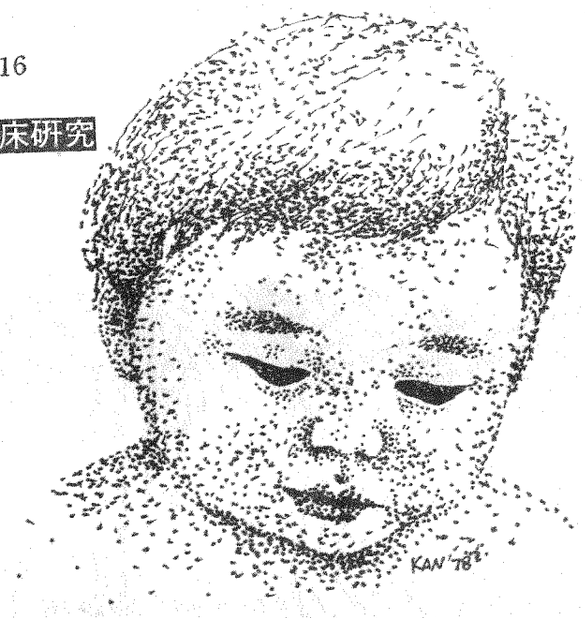

兒科

小教室

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TREATMENT OF CONVULSIONS IN CHILDREN

MOST CONVULSIONS ARE easy controlled by medications and have no immediate risk of life but uncontrolled seizures may threat life, because of complication of hypoxic brain tissue, acidosis, accidents, aspiration, fractures.

A).Supportive treatment:

a).Patent Airway-
suction--nose;mouth, extend the neck, on flank position or semi-prone position, use airway or padded tongue depressor,prevent tongue bite, ALWAYS GIVE OXYGEN WITH HUMIDITY.

b).Start I.V. --keep vein open with 5% glucose water solution.

c).If patient has distention of stomach or eats food within 3 to 4 hrs, pass a nasogastric tube --prevent aspiration Pneumonia.

d).Anti-convulsants-
NEVER GIVE I.M. BEFORE THE SEIZURES STOP.Valium (short acting drug):

1). Valium (short acting drug):
IOmg I.V.slowly-usually Img per minute. stop medication as soon as the seizures controlled.
the maximal dose: less than 1 year old--- 2to 3 mgs.
1 to 6 years old ---5 mgs.
more than 6 years ---10 mgs.
may repeat ONE time if no response in 10 minutes.
if seizures stop,give phenobarbital 3-5 mg/kg I.M.stat.
Valium wears off very fast, no further medication will have the seizures return. Valium may depress Respiration,Intubation equipment should be available,

2).If the above 2 doses of valium do not stop the seizures, give Dilantin 4mg/kg I.V. very slowly and monitor E.K.G.

3).If 1). and 2). are not effective, call Anesthesiologist for general Anesthesia.

4).Luke warm water bath, spong and Aspirine Suppository for febrile victim.NEVER USE ALCOHOL SPONGE BECAUSE TOO MUCH ABSORPTION FROM SKIN MAY CAUSE POISON OR DEATH. BEFORE THE L.P. THE POSSIBILITY OF BRAIN TUMOR WITH INCREASED INTRACRAINAL PRESSURE MUST BE RULE OUT. FUNDI EXAM.SHOULD BE INCLUDED.

B).Long term medication
The best medication is phenobarbital + Dilantin by mouth.
routine C.B.C.(complete Blood count) one in every 6 months is acceptable.
The best dosage is the minimal which could work right to keep patient from seizures

c).Work-up :
More than a half of seizure cases seen in Emergency Rooms are failure of regular medication. and"benign", "simple", "never return" febrile seizures. but remember! miss one case of bacterial meningitis in your life is too much.

I). Symptomatic

a). fever and infections:

* Lumbar puncture-- must be done in first febrile convulsion, ill-looking,unknown afebrile seizures,neonatal seizures, shunting kids.(post-hydrocephalus operation)
early recognition is vital for the prognosis. meningeal signs, Cloudy,bacterial,low sugar in C.S.F. are the strong suggestions of bacterial infection.
* Cultures--blood,urine,(prefer suprapubic tap) nose,throat,ears, CSF.
* one bacteria found in CSF Gram Stain is enough to said G+ or G- Meningitis.(Ampicilline 200-400 mg/kg/day I.V. divided in 4.6 doses + kanamycin 50 mg/kg/d IM divided in 2 doses or gentamycin I.M. 5-6 mg/kg/d divided in 2-3 doses.
* Toxic (acute ill-looking) child with or without petechie,rash may tell you the possibility of sepsis
* Shortness of breathing, bad coughs,cyanosis,pale,rales,rhonchi, chest x-ray are the evidence of pneumonia.
* swelling,redness,tenderness and pain in an area with or without x ray finding ---osteomylitis
* Shigellosis,typhoid are the cause of seizures in diarrhea sufferers --toxic substance,bacteremia.
Mosr of Seizures dur to diarrhea or dehydration are hyponatremia, hypernatremia.
* Brain abscess,otits media.(less than 3 months old kids who has positive middle ear infection should have a L.P. because their meninges are so vulnerable.) measles,herpes,Varicella.etc.

b).Afebrile

check).Blood glucose,Calcium,Sodium, Potassium,Mg.,Ph.,CO2,BUN, Lead,VDRL,Urinalysis,SKULL X-ray E.E.G.,Brain Scan, Pneumato encephalogram.

I).Metabolic:

* Hypoglycemia--Diabetic mellitus, newborn of diabetic mother premature newborns.Glycogen storage disease. Islet tumor of pancreas.

Rx:"2-4" of 20% glucose I.V.ib not effective, glucagon & diazoxide may be used.
Hypocalcemia--premature newborns, Rickets,maternal hyperparathyroidism, hyperventilation,post-acidotic tetany. Rx: 10% Ca. gluconate 3-6 I.V. or more. i6 HEART Rate stop immediatedly.
Pyridoxine deficiency or dependency-Rx: 100 mg V6 parenterally.
Malple syrups urine disease
Amininoacidurias
P.K.U.

II).Chemical intoxication:
head,Arsenic,Aspirin(hypoglycemia + hyperpyrexia),parathion,DDT

and morphine etc.

III).Cerebral lesions:
head injury,hemorrage,neonatal asphyxia,kernicterus,hydrocephalus Sturge-Weber,A-Vmalformations,tuber sclerosis,syphilis,post-CNS infections,post-immunization,toxoplasmosis and TUMOR.

PRACTICALLY no matter what cause the seizures,the steps of treatment are:
* I).Valium. II).repeat Valium. III). Dilantin.IV).20%glucose + 10% Ca. Gluconate V).Pyridoxine.(newborn only) VI).Sodium Bicarb. VII).variable
* Afebrile patients SHOULD put on Anti Cmvulsants. febrile patients ℃ alert, active, no distress conditions (most fevrile convalsions case) the medication for "prevention" of further Convulsion is Controversial.

§小實習：

一個十五個月的男孩，被慌張，哭號著的母親抱來急診室，「主訴」：小兒痙攣，發高燒，不省人事有十多分鐘。「病歷」是十天前曾去給開業醫診療，當時主訴，流鼻水，咳嗽，感冒。體溫 39°C，食慾大減。醫師告訴小兒的母親；是患小兒支氣管炎。並給予病人一星期的 Ampicilline 1250mg，一天口服四次，同時加上 aspirin。吃藥二天後，母親回憶地說，孩子的病稍好些了，但燒仍在 37.5°C～38.0°C 間。至三天前，病童開始有嘔吐，不飲食，不玩耍，整天哭鬧。母親打電話給醫師，醫師說是氣管炎加上腸胃性感冒，不要緊的，繼續吃藥就會好。

「理學檢查」：

Grandmal seizure 發作中，病童，倦怠無力，不省人事。肛溫 40° C，脈博 180／min，呼吸 20／min，血壓 90／60 mmHg（毫米水銀柱）。體重 13kg。體長 89 cm。頭圍 49 cm，皮膚正常，腦前囪仍開著。觸診無突出。瞳孔 isocoric；光照反射正常。兩邊耳膜正常，有黃色膿樣鼻涕流出。喉頭正常，頸部僵硬，無淋巴腺腫。兩側肺野呼吸音正常。心臟正常，腹部正常。脾臟 non-palpable，肝臟 2 fingers below costal margin，摸起來 Soft。生殖器正常男性。Babinski sign（±），Kernig's sign（±），Pitting edema（－）。

於理學檢查之前，給予病人氧氣，抽痰，側臥，掛 5％Glucose solution 後即刻打 Valium，給 3 mg 後，病童即停止痙攣。醫師馬上要病童入院，即刻作腰椎穿刺（L.P.），結果是 C.S.F：Cloudy；G（－）bacilli（＋）；WBC 2400（P.M.N 92％；Lymphocyte 8％）。RBC 40 個；Glucose 25 mg％，（血糖 102 mg％）；蛋白 108 mg％。

C.B.C.（complete blood count）：W.B.C. 21,000；P.M.N. 89％；Lympho 10％；Mono-1％，Hgb 13 gm％；Hct 40％。

Electrolytes：Na 140 meq/L，Cl 99 meq/L，K 4.1 meq/L，CO_2 21.2 mmHg。

Urinalysis：Normal；Special gravity 1.020。

E.E.G.：Normal.

討論：

A.診斷是什麼？

①C.S.F. 告訴你病童有 Pyogenic meningitis，你應如何去 rule out T.B. meningitis"。

②nuchal rigidity 的原因可有：meningitis，Pneumonia，Otitis media，Shigella enteritis，tonsillitis，Neck injury，head injury.

③你猜是那些細菌？Diplococcus pneumoniae，Hemophilus influenzae，Neisseria，Streptococcus，or Staphylococcus.

④約有 50％ Case，可由 blood culture 發現病原菌。

B.怎麼治療 Hemophilus influenza？

①Ampicilline 1250 mg i.v. push Q 6H.

②Chloramphenical 150 mg. i.v. push Q 6 H.（50～100 mg／kg／day）。

「治療過程」：

給 Ampicilline 及 Chloramphenical 後，第二天不再發燒，第三天的血液及 C.S.F 培養，均顯示 Hemophilus influenza，且對 Ampicilline 敏感。馬上停用 Chloramphenical，繼續 Ampicilline，而第二次的腰椎穿刺，無細菌發現，且糖分回復正常 70 mg％，只有少許 W.B.C. 及 R.B.C.。

二星期後，Ampicilline 改爲口服。當天下午孩子又發燒到 39° C，一位駐院醫師建議照一張 Skull-X-ray。因爲孩子頭圍，從入院後長了一公分。X-ray 醫師報告說有 Subdural effusion 之可能。經過再做 X-ray Study；並商請外科醫師，把左側 effusion 抽去，共得 30 c.c.，之後不再發燒，病童過了二天好日子，至第三天又發生 Grandmal seizure。第三次腰椎穿刺結果正常。主治醫師處方 Phenobarbital 20 mg，口服一日三次。Dilantin 250mg 口服一日三次，以後一切順利。

「預後」　良？不良？（不良）

智力障礙會發生？（可能性很高）

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