Feeding Problems, Sleep Disturbances, and Negative Behaviors in a Toddler*

CASE

Tiffany, a 3-year-old girl, was referred to the developmental and behavioral pediatrics service for evaluation of significant and persistent negative behaviors associated with refusal to eat at meal time and constant snacking during the past 3 months. She lost 2 pounds, but her weight for her height was at the 50th percentile. Her mother indicated that Tiffany had frequent night awakenings (>10) and late sleep onset (between 12:00 and 1:00 a.m.). Her mother described her as being “easily frustrated,” getting upset and angry very quickly. Tiffany was identified at an early intervention program as having mild to moderate developmental delays in pragmatic speech, gross and fine motor skills, and social interaction skills.

Tiffany was born at 33 weeks gestation and was hospitalized for 10 days without significant perinatal problems. She was readmitted at 2 months of age when she was diagnosed with gastroesophageal reflux, lactose intolerance, sleep apnea, and bradycardia. She was discharged with an apnea monitor. A seizure disorder was diagnosed at 1 year of age and reactive airway disease at 2 years of age. At the time of the referral to the developmental and behavioral pediatrics service, Tiffany was followed by multiple services, including cardiology, neurology, gastroenterology, psychology, and pulmonary. Pharmacologic therapies included albuterol and cromalryn inhalers, phenobarbital, valproic acid, levocarnitine, ranitidine, and an inhaled steroid. She continued to use the apnea monitor each night, although three sleep studies demonstrated a normal sleep pattern with no evidence of apnea or bradycardia. A recent electroencephalogram was normal.

Tiffany lives with her mother and maternal grandparents. Her mother is morbidly obese with a history of asthma and depression. She was infertile for a 10-year period, which she attributed to the stress associated with living with an abusive man. Tiffany was the result of a subsequent, brief relationship with another man; she has not had contact with her father. Her mother is a licensed practical nurse who has not worked as a nurse since Tiffany’s birth. An interdisciplinary treatment approach to Tiffany’s multiple biological and behavioral problems was implemented by admitting her to a collaborative care unit at a children’s hospital.

Index terms: collaborative care, feeding disorder, sleep disorder, vulnerable child syndrome.

Dr. Martin T. Stein

Comprehensive and coordinated care for children with multiple disabilities will always be a challenge for health care providers and health care systems. The operative word is “coordination.” Although subspecialty medicine has brought many benefits to children with chronic diseases, the risk for splintering of care is always present. Health care systems have responded with various kinds of coordinators or case managers, including the primary care clinician or a member of one of the subspecialty teams (a nurse practitioner, social worker, patient advocate, or the doctor). For children with a major disability in the realm of a single subspecialty (e.g., a congenital heart defect, asthma, cystic fibrosis, chronic inflammatory bowel disease, etc.), team meetings serve to coordinate care among other services, with one member of the team taking the lead role.

Children such as Tiffany often are outside of these coordinated systems of care. They are without a single major problem; their chronic conditions encompass a variety of subspecialties. Rather than a medical home, their health care is diffused into many individual units—a “medical apartment house” at best!

Dr. Jane R. Robinson is a postdoctoral intern in pediatric psychology at the Rainbow Babies and Children’s Hospital, Case Western Reserve School of Medicine. In her commentary, she extends our knowledge about Tiffany and her mother as new data were acquired during the admission to the Comprehensive Care Unit. The clinical scenario demonstrates the process of unraveling the loose ends in each subspecialty domain as more is learned about Tiffany’s developmental profile and about her mother’s psychological status. The process of reassessing, setting treatment priorities for target behaviors, and recognizing the role of the mother in any management strategy is exemplified in the discussion.

Dr. Jane R. Robinson

Feeding disorders among infants and young children are characterized by persistent failure to eat adequately and significant failure to gain weight (or
significant weight loss over at least 1 month) without gastrointestinal or other medical conditions severe enough to account for the feeding disturbance. Significant mealtime problems have been estimated to occur in approximately one third of children with developmental disabilities. Treatment is guided by a comprehensive assessment that generates information in the following areas: (1) general medical and developmental functioning; (2) feeding history and habits; (3) current dietary intake; (4) feeding interactions; and (5) family stressors.

Multiple areas of concern in both medical and developmental domains required consideration. Albuterol and valproic acid have potential side effects, including appetite loss, vomiting, and gastric discomfort. In addition, Tiffany had a mild cognitive delay as indicated by the Bayley Scales of Infant Development-II (Mental Development Index = 73). Maternal perceptions from the Child Behavior Checklist demonstrated significant difficulties in the areas of Externalizing Problems (e.g., hitting, defiant behavior, and easily frustrated) and Total Behavior Problems (e.g., anxious/depressed, sleep and somatic problems, aggressive and destructive behavior). Moreover, Tiffany had difficulties adapting to changes in her schedule, was hypersensitive to tactile simulation, and had difficulty in comforting. Finally, Tiffany experienced sleep deficiency as a result of inadequate (e.g., <10 hr of sleep per night) and interrupted sleep.

A semistructured interview that focused on feeding history/habits and current dietary intake revealed a maternal perception of chronic feeding difficulties. For example, Tiffany had reflux for the first year of life and “never had much of an appetite.” During the past 3 months, Tiffany refused to eat while confined to a high chair. She drank juice throughout the day and consumed a paucity of solid food. Tiffany’s mother became increasingly concerned and focused on the lack of food intake and sleep disturbances.

Children between the ages of 2 and 3 years require approximately 12 to 13 hours of sleep. Preschool children who sleep fewer than 10 hours in a 24-hour period demonstrate greater externalizing behavior problems (e.g., oppositional, hyperactive, and aggressive behaviors) than those who sleep 12 or more hours each day. When Tiffany was observed during a feeding interaction, she exhibited frequent and intense acting-out behaviors, noncompliance, and a low tolerance for frustration. The feeding interaction became so aversive to Tiffany’s mother that she had adopted an attitude of helplessness, allowing Tiffany to eat at will without appropriate intervals between meals.

The most significant family stressor in Tiffany’s case was the high level of maternal anxiety. Because of Tiffany’s premature birth, sleep apnea, seizures, and reactive airway disease, her mother sustained the belief that Tiffany might die. Tiffany demonstrated cognitive and behavioral signs of the vulnerable child syndrome, described by Green and Solnit. The hallmark manifestations of this syndrome are (1) parental belief that the child might die; (2) difficulty with separation, underscored by sleep problems and parental struggles with limit-setting, being overly protective, and indulging the child; (3) the child is dependent, disobedient, irritable, and uncooperative; and (4) later signs of school underachievement. The parental perception of a vulnerable child often follows an illness from which the child recovers. Tiffany’s mother was hypervigilant to any sign or symptom of potential medical distress. Her life was consumed with Tiffany’s care, including medical and school appointments, a support group for parents of disabled children, and a continuous search for information pertinent to Tiffany’s multiple medical diagnoses.

In consideration of the medical and psychosocial risk factors contributing to Tiffany’s feeding disorder, her externalizing behavior problems, significant sleep deprivation, and maternal anxiety, a management plan was developed that included hospitalization in a collaborative care unit. Goals for the hospitalization included (1) a reevaluation of Tiffany’s medical conditions, including the need for medications to treat seizures and reactive airway disease; (2) a reevaluation of the need for the sleep monitor; and (3) parent training to facilitate the implementation of a behavioral plan to increase Tiffany’s sleep duration, decrease negative behavior with appropriate parental limit-setting, and increase her daily food intake.

The psychological state of Tiffany’s mother required attention to ensure a successful intervention. Parental involvement is viewed as essential to therapeutic success and is recommended for both the planning and the treatment phases of behavioral therapy. Parents’ beliefs about the cause of their children’s problems affect parenting, disciplinary practices, and parent-child interactions. Even though three sleep studies had normal results and the electroencephalogram did not indicate seizure activity, Tiffany’s mother remained convinced that her daughter was at risk of dying. Thus, at the onset of treatment, maternal anxiety was acknowledged, and its role in sustaining Tiffany’s behavior was recognized.

Tiffany was hospitalized for 12 days on a collaborative care unit in a children’s hospital. This unit ascribes to a multidisciplinary team approach, involving occupational, physical, speech/language, and respiratory therapists, along with pediatric psychology and social work. In Tiffany’s case, the Pediatric Sleep Clinic specialists (pulmonology, neurology, and behavioral psychology) were consulted. Assessments and interventions were developed during weekly interdisciplinary rounds based on input from each specialist.

To assess patterns of sleep, Tiffany’s mother completed a comprehensive sleep assessment questionnaire and interview. The sleep questionnaire was developed by the sleep clinic staff and included the Children’s Sleep Habit Questionnaire as one component. It revealed that Tiffany associated sleep onset with the presence of her mother in the bed; she did not go to bed until after 10:00 p.m., falling asleep later than midnight, and arousing frequently.
throughout the night. Moreover, she would take multiple short naps throughout the day.

To facilitate an appropriate sleep-wake schedule and increase the total hours of sleep, a behavior plan was initiated. Tiffany’s mother kept her awake throughout the day to increase the likelihood of earlier sleep onset. The bedtime routine began at 8:30 p.m. and gradually moved back 15 minutes each evening until it started at 7:00 p.m. Tiffany’s mother was encouraged to engage in calm, predictable activities each evening. For example, after a bath, a book was read, the lights were dimmed, and she was in bed by 8:00 p.m. Finally, to address Tiffany’s association of sleep onset with the presence of her mother, we had her mother systematically move further from the bed each night. She offered verbal comfort and rubbed Tiffany’s back the first few nights. However, by the tenth night, Tiffany was asleep with few maternal reassurances.

Tiffany’s sleep was monitored with pulse oximetry only, a significant change from the apnea monitor. To reduce maternal anxiety regarding the monitoring of sleep, Tiffany’s hospital room was near the nurses’ station. In addition, when Tiffany was hospitalized, the latest downloaded sleep data from Tiffany’s home monitor was reviewed by the pulmonology specialist. She verified that the recorded alarms were artifacts and not apnea events or bradycardia.

To facilitate the development of a behavioral feeding plan and target specific behaviors for parent training, observations of Tiffany and her mother were conducted during feeding and free play. Tiffany’s behavior fluctuated between periods of intense activity with little attention to any one toy or person and episodes of tantrums when she kicked, hit, and screamed at her mother. During times of feeding, these behaviors escalated, including throwing food and dumping liquids. When Tiffany exhibited negative behavior, her mother would respond with increased attention (e.g., more verbal responses, increased eye contact, and physical touch). To decrease negative behavior and increase positive behavior, principles of applied behavior analysis were implemented. Tiffany’s mother was taught to ignore the negative behaviors and reinforce the appropriate behaviors with positive attention. Parent training was facilitated throughout the hospitalization with the use of modeling by the therapist, written material that explained the intervention strategies, and videotaped interactions. Tiffany was placed on a feeding plan that included scheduled meals and snacks, limiting liquids between meals, and adding calorie-rich foods. Finally, a 36-hour electroencephalographic recording did not demonstrate any seizure activity and provided additional clinical support for considering the discontinuation of the seizure medications.

At discharge, Tiffany was sleeping between 11 and 12 hours each night, and her attention span was noticeably improved. She demonstrated fewer negative behaviors, and her total calorie intake increased significantly. However, her mother refused to allow the removal of the sleep monitor.

Follow-up treatment included biweekly occupa-

tional therapy appointments for assistance with feeding behaviors and biweekly appointments with a psychologist to facilitate appropriate educational placement, provide ongoing parent training, and address maternal anxiety. Tiffany enrolled in a full-time early-intervention preschool. A schedule to taper the phenobarbital was initiated. A systematic documented sleep-monitoring program was arranged to provide a safe method for the discontinuation of the monitor. Lowered settings on the monitor were prescribed (e.g., heart rate, 50 beats per min; apnea delay, 30 sec; and bradycardia, 5-sec delay) to decrease the number of audible alarms. The monitor company downloads all of the events and faxes them to the hospital for assessment by the pulmonologist. In the past 2 months, there have been eight audible alarms, although none was a clinically significant event. This information was shared with Tiffany’s mother. If there are no significant events for 6 months, the monitor will be discontinued. Tiffany’s mother is beginning the process of perceiving her daughter as not at risk for imminent death. Outpatient biweekly psychologist appointments continue.

JANE ROBINSON, PhD
Post Doctoral Pediatric Psychology Fellow
Rainbow Babies and Children’s Hospital
Case Western Reserve Medical School
Cleveland, Ohio

REFERENCES

Margo Adams Larsen, Ph.D., Pediatric Psychology Resident at Altru Health System, Department of Psychology & Behavioral Sciences, Grand Forks, North Dakota, writes: “A primary concern is that Tiffany displays a pattern of behavior that is similar to her mother, who describes her daughter as ‘being easily frustrated, getting upset and angry very quickly.’ Does her mother perceive both her own childhood and Tiffany’s childhood as needing to be free of distress? There are occasions where it would be important for Tiffany to learn to soothe herself (e.g., nighttime awakenings). I wonder how much of mother’s history relates to her behavioral expectations and avoidances with Tiffany.

“A psychological evaluation and treatment for an abusive past may help to correct some of mother’s misplaced needs, align her expectations, motivate her to return to work, and adhere to behavioral interventions for sleep regulation and dietary modifications. Clearly the mother is not in control when the child snacks all day. My first goal would be to understand behavioral principles that focus on toddler control issues and help her mother to understand that it would be acceptable initially for Tiffany to be upset when limits are set. Identifying the roles that grandparents might play would also be important. Following these steps, behavioral intervention for the sleep schedule and eating schedule could be addressed.”

Linda Nathanson-Lippitt, M.D., Developmental/Behavioral Pediatric Practice, Atlanta, Georgia, writes: “This family requires treatment. It is unlikely that behavioral therapy will be successful as long as the mother is depressed, probably isolated, and has an eating disorder. How much emotional support and recognition does this unemployed single mother obtain from the frequent visits for her child? If she tolerated an abusive husband for years, she probably doesn’t have the self-esteem to be comfortable when disciplining her daughter in a loving but firm way. Food seems to be a major player in her life, and she makes it available to Tiffany at what she interprets as her child’s desire.

“I have concerns about this child. The description of virtually global delays and poor social skills makes one wonder if this child is in the autistic spectrum or depressed. A careful clinical assessment is needed to determine these facts before one can map out an effective program. The collaborative approach to such a complex case was clearly the right call to sort out the multiple issues.”

Anna Baumgaertel, M.D., Vanderbilt School of Medicine, writes: “I would pursue further historical information from individuals in addition to the mother. Grandparents and others outside the family may provide useful information. Early intervention programs usually have a staff member who can make important observations through home visits. I would also obtain objective evidence for her medical problems. I would also be concerned about sensory and emotional deprivation and a deficit of attention. In addition, the mother’s profile certainly fits a variant of Munchausen by proxy.”

Geraldine H. Cohen, M.D., Developmental-Behavioral Pediatrics, Alexandria, Louisiana, comments: “All of Tiffany’s medications have potential side effects. The one which stands out to me is phenobarbital which commonly causes irritability (about 50%), hyperactivity, and depression (about 40% in teens/adults). Irritability and sleep problems can also be signs of depression in a 3 year old. Steroids can also cause irritability, but if the inhaled form is used as directed, I would not expect it to cause a behavioral problem. The valproic acid can cause loss of appetite, but probably not selectively at meal time only. One of the first things I would do is to consult with a neurologist about tapering off phenobarbital.

“Psychologically, Tiffany’s hyperactivity and irritability might reflect a problem with attachment with her mother because of her periodic emotional unavailability when depressed. Also, grandparents and mother may not be consistent in providing structure for this child whom they probably view as a “vulnerable” child. Tiffany’s mother needs a referral to a psychiatrist if depression is not controlled.”

Jim Shander, M.D., Primary Care Pediatrician, Waukesha, Wisconsin, writes: “Chronic sleep deprivation of the mother and child might exacerbate some of the daytime negative behaviors. My initial intervention would be directed at the sleep disturbance. Is there a medical problem causing the child to awaken frequently? I would pursue a developmental sleep history and determine the child’s temperament as well as current settling routine at night.

“Further study of the mother’s depression would probably be helpful in understanding the presenting problems. Is there an extended family history of depression or bipolar disorders?”

Dr. Martin T. Stein

If a prize existed for a single case study in the category of “Best study of a complex parent-child interaction in a child with multiple medical and developmental problems,” I would nominate this challenging case. Dr. Robinson’s commentary illustrates the value of stepping back and redefining the multitude of problems that impacted Tiffany and her environment. She demonstrates the use of hypothesis generation as an effective strategy in reframing both the medical and behavioral issues and discovering alternative therapeutic strategies. Early in the development of a management plan, the treatment team on the collaborative care unit defined three specific goals for the hospitalization: (1) a reevaluation of Tiffany’s medical conditions, including the need for medications to treat seizures and reactive airway
disease; (2) a reevaluation of the need for a sleep monitor; and (3) parent training to increase Tiffany’s sleep duration, decrease negative behavior with appropriate parental limit-setting, and increase her daily food intake.

These goals set the stage for a collaboration with subspecialty pediatricians during which specific, targeted questions could be asked of each consultant. In addition, the goals were an impetus to learn more about Tiffany’s developmental achievements and her mother’s psychological condition as it affected the maternal-child interactions. As a result of these assessments, the staff was able to understand the maternal-child interational relationship with regard to feeding problems, sleep dysfunction, and Tiffany’s negative behaviors. As suggested in Dr. Cohen’s commentary, a vulnerable child syndrome was apparent. The persistent use of nonessential medical interventions led Dr. Baumgaertel to suggest the possibility of a variant of Munchausen by proxy.1

The case also illustrates the clinical benefit derived from a diagnosis of vulnerable child syndrome. When a parent sustains an inappropriate belief that a child is fragile and that minor (or developmentally appropriate) behaviors represent disease, well-intentioned interventions often fall short of their expected outcome. The recognition of a vulnerable child syndrome extends a clinician’s therapeutic options by refocusing the child’s symptoms into the family structure.

As Allmond and Tanner remind pediatricians, “The family is the patient.”2 All of the responses from the web site commentators emphasized the significance of understanding the mother’s critical role in sustaining and potentially changing Tiffany’s negative behavior patterns. After recognizing the impact her mother’s depression, past abusive history, and medical problems may have had on her interactions with Tiffany, the staff developed treatment strategies that involved the mother at each step. Through specific educational interventions and role-modeling experiences, the staff engaged the mother in the promotion of Tiffany’s positive behaviors, through which she could begin to see her role as an effective parent. These behavioral interventions, carried out in a hospital setting, set the stage for future care.

Could Tiffany’s many physical and behavioral problems have been prevented? The retrospective analysis of a particular case is always dangerous. However, it is the method by which clinicians have made many useful observations which then can be tested objectively. Perhaps a careful evaluation of the family before discharge from the neonatal nursery may have activated more social services and support for her mother.3 Because of a brief 10-day hospitalization without neonatal complications following a 33-week gestation, Tiffany may have been perceived as not at risk for future problems. Assuming this was a missed opportunity, the rehospitalization at 2 months of age for gastroesophageal reflux, lactose intolerance, sleep apnea, and bradycardia might have triggered a review of the mother’s capacity to manage these problems and the potential effects of her chronic depression on her ability to carry out nurturing, as well as consistent and emotionally responsive parenting. Depressed mothers are unable to respond to their infants; they show fewer smiles, frown more, and are more withdrawn and less responsive.4 However, after early intervention, depressed mothers can learn to be more responsive in play situations, and their babies respond with more eye contact and less distress.5 A quality-home visitor program, respite care, a parenting class, and individual or group therapy (for her obesity and depression) may have lessened the mother’s burden.

REFERENCES
2. Allmond BW Jr, Tanner JL: The Family is the Patient. 2nd ed. Baltimore, MD, Williams & Wilkins, 1999
Feeding Problems, Sleep Disturbances, and Negative Behaviors in a Toddler

Martin T. Stein and Jane R. Robinson

Pediatrics 2001;107:888

Updated Information & Services
including high resolution figures, can be found at:
/content/107/Supplement_1/888.citation

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
Developmental/Behavioral Pediatrics
/cgi/collection/development.behavioral_issues_sub
Growth/Development Milestones
/cgi/collection/growth:development_milestones_sub
Psychosocial Issues
/cgi/collection/psychosocial_issues_sub

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
/site/misc/Permissions.xhtml

Reprints
Information about ordering reprints can be found online:
/site/misc/reprints.xhtml
Feeding Problems, Sleep Disturbances, and Negative Behaviors in a Toddler
Martin T. Stein and Jane R. Robinson
Pediatrics 2001;107;888

The online version of this article, along with updated information and services, is located on the World Wide Web at:
/content/107/Supplement_1/888.citation