

Insert Tab A into Slot B....

A Primer for Children with Special Healthcare Needs

Objectives

- Define Children with Special Health Care Needs
- Name 3 conditions that may classify a child as having special needs
- Outline special considerations when managing a child with special needs.

CSHCN




EMSC Definition

- Children who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition
- Children who may also require health and related services beyond that required by children generally.

From Commentary in Pediatrics, Vol. 102, No. 1 July 1998

Devices!!!

- Feeding catheters
- Colostomies
- Pacemakers/AICD
- Glucometers
- Nebulizer machines
- Apnea monitors
- Tracheostomies
- Ventilators
- CPAP / BiPAP
- PICC/Medport/Central Lines
- CSF Shunts
- Baclofen Pumps
- Vagal Nerve Stimulators



EMS will see more CSHCN!!

- Managed care
 - Financially driven
- Societal view changes
 - "Family centered care"




Medical Advances

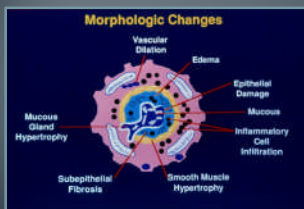
- Portable technology
- Better techniques, drugs

Apnea

- Definition:
 - An episode during which respirations cease for > 20 seconds or
 - A cessation in respirations < 20 seconds accompanied by cyanosis, bradycardia and / or limpness
- Many causes
 - Obstructive vs. central
- Seen in both premature and full-term infants

Airway Diseases

Asthma



- Pathophysiology
 - bronchospasm
 - inflammation of airways
 - excessive mucous production
 - obstructed airway
- Treatment
 - Aerosols
 - Peak Flows

Bronchopulmonary Dysplasia (BPD)



- Result of respiratory distress syndrome (RDS)
- RDS is caused by lack of surfactant in alveoli
- BPD is an obstructive lung disease
 - treated like asthma
 - may tire more easily than normal when in distress

* Artificial surfactant has decreased incidence

Tracheomalacia

- Characteristics
 - Less cartilage in airway
 - Weak tracheal walls
 - Frequent collapse of trachea on inspiration
- Medical management
 - May outgrow - symptomatic treatment
 - Surgery
 - Rarely requires a tracheostomy

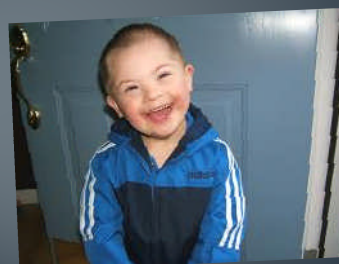
Pierre Robin Sequence



Prematurity

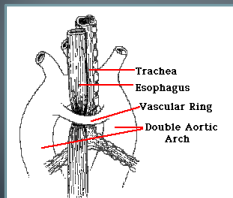


Down's Syndrome



Airway anomalies

Vascular rings



- ❖ Characteristics
 - abnormal vasculature
 - compresses trachea
 - impinges airflow
 - requires surgery
- ❖ Medical management
 - surgery
 - temporary tracheostomy

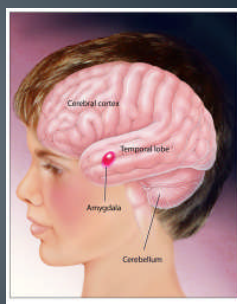
Autism



??Tolerate as a difference, not treat as a disorder??

Autism

- Disorder neural development
- Information processing w nerves/synapses
- Affects social interaction & communication
- Complex genetic basis
- Controversies w heavy metals, pesticides, vaccines



Autism = 3 Disorders

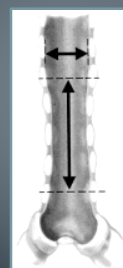
- Autism spectrum (ASD)
- Asperger Syndrome - cognitive & language impaired
- Pervasive Developmental Disorder- Not Otherwise Specified (PDD-NOS)

Autism cont

- 1-2/1000
- 4 times higher in males
- S/S before 2-3 years
- Gradual onset or "ok" then regression seen
- Restricted & repetitive behavior seen
- Behavioral/cognitive interventions help, but no cure



Subglottic Stenosis



- ❖ Etiology
 - Congenital
 - Acquired
 - post intubation or tracheostomy
 - tumor
 - infection
 - trauma
- ❖ Medical Management
 - Anti-inflammatory medications
 - Surgical repair
 - Tracheostomy

Congenital Heart Disease

♥ Acyanotic

- More common
- Some defects can lead to congestive heart failure
- Examples: ASD, VSD, aortic or pulmonary stenosis, AV Canal, coarctation of the aorta

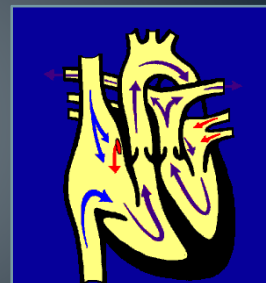


coarctation of the aorta

Congenital Heart Disease

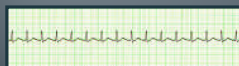
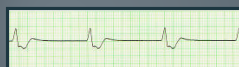
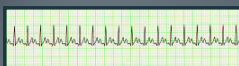
♥ Cyanotic

- Arterial and venous blood mix causing low O2 levels
- Palliative procedure done at birth
- Examples: tetralogy of fallot, hypoplastic left heart, transposition of the great arteries



transposition of the great arteries

Dysrhythmias



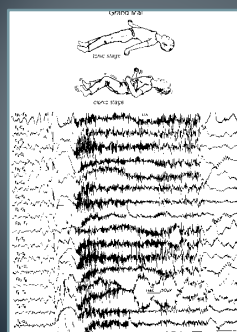
Causes

- cardiac anomalies
- OTC medications
- open heart surgery

Common Types

- supraventricular tachycardia
- bradycardia
- tachycardia
- ventricular tachycardia

Seizure Disorders



❖ Incidence

- One in 10 disabled children
- One in 200 normally healthy children

❖ Febrile seizures – NOT a disorder

- 5% of children
- Between 6 mo and 6 yrs of age
- ? Rapid rise in temperature
- No neurologic sequelae and no increased incidence of epilepsy

Non Febrile Seizures

- ❖ Epilepsy
- ❖ Post – traumatic
- ❖ Genetic or metabolic defect
- ❖ Congenital brain abnormality
- ❖ Tumor



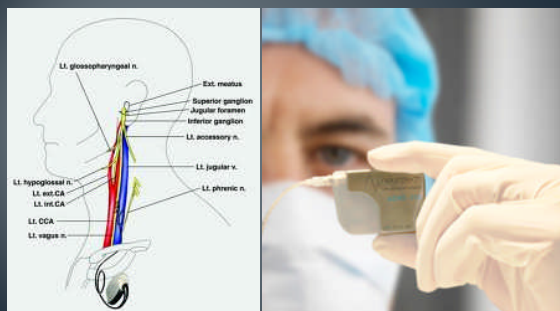
Generalized seizure activity	Partial seizure activity
Grand mal	•one area of brain involved
•clonic-tonic	•may progress to grand mal seizures
•duration < 5 minutes	Simple
Absence	•child is awake and aware
•vacant, blank look	Complex partial seizures
•may occur 100 times/day	•child is unconscious
Myoclonic	Psychomotor seizures
•infantile spasms	•repetitive fine motor actions
•difficult to control	

Seizure Mgmt

- Safe environment
- Position of comfort
- Airway support
- Check glucose
- Benzodiazepines: Diastat, Diazepam, Midazolam, Lorazepam
- Vagal Nerve Stimulator



Vagal Nerve Stimulator



Hydrocephalus

Inability of CSF to adequately drain from the ventricles.



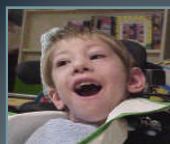
Causes

- Congenital anomaly
- Tumor
- Post head injury
- Post meningitis

Medical Management

- Cerebral spinal fluid shunt

Developmental Delay



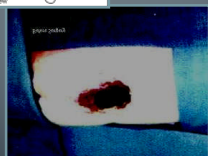
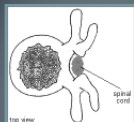
- Results from a prolonged illness or prematurity
- Have potential to "catch up"

Mental Retardation (MR)



- Non-progressive disorder
- Occurs in developmental years as a result of a prenatal problem, injury or disease
- IQ <70
- Unable to adapt to surroundings
- Requires special education and training

Meningocele or Myelomeningocele



Spinal Bifida

- incomplete closure of spinal column
- +/- paralysis (
- hydrocephalus (60-90%)
- delay in motor development
- loss of bladder function
- normal intelligence
- watch for latex allergies

Misc neurologic disorders

Spinal cord defects

- Etiology: Trauma, tumor, or congenital



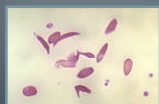
Traumatic brain injuries

- Incidence: 50,000 kids <14 years old are permanently disabled yearly
- Etiology: head injury, anoxia

Hematologic Disorders

Sickle Cell Disease (SCD)

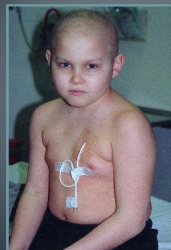
Inherited chronic, severe disease resulting from a disorder of the RBCs.



❖ Characteristics

- O₂ deprived red blood cells become sickle shaped
- Manifestations include
 - Vaso-occlusive crisis
 - Splenic sequestration
 - Aplastic crisis
 - Sepsis

Cancer



- Leukemia
 - Most common childhood cancer
 - Uncontrolled growth of blood cells
- General chemo complications
 - Low white blood cell count
 - Low platelet count
 - Vomiting
 - Weight loss

Hemophilia

An inherited disorder in which a factor needed for clotting is either low or missing.

• Incidence

- 15,000 in US (mostly males)
- 60% severe type
- 15% moderate type
- 25% mild type

Immunological diseases

HIV and AIDS

Incidence

- 1,667 new cases diagnosed in children < 12 years old (1999)
- Etiology
 - Immune deficiency of the T cells
 - Various stages
 - Transmitted via blood, semen, breast milk
 - Children are at high risk for bacterial infections

Diabetes Type I

Incidence

- ❖ 1 / 600 children affected

Etiology

- ❖ Starts in children or young adults
- ❖ Two types
 - immune-mediated
 - idiopathic type 1
- ❖ Acquiring diabetes type 1
 - inherited
 - self – allergy (or auto immune)
 - a virus or chemical damages the islet cells

Osteogenesis Imperfecta

Brittle bone disease

Incidence

- ❖ 20,000 – 50,000 people in the US

Etiology

- ❖ Genetic disorder of collagen synthesis
- ❖ 4 Types – severity & characteristics depend on type and vary greatly

Osteogenesis Imperfecta

Characteristics



- ❖ Severe growth retardation
- ❖ Head disproportionately large for body
- ❖ Appears younger than age
- ❖ Weak musculature
- ❖ Barrel chest/resp probs
- ❖ Easily fractures bones
- ❖ Loose joints
- ❖ Possible hearing loss

Muscular Dystrophy

Pathophysiology

- Flaw in muscle gene proteins
- Genetic muscle-wasting disease
- Generally inherited

Characteristics

- Affects motor skills
- Shortened lifespan
- Profoundly weak



Cerebral Palsy



Characteristics

- ❖ Damage to brain affecting muscle control and/or cognitive development
- ❖ Congenital or acquired
- ❖ 50% have seizure disorder
- ❖ 2/3 have mental impairment

CSHCN Home Routine Mgmt

- ❖ Individualized treatment plan
 - Child's vitals and responses
 - Daily / PRN medications and therapies
 - Emergency numbers including primary MD
- ❖ Medical identification jewelry
- ❖ Caregivers are KEY to success
- ❖ "To Go" bag

End of Life Issues

- ❖ Palliative Care
- ❖ DNR forms
 - Written physician order vs. state EMS protocol/law
- Will Call 911 even if well prepared.....

"Take Home Points"

- ❖ ABC's
- ❖ Listen to the parents/caregivers
- ❖ Vitals specific to child, not usual charts
- ❖ Check sugar and temperature
- ❖ D-O-P-E-D algorithm

