Pediatric Patients: Bringing Families to the Sleep Center

Laura A Linley RST/RPSGT

VP of Operations Advanced Sleep Management

AAST President

Date:
October 14-15, 2016
Location:
Marriott Louisville East

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OBJECTIVES

- Preparing a patient safe environment.
- Implementing policies related to parental oversight.

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PSG in Pediatric Patients

- Pediatric PSG is used to aid in the diagnosis of
  - Apnea (central and obstructive)
  - Obstructive Hypoventilation
  - Gastroesophageal Reflux
  - Seizures
  - Narcolepsy
  - Periodic Limb Movement Disorder

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Pediatric PSG Specific Policy

- These procedures are for testing children and adolescents <18 years of age. Special care must be taken when performing polysomnographic recordings (PSG) on children in regard to safety.

- All staff present during the evaluation must be certified in child and infant cardiopulmonary resuscitation.

- The testing room must be safe from all possible hazards including, but not limited to, choking, electrical shock, drowning, and falling hazards.

AAST Policy and Procedure Recommendations

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Staffing Patterns and Ratio Policy

- The maximum ratio of two (2) patients to one (1) technician/technologist under usual circumstances is in accordance with the AASM guidelines.
  - In the event that the sleep facility will be performing pediatric studies involving pediatric patients of < 3 years of age, the technologist to patient ratio should be 1:1
  - If a patient presents to the sleep facility and requires continuous medical attention (due to underlying medical problems), the technologist to patient ratio should be 1:1

AAST Policy and Procedure Recommendations

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General Considerations

- Ages of patients tested in the pediatric facility is determined by the facility medical director.
- Appropriate age-specific equipment must be utilized and staff trained to perform pediatric studies must perform polysomnographic evaluation for pediatric patients.
- One parent must remain in the facility with the pediatric patient. Parents may stay in their child's room during the sleep study. (NO siblings)
- A visit to the sleep facility prior to the scheduled procedure is encouraged to familiarize both the parent and child with the surroundings and procedures and to answer any questions prior to the PSG.

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Pediatric Considerations

- Specially Trained Technologists
- Specific Equipment
- Staffing Ratios
  - May require one-to-one, especially with infants, toddlers, and special needs patients
- Family Centered Approach

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Pediatric Considerations

- Video Capture of Entire Procedure
- Longer Shifts (12 hours)
- Scheduling Setup Time w/Normal Sleep Schedule
- Safe Infant Sleep Practices; policies on education

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Understanding of Pediatric Disorders

- Down Syndrome
- Autism
- Seizure Disorders
- Pulmonary Diseases
  - Asthma
  - Chronic lung disease related to prematurity

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Special Considerations

- Family Routine
- Special Needs
- Home Sleep Routine
  - Co-Sleeping
    - Typically this should not be permitted in the sleep center for infants > 12 months of age (greater risk for SIDS).
  - Bottle Propping
  - Over Bundling
  - Sleeping in Infant Seat

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Understanding Sleep Practices

- Technologist can teach parents about unsafe sleep practices and modifiable risk factors for the prevention of SIDS

- Safe Infant Sleep Recommendations
  - Back to Sleep; place infants supine for sleep
  - Avoidance of smoke exposure
  - Avoidance of parent-infant bed sharing
  - Avoidance of soft bedding
    - Blankets
    - Pillows
    - Bumper Pads
    - Portable Bed Rails (risk of entrapment and suffocation)

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Definitions

- **Sudden Infant Death Syndrome (SIDS)**: the sudden death of an infant under 1 year of age that remains unexplained after a thorough case investigation

- **Apparent Life-Threatening Event (ALTE)**

  An episode that is frightening to the observer and is characterized by some combination of apnea (central or occasionally obstructive), color change, marked change in muscle tone, choking or gagging.

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Alternative Safe Sleep Practices

- **Wearable** Blankets (care not to overheat)
- Room Sharing without Bed Sharing—keep close
- Supervised Awake Tummy Time
  - Facilitate development and
  - Minimize the occurrence of positional plagiocephaly (flat heads)
- Consider Offering **Pacifier**
  - Studies have reported a protective effect of pacifiers on the incidence of SIDS—even if the pacifier falls out of the infant's mouth
  - Pacifiers should not be hung around the neck or clipped to clothing
  - Do not prop pacifier with blankets or toy

http://pediatrics.aappublications.org/content/pediatrics/early/2011/10/12/peds.2011-2284.full.pdf

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Supine Sleeping Position

- Supine Sleeping Does **NOT** Increase the Risk:
  - Choking
  - Aspiration
  - GERD patients not at higher risk either
    - Exception is with infants with upper airway disorders for whom airway protective mechanisms are impaired
      - Type 3 or 4 laryngeal clefts
- Elevating the Head of the Bed
  - **Not** recommended as it is ineffective in reducing GI reflux
  - Might result in the infant sliding to the foot of the crib into a position that might compromise respiration

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Sleep Center Environment

- Developmentally Appropriate Education
  - Engage is playful activates-help defuse fear electrodes/leads
  - Get Down to the Childs Level
- Normal Childhood Anxieties
  - Fear of strangers
  - Separation anxiety
  - Fears not based on reality; monsters/ghosts
  - May be heightened in children with frequent hospitalizations
- Teenagers need assurance of privacy

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Desensitization

- Children who are expected to have difficulty tolerating the sleep study procedure may benefit
  - Sensory Integration Disorder
  - CPAP Titration

- Desensitization process should provide practice with all the sensations the child will be exposed to during the study
  - Pre-study tour
  - Family educated/information on entire process incl. follow up
  - Conduct session in one of the recording rooms
  - Start with the feet and work up feet to head
    - Head/face sensations are heighten

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Parents As A Team Member

- Consult with Parent, Primary Care Giver
- Favorite items brought from home
  - Blanket, bedtime book or stuffed animal
- Enlist Parent Help ; Use discernment
  - Rocking , gentle stroking may soothe infants
  - Watch video, coloring or reading book with Toddlers
  - Mirror setup on a doll may elevate the fear
  - Diaper changes
  - Feeding
  - Medications

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Child Friendly Environment

- Comforting Environment
- Access to Appropriate Furniture, toys and videos
- Private Rooms ; with enough space for one parent to stay
  - Bed or recliner for parent
- Soundproof Considerations
- Bed/Side Rails or Crib
- Handicap Accessible Bathroom

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Environmental Safety Hazards

- Sharp Objects; scissors, needles etc.
- Electrical Outlet Covers
- Equipment Out of Patients Reach
- Never Leave Child Unattended
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- Mindful of Choke Hazards
- Fall Risks
- Crash Cart Properly Equipped

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Safety Protocols

Emergency Situation	Response
Seizures with cardiac arrest	Turn patient on side in case of vomiting. Call Medical Director or Designate
New Onset Seizure ; without a history Seizure in a patient with a history of seizures Electrical Seizure without clinical correlate Clinical Seizure without electrical correlate	Access patient safety Document Notify Medical Director
Parasomnia mobility (sleep walking, active night terrors)	Maintain patient safety Call for assistance

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Case Study: 4 year old

- Brief History

- Emily is a petite 4 year old female. Last week, while at school her teacher described her as having a "convulsive seizure with incontinence". Afterwards she became very tired.

- The teacher also reported that Emily snores loudly during her naps.

- She had an EEG last week that showed abnormal temporal EEG activity. She is scheduled for more testing next week.

Case Study Provided by the AAST Problem Based Learning Workshop: Risk Management in the SDC.

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- Her Mother said she sleeps upstairs away from them and was not aware of any snoring. She said she does fall asleep on the couch during the day, and often in the car, but does not take scheduled naps at home, like she does at school. She does not notice any snoring when she is sleeping on the couch or in the car. Since the seizure, her mom has put a monitor in her bedroom, but has not heard snoring, or witnessed another seizure.

- Emily has a 6 month old step- brother. Her stepfather is in the army and deployed to Afghanistan.

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Study Considerations

How Should the technologist prepare for this patient?

- *Seizure Montage*
- *Review of Policy for Seizure*
- *Review of Patient History*

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Emily arrives at the sleep lab with her mother and baby brother. Discuss how tech should handle issue of sibling arriving with parent.

- Technologist will need to make mom aware that there are not accommodations for the sibling
- Have another family member come stay with Emily, since baby is still nursing. If she cannot find anyone Emily will need to be rescheduled.
- During screening and in the patient instructions, it should always be explained that only 1 family member can stay in the room, and no one under 18 is allowed.

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- Emily and her mom have watched the video explaining the sleep study procedure. The technologist enters the room and prepares them for the test.

- Technologist explains the procedure to Emily and mom. Then the tech gives Emily "stickers" to put on her doll as the tech puts leads on her.

- Hookup complete, tech leaves room.

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Scenario 1

Mom goes into the restroom to nurse the baby, leaving Emily alone in bed playing with her doll. Tech enters room :

What is wrong with the picture?

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Identify Problems

- *Child was left alone*
- *No Bed Rails*
- *Tech to discuss safety concerns with mom and plan to insure Emily's safety until grandma arrives*
- *Address that mom needs to feed baby—ensure privacy to do that*

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Scenario 2

- Emily is playing in bed and starts convulsing and collapses back on bed.

- How would the technologist handle this situation?

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- Assess the safety of the patient
- Don't hold the person down or try to stop his movements
- Contact response team
- Time the seizure
- Clear the area around the person of anything hard or sharp (Headbox)
- Insure wires are not wrapped around neck, or pose no harm.

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- Loosen ties or anything around the neck that may make breathing difficulty

- Put something flat and soft, like a folded banked or pillow, under the head

- Turn her gently onto one side.
  - This will help keep the airway clear.
  - Do not try to force the mouth open with any hard implement of with fingers. It is not true that person having a seizure can swallow their tongue. Efforts to hold the tongue down can injure teeth or jaw.

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- Do not attempt artificial respiration except in the unlikely event that person does not start breathing again after the seizure has stopped
- Be friendly and reassuring as consciousness returns
- Contact the patient's physician to discuss continuing study and plans upon discharge
- **Document** everything in patient chart and continue sleep study if appropriate

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Scenario 3

- The overnight study is completed
- What should the technologist relay to the grandma regarding the results of the test?
- *Let her know that the results must be reviewed by the interpreting physician reviews the data, it will be sent to the referring physician. You should hear from the physician by _____(depending on policy of turnaround time). If they do not hear anything, please contact their physician.*

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Scenario 4

- Before mom arrives, Emily's biological dad arrives at the hospital to pick her up. The technologist mentions this to grandma, and grandma states he has no parental rights and is a danger to Emily.

- What should the technologist do?

- *Be polite to father and let him know she is finishing up the test. Contact security / authorities to handle immediately.*

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What advice about children's sleep can you offer for parents and kids?

Rafael Pelayo, M.D., is an assistant professor at the Stanford Sleep Disorders Clinic at Stanford University School of Medicine.

- Something so natural as sleep should not be a chore. It's important for parents not to get upset when they think their child is having problems, as this can perpetuate the situation.

- Parents should also know there are many resources to help them. There are several quality books as well as their pediatricians and people who are certified in both sleep medicine and pediatrics.
- For kids, I tell them sleep is good for you. Sleep is fun. It's when you get to dream and you can look forward to your dreams.

https://sleepfoundation.org/ask-the-expert/sleep-study-child/page/0/1

This article originally appeared in the Spring 2004 issue of ***sleep****matters*.

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