursuing a career in paediatrics or neurology.

If I had more free time outside of my placement what I would have liked to do was read about the science behind certain areas. This is because neurology is a complex area where to fully understand a condition; it is extremely helpful to be familiar with the pathophysiology. This logical approach would help greatly with the diagnosis, investigation and management. Hence if I was giving advice to another student it would be to read around topics before arriving at the clinic. I found this really helped when faced with a patient for the first time.

This elective has further inspired me to pursue a career in paediatrics and will definitely help me with my paediatric placement during my junior doctor years.