Convulsion

PEDIATRICS

- **Differential Diagnosis:**
- -Febrile Convulsion
- -Epilepsy

  provoked fit
- unprovoked fit

  absence seizure
- breath-holding attack
- apparent life threatening event (BRUE)
- -Trauma
- -Meningitis/Encephalitis
- -Meningococcemia
- -Hypoglycemia

- **History :**
- **BEFORE, DURING, AFTER**
- Can you tell me what happened? Was he ok before? -
- -Describe the shaking? Whole body? One side? How long? Bite his tongue? Loose control of bowels or wet himself?
- -What happened afterwards? Drowsy? Irritable? Weakness? Moving all limbs ok?
- -Any fever? Cough? Runny nose? Diarrhea? N/V? Headaches? Rash? Wet nappies? Smell?
- Any trauma/injury? When was the last meal?-
- -Sick contacts? Immunisation?
- SADMA:-Problems in pregnancy? After birth? Growing well? Any issues or delays?
- -Family Hx of epilepsy or similar shaking with high fever?

- **Physical exam :**
- GA & Vitals sign
- Growth Charts: ht, wt
- Any Rash:
- Face and Neck : eye fundoscopy, neck stiffness, LAD?
- ENT: tonsils & ear drums mildly inflamed
- Chest: for checking Heart and Respiratory
- Abdomen: any tenderness? Bowel sound
- **Neurological Examination** : reflexes ,tone , moving limbs,
- Office tests: Urine Dipstick & BSL

- **Types**:
- Simple Febrile Convulsions→ generalised, tonic-clonic seizure, lasting <15mins, single
- Complex Febrile Convulsions →focal at onset, > 15mins, multiple, incomplete recovery in an hr
- Febrile Status Epilepticus→ Febrile convulsion lasting longer than 30mins

- **Risk factors of epilepsy:**
- 1.prolonged convulsion lasting greater than 15 minutes;
- 2. a focal element to the seizure;
- 3.a family history of epilepsy;
- 4.or abnormal neurological behaviour in the child prior to the seizure. (aura: nausea /vomiting headache /photophobia)
- Any of the above features would throw doubt on the diagnosis of simple febrile convulsion. None of these features is present in this child and hence the diagnosis is clearly most likely to be a simple febrile convulsion.

- # Febrile Convulsion

- **WHAT you need to cover:**
- Appropriate questioning and history-taking.
- Before, During , After
- Appropriate education and reassurance.
- Advice on preventive measures.

- Benjamin, a 14-month-old boy has been brought in to the hospital Emergency department by his parent following as episode at home the previous evening. His parent explains that he had been unwell all day with a high fever (40C), and while he was being cuddled, he was staring and did not respond to his name. They noted that his body twitched all over for several seconds and the whole episode lasted 60 seconds. He then went off to sleep and slept for the rest of the night.
- **Examination findings**
- Benjamin is alert and normal neurologically. He has a low-grade fever and signs of an upper respiratory tract infection.
- **TASKS**
- 1. Take any further history to ascertain the most likely cause for this episode.

- 2. Explain your diagnosis and subsequent management to the child's parent.

- **Differential Diagnosis**
- - Febrile Convulsion
- - Epilepsy
- - Trauma
- - Meningitis/Encephalitis
- - Meningococcemia
- - Hypoglycemia

- **Features of febrile convulsion:**
- 5F
- o **F**ive months – ?Five years(6m to 6 year)
- o Fever
- o Family history
- o Focal (NOT)
- o Frequent (NOT)

- ***HX:***
- I understand from the notes that you are worried about Benjamin because he had a twitching episode last night. Can you tell me more about it?
- ▪Okay, I understand that he also had been unwell all day with a high fever, he had a period of staring and unresponsiveness, then the twitching episode came which lasted for about a minute, but he seems to be better now.
- ▪Is this the first time this kind of episode happened? Has he ever had this episode without the fever? Did you notice any abnormal behavior before the twitching episode happened? Was it a generalized twitching episode? Did he have any injury to the head?
- **Well babay qs:**
- The mental state of the baby: has he been really irritable, or has been hard to wake up?
- b. Eating/Drinking: has he been eating and drinking fine?
- **Wet nappies:**
- Has he not been producing wet nappies for the last 8 hours? (very dehydrated), change in the number of wet nappies?

- **Rule out risk factors for epilepsy:**
- **BINDS:** a. **Birth history:**
- **Antenatal**: what was your age when you had your child? Did you have any infections or any medical condition during pregnancy? Did you take any drugs or medication, or had any trauma?
- **Delivery:**
- was he a term baby? What is the mode of delivery? What is the reason for the mode of delivery? Did he require resuscitation or did he cry immediately after birth?
- **Postpartum:**
- did he spend any time in a special nursery? Was the heel-prick test Done?
- **IMMUNISATION:**
- Is your child up todate with immunisation

Developmental history:

How do you think he is growing compared to kids of his age group? Are you concerned about his development when you compare him with kids of his age group?

Niutration: any pronlem with Niutrations?

- c. **Family history :**
- Do you have a family history of epilepsy? How about a family history of febrile convulsions?
- **PMHX, MEDICATION**

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- ▪ From the history, most likely the episode that happened last night is a **simple febrile convulsion.** Do you have an idea what this is? A febrile convulsion is **a fit or seizure caused by a fever**. They are caused by a sudden change in your child's body temperature and are usually associated with a fever above 38°C.
- Almost always, the fever is caused by a viral infection, which would usually manifest as an upper respiratory tract infection in adults, but in children, their brain is immature so it is susceptible to effects of high fever. This is a common reaction to fever in children, about 3% of the population have a seizure associated with fever. This condition commonly runs in families, as in your case wherein your sister had episodes of febrile convulsions in her childhood.
- During a febrile convulsion, your child will usually lose consciousness, their muscles may stiffen or jerk, and your child may go red or blue in the face. The convulsion may last for several minutes but when the movements stop, your child will regain consciousness but will probably remain sleepy or irritated afterwards.
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- Remember that during a convulsion, there is nothing you can do to make the convulsion stop. The most important thing is to **stay calm and don't panic**. Place your child on a soft surface, lying on his or her side or back.
- Do not restrain your child and do not put anything in their mouth, including your fingers.
- Try to watch exactly what happens, so that you can describe it to the doctor later and time how long the convulsion lasts. Do not put your child who is having a convulsion in the bath.
- After the first twitching episode, there is a 30% chance of recurrence, especially in the first 24 hours. Do not give your child any medication, except Panadol for the fever along with tepid sponging to bring the fever down.

- **REASURE:**
- Do not stress yourself, this is generally a benign condition and the convulsions do not cause brain damage nor cause an increased risk for subsequent epilepsy.
- **REDFLAGS:**
- However, if the convulsion lasts more than five minutes or your child does not wake up when the convulsion stops or if your child looks very sick when the convulsion stops, please see your GP immediately or go the ED. Do you have any questions at this point?

- **Provoked Fit**

- A 16-year-old boy was brought to your GP clinic after having a fit at school immediately following an injury at the playground. No relevant past medical and surgical history. His family including sisters are well. Complete examination after
- arrival was normal.
- Task
- a. Further history from mom
- b. Give most appropriate investigation to examiner
- c. Explain management in immediate future

- **History:**
- - Is the child hemodynamically stable or not?
- - Please tell me more about what happened? Exactly when did it happen? were there any witnesses? Did he collide with anything, something or someone? Do you think he tripped and fell? Did he land on his head? Any trauma to the head? Before the fit, was he conscious? Breathing on his own? Was he confused? Any headache, N/V? Did anyone describe the fit to you? Was it over the whole body? Or just one side of the body? Do you think the fit started in one part of the body and later involved the whole body **(Jacksonian March)**? During the fit, did he wet himself? Or did he pass stools? Do you think he bit his tongue/lips? After the fit, did he recover himself? Was he confused?
- Was he communicating with anyone? Is this the first time he had a fit? Any family history of epilepsy?
- Regarding his health, did he have recent flu-like illness? Any recent change to his weight, or appetite?
- Any problem with waterworks? Is he sleeping well? (sleep deprivation, stimulus for epilepsy) Are you aware if he might be using some drugs, alcohol, or if he smokes? Do you think he is under a lot of stress at home, or in school? How is his school performance?
- Any other concerns regarding his growth and development?

- **Examiner Investigations:**

  Guideline: CT scan/MRI is done as first line investigation

- **FBE, CRP (to r/o infection), LFTs, KFTs (r/o liver/kidney), BSL (diabetes), urine dipstick(infection), chest x ray and plain x ray of skull, drug screening with mom's consent. Later on, CT scan might be needed.**

- **Management:**
- - At the moment, all our examination is normal. It seems like there is nothing structurally wrong with his brain that might have caused this kind of seizure because
- there is no family history and seizure was brought on by possible trauma to the head. I'm **not concerned about epilepsy**. However, if he develop more fits,
- we will do an EEG to rule out epilepsy. Most likely, this was **a provoked fit** that is **commonly seen after head injury**. However, there are **certain metabolic as well as infectious causes of seizures** that we need to rule out, that is why I am sending him to the hospital where he will be kept under observation for a few hours in ED.
- They will do some tests in the blood and urine as well as some imaging to rule out any serious causes.

- There is a high chance that he might develop fit within the next 7 days. He will be observed by the specialist neurologist and if required, they might give him some sedatives. However, antiepileptic medications are usually not required in these cases.
- If he loses consciousness or with repeated fits or if the fits continue for more than 10 minutes, the specialist might start you on IV phenytoin.
- - I will liaise with the ED consultant about your child's condition and progress, please come back to me once he is discharged from the hospital.

- **Provoked fit**

- 14 y/o school boy has a fit immediately following an injury on the playground at school. He is brought to your GP clinic 45 minutes after the seizure. There was no relevant past history. He has 2 teenage sisters who are well. Relevant examinations were done and there were no abnormal findings
- **Your task is to:**
- 1.Take history from his mother
- 2.Indicate any investigations
- 3.Further management

- **Ddx cause of provoked fit:**
- **-trauma**
- **-tumor**
- **-infection (meningitis)**
- **-metabolic cause :hypoglycemia**
- **-Drug**

- **History:**
- Is the child hemodynamically stable or not?
- Please tell me more about what happened? Exactly when did it happen?is this the first time? Eye witness account?
- Did he collide with anything, something or someone? Do you think he tripped and fell? Did he land on his head? Any trauma to the head?
- **Before the fit**, was he conscious? Breathing on his own? Was he confused? Any headache, N/V?fever?
- Did anyone describe the **fit duration** to you? Was it over the whole body? Or just one side of the body? Do you think the fit started in one part of the body and later involved the whole body (Jacksonian March)?During the fit, did he wet himself? Or did he pass stools? Do you think he bit his tongue/lips?
- **After the fit**, did he recover himself? Was he confused? Was he communicating with anyone?
- Regarding his health, did he have recent flu-like illness? Any recent change to his weight, or appetite? Any problem with waterworks? Is he sleeping well? (sleep deprivation, stimulus for epilepsy)

- **SADMA :**
- Are you aware if he might be using some drugs, alcohol, or if he smokes?
- Headss assessment :Do you think he is under a lot of stress at home, or in school? How is his school performance? Any other concerns regarding his growth and development?
- Past medical surgical history
- Fhx of epilepsy

- **Investigation:**
- FBE, CRP (to r/ o infection),
- LFTs,
- RFTs (r/o liver/kidney),
- BSL (juvenile diabetes),
- urine dipstick (infection),
- chest xray and plain xray of skull
- drug screening with mom's consent
- Later on, CT scan or MRI might be needed (discuss with paeds)

- **Management :**
- What your son had right now is sth we **call Provoked Fit**. It happens to ppl who do not have epilepsy and is commonly seen after head injury, infection, metabolic causes, abnormal bld sugar, drug overdose etc. However we need to rule these things out & he needs to be observed & evaluated in the ED for a few hours.
- At the moment, all our examination is normal. It seems like there is nothing structurally wrong with his brain that might have caused this kind of seizure because there is no family history and seizure was brought on by possible trauma to the head.? I am not concerned about Epilepsy.
- However, should he develop more fits, we will do an EEG (NOT AT THIS STAGE).
- At the hospital they will do some tests in the blood and urine as well as some imaging to rule out any serious causes. There is a high chance that he might develop fit within the next 7 days.

- He will be observed by the specialist neurologist and if required, they might give him some sedatives.
- However, antiepileptic medications are usually not required in these cases. If he loses consciousness or with repeated fits or if the fits continue for more than 1O minutes, the specialist might start you on IV phenytoin.
- I will talk with the ED consultant about your child's conditionn and progress, please come back to me
- once he is discharged from the hospital.

- **Absence Seizure**

- A 9-year-old boy is in your GP clinic, brought by his step mother, with complaint of staring blankly for a few seconds for
- the last 3months
- **Task**
- a. Take history from the mother
- b. Ask for physical examination findings from the examiner
- c. Discuss the diagnosis and further management plan to the mother

- History
- - Anything happened before or during the activity? Any shaking/ twitching/ jerkey movement/tongue bite/loss of urine or bowel. Did he have any injury, infection
- (meningitis)? Does he have any headaches? Any neurological deficits? Any weakness or numbness of the limbs? Any problem with vision or hearing?
- **- BINDS:**
- Any problem during the birth? Any trauma/resuscitation/medications? Growth charts.
- Feeding and general health all is good. What is the home situation? School situation (His school performance has been affected). How is the financial
- situation? How are you getting along with him ("She is his step mother.")? Is he taking any medication? Any allergies? Past history of epilepsy? Febrile
- convulsion? Family history of epilepsy?

- Physical Examination: **Nothing is positive.**
- - GA, Growth chart,
- V/S,
- Neurological deficits, rest of the exam.
- - Hyperventilation can provoke the seizure episode. Ask
- the examiner.

- **Management:**
- - Most likely the condition he has is **Absence seizure** the cause is not found but can have a genetic predisposition. This is caused by abnormal electrical discharges in nerve cells of brain. I am going to refer
- you to the specialist. He is going to do EEG
- (Electroencephalography)
- This is a non-invasive procedure which involves placing the electrodes and measuring the electrical activity of the brain
- - Medications: Sodium Valproate
- Advice the mother: Be cautious if he is bathing/ swimming/ driving. Do not close to the fire or any other dangerous activity. Closely monitor the child. If they have generalized fits: don't stop the fit, don't put things in the child's mouth. Put the child on his side. Immediately come back to the ED if it prolong more than 10mins. I will inform the teacher also.

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- **ABSENCE SEIZURE**

- 7 yo child has been brought to your GP clinic by his dad for evaluation of concerns about dropping school performance & frequent day dreaming.
- **Task :**
- **HX**
- **DISCUSS your dx, mx**

- **DDx:**
- -absence seizure, -
- -provoked fit,
- -head injury,
- -epilepsy
- CF
- Sleep Apnea
- Child Abuse
- Hearing problem Vision problem

- **History :**
- -Open ended Q:
- Can you tell what you mean by day dreaming?(While playing he suddenly stops and stares for a few seconds and he can not remember anything. After that, he is fine and resumes activity
- -Hopi :is this the first time ?how often does your child have these episodes?does it happen at school or home or both? When did you first noticed these episodes?
- -Befor episode :did your child have any headache nausea vomiting fever ?
- -during the episode: has he had any jerky movements of the body? tongue bite?wet himself ?up rolling the eyes ?how long does it last?
- -after the episode: does he recover soon ?does he feel drowsy? does he remember what happened? how often after the episode he resume the activity?

- DDX Q :
- Any head injury -
- -Any fit due to high temperature when he was young?
- -ever had meningitis?
- -any generalized shaking or fit?
- -Any family history of epilepsy?
- -Any hearing or vision problem ?
- **BINDSMA :**
- -Birth history: Any problem during pregnancy, was it a term or preterm delivery ? was your delivery uneventful? did your child spend any time in NICU?
- -Immunisation , -Nutrition
- -Developmental :do you have any concern regarding your child development?
- -**SOCIAL HISTORY:**how is your home situation?are you the biological parents of child?how is the situation at school?is there any stress at school?any chance of bullying?anything new happened at school?(new teacher ,new activity)
- -Medication /Allergy ,PMHX

- Management:
- Explanation: From the Hx, it looks like your son has a condition called **Absence Seizure.**
- It is a type of epilepsy , common in children from 4 years to puberty. Child suddenly stops activity ,become unresponsive and stares blankly becoming motionless. May have twitching of the muscle of face, finger and eyelid. May also have chewing or lips smacking. Lasts for 5-30 seconds.
- Good news is that most of the children grow out of it by the time they reach puberty. Outcome is good with treatment
- Sometimes can lead to generalised seizure in adulthood (5%).
- Need to confirm the diagnosis will order investigation & refer to a specialist.
- **-Investigation :**
- Ix**: EEG is confirmatory test**. It show a specific 3 Hz spike wave pattern. Usually hyperventilation or sleep deprivation can provoke these type of seizures.
- The EEG records the electrical impulses from the brain. Special stickers are put on parts of the scalp which are connected to the EEG machine which amplifies the tiny electrical impulses given off by the brain and records their pattern on paper or a computer. The test is painless.
- Also need to do some **basic test like: FBE, BSL, U & E (sodium)**.
- Specialist may also consider ordering a CT scan/MRI.

- **Treatment :**
- Tx: Once the Dx is confirmed, he will be put on medication. The first line medication is Ethosuximide or Sodium valproate, the specialist will decide.
- **S/E of Ethosuximide is nausea**, vomiting, ataxia, diarrhoea, and headache.
- **S/E of Sodium valproate** →hepatotoxic. Need to monitor LFTs regularly.
- He needs to take the medication regularly.
- He will be follow up by GP and the specialist.
- Advice:Be cautious if he is bathing/ swimming/ driving.
- Try giving him showers instead of baths
- Never let him swim alone/unsupervised , Dont let these children be close to fire keep them safe from harm. If they have generalised fits: dont stop the fit , dont put thing in the child's mouth.Put the child on his side. Immediatly come back to the ED if it prologe more than 10 min. Closly monitor the child and advise carer or teachers of epilepsy MX plan after discussion with Dr.Inform Teachers and school

- **Febrile Convulsion**

- **Case:** You are working as an HMO in a metropolitan ED. The
- nurse asked you to see a 3-year-old boy who is in a cubicle with his mother. The nurse hands you the triage sheet saying “3 year old presents with ambulance after having seizure at home”.
- Task:
- a. History
- b. Physical examination
- c. Diagnosis and Differential diagnosis
- d. Management and prognosis
- e. Counsel mother

- **Differential Diagnosis**
- - Febrile Convulsion
- - Epilepsy
- - Trauma
- - Meningitis/Encephalitis
- - Meningococcemia
- - Hypoglycemia

- **Features of febrile convulsion:**
- 5F
- o **F**ive months – ?Five years(6m to 6 year)
- o Fever
- o Family history
- o Focal (NOT)
- o Frequent (NOT)

- **History:**
- - What happened before the seizure? Fever? Sick? Rash? Headache? Vomiting? Diarrhea? URTI? Sore throat? Dysuria? LOC?
- - During seizure: duration? Focal or general? Bowel and bladder control? Tongue bite?
- - After seizures: drowsy/slept all day
- **- BINDS**
- - FHx of seizures/epilepsy,PMHX
- **Physical examination**
- - General appearance and growth chart , Rash and neck stiffness
- - Vital signs and growth chart
- _ ENT
- - Chest and heart
- - Abdomen
- - Neurologic examination, office test

- **HX**
- (watching cartoons on TV and suddenly started shaking all over his body, lasted <1 minute, was fine after that, did not wet himself, flu for the last days with temperature 38C; husband with history of seizures)
- **Physical examination**
- (looks happy and interactive,
- vital signs normal except T:38.2, chest and heart normal, soft, nontender,

- what your child has just had is sth we call **febrile convulsion.** Sometimes children have a high fever in response to a viral infection. Their developing brains are susceptible to changes in temp & respond with a fit. Their developing brins are suscetible to changes in temp& respond with a fit.The good news is that although this fit seems very scary it dosen't cause any harm to child or brain.Very common in children 6mo to 6yo with high fevers. **3%** children in gen population have it. There is no increased risk of epilepsy.
- **Cause:**
- Sometimes there is a bit of FHx of febrile fits. Also if a child has a febrile fit once there is 30% chance of it happening again.(50% if <1yo)
- I would like **to reassure** you that I have looked for & ruled out all sinister causes. **This is not epilepsy**, not an inc in risk of epilepsy or causes any permanent brain damage.
- Usually we do not do any investigations for a simple febrile convulsion like your child had.

- **Advice:**

Stay calm, don’t panic.

- o Place the child on his or her side, chest down, with head turned to
- one side.
- o Never lie a fitting child or unconscious child on his or her back,
- o Do not force anything into the child’s mouth, Undress child to their singlet and underpants to keep them cool, Obtain medical help as soon as possible.
- Ring or go to your local doctor or to your nearest hospital. Even if the fit stops, have your child checked Ring ambulance if seizure lasts >5 minutes
- **How to prevent another episode:** undress the child down to singlet and underpants, keep the child cool and give fluids and paracetamol mixture

- **When to call ambulance:**
- The convulsion lasts >5mins
- Your child does not wake up when the convulsion stops.
- If your child looks very sick when the convulsion stops.
- If the convulsion stops in less than five minutes:
- You should see your family doctor as soon as possible.
- If your child was very unwell before the convulsion then you should take them to see a doctor immediately.
- You can drive them in your own car but make sure there are 2 ppl, one to drive & one to look after child in case of another convulsion

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- **Breath-holding attack /**

- You are a GP and a 2-year-old boy Charles was brought to you by his father because an hour ago, the child had **a finger jammed by the door** then he stopped breathing and started twitching. Father is concerned. about epilepsy.

- Task:
- RELEVANT HX
- PEFE
- DX AND MX

- -Head Trauma/-Acquired Brain Injury
- -Hypoglycemia
- Electrolyte Imbalance
- -Febrile Convulsion
- Epilepsy
- **ANEMIA as imp organic cause of behavioral problem especially breath hold attack**
- **Behavioral Disorders : like**
- Breath holding Attack
- Head banging
- Domestic violence/child abouse
- Overdose drug

- **HX**
- **Haemodynamically Stable or Not** : **V/S** from the examiner ? Offer painkiller Panadol if not allergic .
- **-Open ended Q:** I Can see that you are in a stressful situation but please dont worry now your child is stable and her condition is under the control .
- Would you please tell me more about what happened?was it the 1st time ?if any other was there the same?
- **What happened ? (INJURY)+ STOP BREATHING**
- **Before** The episode (injury and stop breathing),
- During
- After qs
- Fever, Rash, vomiting, lose bowel motion,
- Any viral infection recently

- Any head injury
- Does he show any dramatic reactions such as headbanging? screaming ?kicking to any similar painful condition or any frustration ? OR Have you noticed that he cries excessively when he needs something? Does he accept “NO” ?easily?r/o Behavioral problem such as temper and head banging and spell).
- Has your child been diagnosed with Anemia?any bleeding any part of the body? runny stool with blood ?any family member on special die?
- Social HX /Home Situation and Child Care or School Situation
- BINDS
- FHX PMHX

- **Positive History** :
- Whilst getting into the family car, Charles got his **right hand caught in the car door** which the wind blew towards the closed position. He immediately cried but then he held his breath for a **few seconds**, became unconscious and turned blue. There seemed to be some twitching of his hands perhaps for a few seconds, but no generalized jerky movements of fits (his cousin has poorly controlled epilepsy), no
- incontinence, did not bite his tongue. The episode lasted probably for 5-10 seconds. He regained his consciousness spontaneously and started to breath normally again but he has been a bit miserable since. It was quite a frightening experience for everybody. However, he was not very sleepy after the event, just a bit miserable./ BINDS HX : Normal Planned Pregnancy and Delivery, Normal development and all immunizations./single boy happy family live with parents / Fhx except for epilepsy in a cousin unremarkable.
- PEFE : FINGER HAS SWELLING AND BLUISH DISCOLORATION . Every thing normal

- MX
- Based on history and physical examination most likely your child has a condition which is called
- **breath-holding attack**.Have you heared about this ?
- **Condition** :Your child had a **Breath-Holding Attack**. It is a behavioral disorder
- **Commonality** : It is a common condition in this age group.
- **Causes /RF** It can be precipitated by pain, emotion or frustration.
- **Clinical Features:** stop breath for a few second based on the types of tantrum the coloure changes to pale or blue one then twitching of body then few seconds loc
- **Complication** :that is completely harmless/ never lead to epilepsy. Usually, it **disappears by 3 years**.
- **Reassurance** The attacks are self limited, not harmful and not associated with epilepsy or intellectual disability.

- ADVISE:
- First **ignore what is ignorable** and not bribe the child not pay more attention and **PUT HIM LATERAL POSITION .**
- then use distraction methods so **distract what is distractable** / Distract the child. It may be possible to interrupt a spell by placing a cold rag on the child's face at onset. Try to **avoid what is avoidable** so avoid the triggers known to frustrate the child or painful stimuli to precipitate a tantrum.
- -**Iron supplementation in anaemic or iron-deficient patients** But BHS has been found to respond to iron therapy, even in the absence of anemia (but exclude iron deficiency anaemia!. Diet.) and to treatment for obstructive sleep apnea (when present).
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