

The Sleep Center at
The Children's Hospital of Philadelphia®



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POLYSOMNOGRAPHY REPORT

KOP

Patient Name: Allemeir, Grace

Date of study: 12/18/2012

DOB: [REDACTED]

MRN: 55500182

MEDICAL HISTORY AND INDICATION FOR POLYSOMNOGRAPHY

Grace Allemeir is a 3 year old girl with snoring and difficulty breathing, referred for evaluation of suspected obstructive sleep apnea.

METHODS

Polysomnography was performed overnight in a darkened room with the patient sleeping in a comfortable bed. Standard polysomnography consisted of: EEG (F3-M2, F4-M1, C3-M2, C4-M1, O1-M2, O2-M1), EMG (submental and tibial), EOG (right/left), EKG, SpO₂ and oximeter pulse waveform, end-tidal CO₂ (ETCO₂) and/or transcutaneous CO₂ (TcCO₂), oronasal air flow (thermistor), nasal pressure, thoracic and abdominal motion (respiratory inductance plethysmography) and digital video and audio. Data were recorded on a Rembrandt polysomnography system. Sleep stages and events were scored according to *The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications*, 1st Edition; 2007. For patients younger than 18 years of age, pediatric scoring rules were used. In infants < 2 months post-term, Anders' criteria were used for scoring stages of sleep (Anders, et al; 1971).

RESULTS

Sleep efficiency was normal. Sleep stage distribution was normal. REM latency was normal. The number of arousals from sleep was normal. Some arousals and awakenings from sleep were associated with respiratory disturbances.

There was mild snoring. Paradoxical inward rib cage motion during inspiration occurred during obstructive episodes. Tachypnea was not present.

There were no significant central apneas. There were few obstructive apneas and several hypopneas, most of which were brief in duration. These occurred primarily during REM sleep. Some were associated with desaturation. The obstructive apnea hypopnea index (AHI) was 5.0 events per hour. This is within the abnormal range.

Baseline oxygen saturation was normal during wakefulness and sleep. There were few episodes of desaturation, most of which were brief and mild, occurred primarily during REM sleep, and were associated with obstructive events (nadir = 91%).

Baseline end-tidal CO₂ measurements were normal during wakefulness and sleep. There were no periods of hypercapnia.

The periodic limb movement index was normal. No significant cardiac arrhythmias were noted. The caregiver accompanying the child thought that the night's sleep was atypical in that the child snored less and breathed better than usual.

IMPRESSION: Mild obstructive sleep apnea associated with mild desaturation. This study was forwarded to [REDACTED] specific clinical correlation.

ICSD code: Obstructive sleep apnea, Pediatric.

Suzanne [REDACTED]

12/19/2012

[REDACTED] MD

Diplomate, American Board of Sleep Medicine



Patient Name: Allemeir, Grace
 Study Date: 12/18/2012

DOB: 6/18/2009
 MR#: 0000102

Age: 3 Years
 Height: 37.8 (in) 96.0 (cm)
 Weight: 33.1 (lbs) 15.0 (kg)
 Gender: Female
 BMI: 16.3

Race: White
 Study Type: Baseline
 Scorer: JS. RPSGT
 Night tech: Colleen Kearns, RRT

Sleep Summary

Sleep Time Statistics	Minutes	Hours
Start of Study		21:17
Total Recording Time	519.6	8.7
Total Sleep Time	452.5	7.5
WASO	26.0	0.4
Sleep Efficiency (%)	92%	
Sleep Latency	15.0	0.3
Latency to REM	118.0	2.0

Stage	Minutes	% TST
Stage 1 (N1)	32.5	7.2
Stage 2 (N2)	115.5	25.5
Slow Wave Sleep (N3)	192.5	42.5
REM	112.0	24.8

	Count	Index
Respiratory Related Arousals	35	4.6
Limb Movement Arousals	13	1.7
Spontaneous Arousals	78	10.3
Technician-Induced Arousals	3	0.4
Total Arousals	129	17.1

Respiratory Event Summary

	Obstructive Apnea	Hypopnea	Mixed Apnea	Apnea + Hypopnea (Obstructive + Mixed)	Central Apnea	Total Events
Count	0	37	1	38	1	39
Index	0.0	4.9	0.1	5.0	0.1	5.2

Periodic Breathing: 0.5 minutes, 0.1 % TST

Respiratory Duration Summary

	Obstructive Apnea		Hypopnea		Mixed Apnea		Central Apnea	
	NREM	REM	NREM	REM	NREM	REM	NREM	REM
Count	0	0	16	21	1	0	0	1
Mean (seconds)	-	-	14.6	19.5	13.6	-	-	8.8
Max (seconds)	-	-	29.9	48.4	13.6	-	-	8.8

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ETCO2 Summary

ETCO2 Intervals	>60	50-60	45-50	35-45	<35
Sleep Time (%)	0.0	0.1	5.3	94.4	0.1

ETCO2 & TCCO2 Summary

	Maximum (Torr)		Mean (Torr)	
	ETCO2	TCCO2	ETCO2	TCCO2
Awake	47	-	40	-
REM	52	-	43	-
NREM	48	-	43	-
Total Sleep	52	-	43	-

Oxygenation Summary

SpO2 %	>= 95%	< 95%	< 92%	< 90%	< 88%	< 85%	< 80%	< 70%	< 60%
Sleep Time(minutes)	446.0	1.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Sleep Time (%)	98.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

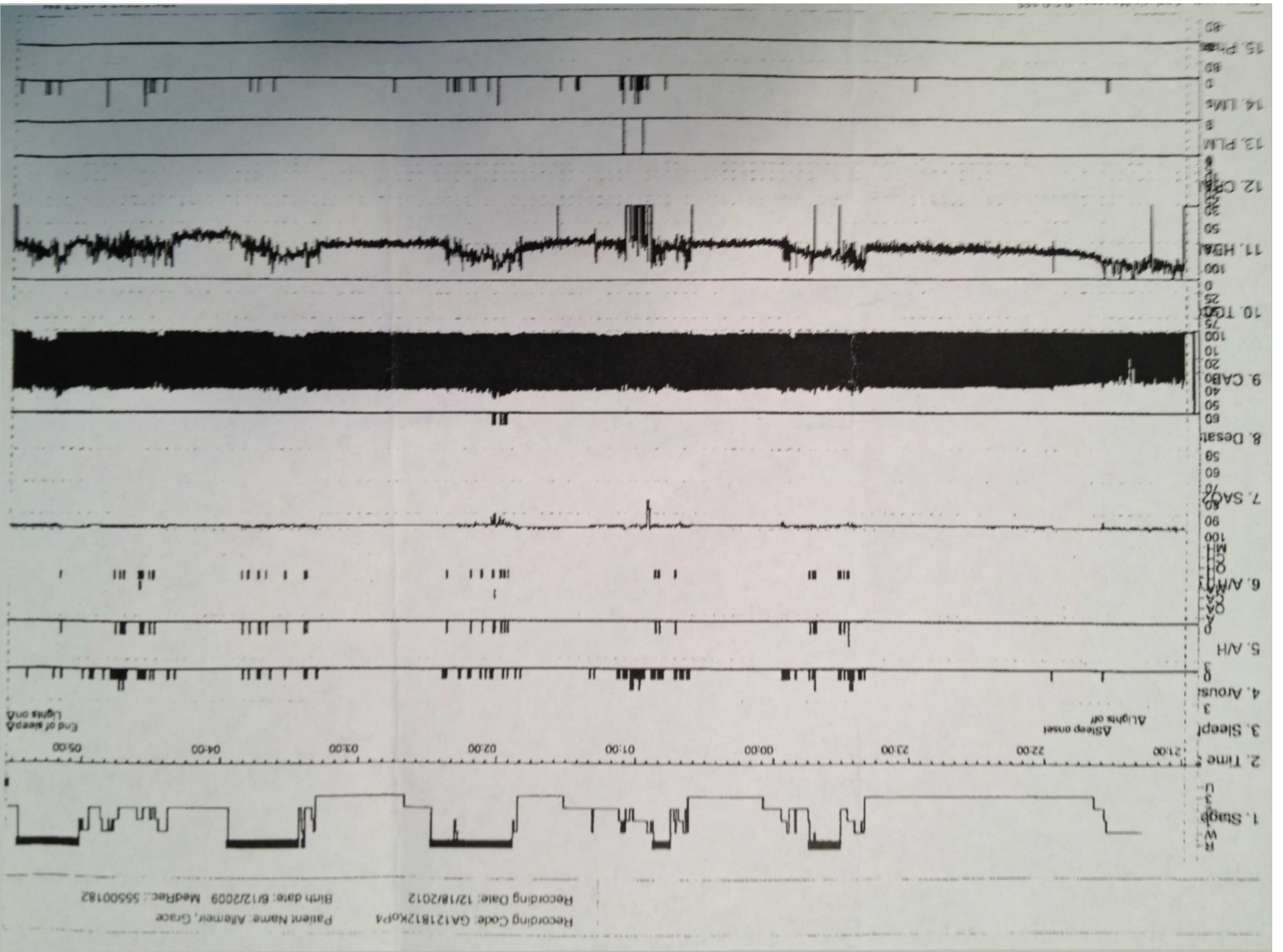
	SpO2 Min. (%)	SpO2 Max (%)	SpO2 Mean (%)
REM	91	100	98
NREM	95	100	98
Total Sleep	91	100	98

Limb Movement Summary

	Limb Movements (LMS)		Periodic Limb Movements (PLMS)	
	Count	Index	Count	Index
With Arousal	13	0.9	7	0.9
No Arousal	36	0.7	5	0.7
NREM	33	2.1	12	2.1
REM	16	0.0	0	0.0
Total Sleep	49	1.6	12	1.6

Heart Rate Summary

	Min HR (bpm)	Max HR (bpm)
Awake	65	126
Asleep	58	121



Recording Code: GA121812K0P4
 Patient Name: Afemer, Grace
 Birth date: 6/12/2009 MedRec: 55500182
 Recording Date: 12/18/2012