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Feeding disorders of infants, toddlers, and preschoolers

Failure to thrive should not be the only diagnostic criterion used when considering whether a young child has a feeding disorder.

ABSTRACT: Feeding disorders in infancy are common and, when severe, can be life-threatening. The child needs adequate nutrition to satisfy the demands of growth and permit brain development. For feeding to succeed, the parent and infant need to be supported adequately, both socially and emotionally. As the infant develops, he or she needs to assume more physical and emotional independence. There are many places along this path where feeding can go awry. Knowledge of the historical background to the development of our understanding of internally regulated feeding and diagnostic classification systems and various assessment and treatment strategies for feeding disorders can help primary care physicians in the care of families and may also have a preventive effect on the incidence of eating disorders in young adulthood.

From the moment of birth, a child begins to assert independent functioning. No longer receiving nutrients passively through the umbilical cord, the infant now needs to receive nutrients by the process of being fed. This involves at least two people, surrounded by the family network, which in turn is embedded in a sociocultural context. Not only does the child have to be aware of and signal his or her needs, the caregiver has to recognize these signals and respond appropriately.

The negotiations between parent and child around feeding are a harbinger of how other tasks will be negotiated. Approximately 25% of normally developing infants and up to 80% of those with developmental delays have feeding problems.[1,2] Both the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*)[3] and the *International Statistical Classification of Diseases* (*ICD-10*)[4] describe feeding disorders in early childhood as encompassing nutritional intake problems. As Maldonado-Duran[5] has indicated, feeding disturbances or disorders are not synonymous with failure to thrive or stunted growth. Failure to thrive is a descriptive term for growth failure rather than a diagnosis itself.[6] Feeding disturbances can occur even in the absence of problems with nutritional intake.

An excellent new classification system for feeding disorders in infants and toddlers was published by Chatoor in 2002.[7] This classification system has since been adopted by the *Diagnostic Classification of Mental Health and Developmental Disorder of Infancy and Early Childhood* (*DC: 0-3R*).[8] It subclassifies feeding disorders according to various organic and nonorganic causes and encompasses a broader understanding of the etiology of these disorders.

Development of internally regulated feeding

According to Chatoor, an important task of the first years of life is the

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development of autonomous internal regulation of feeding.[9] A child should be able to recognize his or her hunger and satiety cues and respond appropriately. The key to this is the development of a parent-infant communication system that requires the child to signal hunger and satiety states and the parent to respond accordingly. The parent then supports the infant's emerging skills and teaches the infant appropriate responses to these internal signals by example, thus helping the infant to regulate his or her eating in response to hunger and satiety. This prepares the infant for the transition to self-feeding.

The presentation of eating problems in early childhood or eating disorders in adolescence is a strong indicator of risk for eating disorders in young adulthood.

Chatoor proposes that the initial stage in this developing process is to achieve homeostasis.[9] During this time the infant has to establish basic cycles and rhythms of sleep and wakefulness, feeding and elimination. The infant must maintain a calm state of alertness for feeding. If the infant is too irritable or sleepy, feeding may be impeded. The parent may need to work with the child to maintain this calm, alert state in order for feeding to occur.

By 2 to 4 months of age, most infants become more active socially. Interactions with the parent become increasingly reciprocal in nature. Body language signaling hunger and satiety may become more clear, so interactions between infant and parent regarding the process of feeding become more mutually regulated. For example, the infant may signal hunger and on seeing the parent, anticipate the upcoming feeding and stop the signals.

Between 6 months and 3 years of age, children progress through a developmental process called separation and individuation.[10] The child becomes increasingly physically and emotionally independent and develops some autonomy. The parent and infant have to negotiate who is going to put the food in the infant's mouth. The parent needs to consider how he or she feeds the child and whether the offered food is for nutritional needs or emotional needs. If the infant signals poorly, the parent may become confused and attempt to override the child's cues. This can result in a battle of wills. This stage, as with the others, can precipitate maladaptive feeding patterns, depending on both infant and parent characteristics.

Diagnostic criteria

Two sets of diagnostic criteria are commonly used for infants and children with feeding disorders. The Feeding Disorder of Infancy or Early Childhood system from the *DSM-IV-R*[3] contains the following criteria:

- Criterion A. Persistent failure to eat adequately, as reflected in significant failure to gain weight or significant weight loss over at least 1 month.
- Criterion B. The disturbance is not due to gastrointestinal or other general medical condition (e.g., esophageal reflux).
- Criterion C. The disturbance is not better accounted for by another mental disorder (e.g., rumination disorder) or by lack of available food.
- Criterion D. The onset must be before age 6.

In my experience, the requirement of significant failure to gain weight or significant loss of weight in this general definition has limitations. Such a requirement excludes children with adequate caloric intake but maladaptive feeding patterns.

Chatoor's Diagnostic Classification of Feeding Disorders,[7,8] which has been edited and included in *DC: 0-3R,* states:

The diagnosis of feeding behavior disorder, the symptoms of which may become evident at different stages of infancy and early childhood, should be considered when an infant or young child has difficulty establishing regular feeding patterns—that is, when the child does not regulate his or her feeding in accordance with physiological feelings of hunger or fullness. If these difficulties occur in the absence of hunger or interpersonal precipitants such as separation, negativism, or trauma, the clinician should consider a primary feeding disorder.

The six subcategories of feeding behavior disorder are summarized in *DC: 0-3R* as follows:

- Feeding disorder of state regulation. The infant has difficulty reaching and maintaining a calm state during feeding (e.g., the infant is too sleepy, too agitated, or too distressed to feed). This disorder starts in the newborn period.
- Feeding disorder of caregiver-infant reciprocity. The infant or young child does not display developmentally appropriate signs of social reciprocity (e.g., visual engagement, smiling, or babbling) with the primary caregiver during feeding.
- Infantile anorexia. The infant or young child refuses to eat adequate amounts of food for at least 1 month. The onset of the food refusal occurs

before the child is 3 years old. The infant or young child does not communicate hunger and lacks interest in food, but shows strong interest in exploration or interaction with caregiver, or both.

- Sensory food aversions. The child consistently refuses to eat foods with specific tastes, textures, or smells. The onset of the food refusal occurs during the introduction of a novel type of food (e.g., the child may drink one type of milk but refuse another, may eat carrots but refuse green beans, may drink milk but refuse baby food). This child eats without difficulty when offered preferred foods, and the food refusal causes specific nutritional deficiencies or a delay of oral-motor development.
- Feeding disorder associated with concurrent medical condition. The infant or young child readily initiates feeding, but shows distress over the course of feeding and refuses to continue feeding. The child has a concurrent medical condition that the clinician judges to be the cause of the distress.
- Feeding disorder associated with insults to the gastrointestinal tract. Food refusal follows a major aversive event or repeated noxious insults to the oropharynx or gastrointestinal tract (e.g., choking, severe vomiting, reflux, insertion of nasogastric or endotracheal tubes, suctioning). This infant or young child consistently refuses food in one of the following forms: bottle, solids, or both. Reminders of the traumatic event(s) cause distress, and are manifested by anticipatory distress.

In my own clinical practice, this classification system has been extremely useful in going beyond the *DSM-IV-TR* phenomenological requirement of "failure to gain weight," and has allowed me to look at the etiologic basis for difficulties in feeding.

Assessment

Assessment requires access to a multidisciplinary team whose members can bring their expertise to bear on the specific function that has gone awry. Ideally, this team should include the following:

- A psychodynamically informed psychiatrist or clinical psychologist to (1) assess parental characteristics such as mental status, attachment system, and temperamental characteristics in the context of relationship to partner and society; (2) observe the parent-infant interactions to assess temperamental fit and communication.
- A pediatrician to assess the infant's physical health.
- A dietician to assess the infant's height, weight, head circumference, food intake, and nutritional status.
- A speech-language pathologist or occupational therapist (or both) to assess the infant's oral-motor development.
- A clinical psychologist to assess the infant's development.
- An occupational therapist to assess the infant's sensory processing.

Treatment

Just as a team of professionals can best establish the cause of the feeding disturbance, so too can a variety of modalities be used to treat these disorders most effectively. I have found both conjoined interventions and staged interventions to be of benefit. The following case provides an example of this.

Johnny is a 3-year-old boy who was admitted to hospital after failing to maintain his growth curve. Johnny lives at home with two older siblings, neither of whom has had an eating problem. His mother, however, comes from a family with a longstanding history of Crohn's disease. She describes herself as always having had a small appetite, having had struggles over eating with her own mother, and being quite a fussy eater. She indicates that she still has difficulties with food and clothing textures.

Johnny is the result of a planned pregnancy, and had a normal birth. However, his mother has always found him "difficult to feed." He had a systemic infection at about 6 months of age and had to change to a different formula, which he refused to take. Despite this, he did make a successful transition to table food, although his mother recognized that he did not like jarred baby food and wondered if the texture bothered him. By age 1 1/2, Johnny and his mother were making regular visits to the pediatrician. Even though Mom complained that Johnny did not eat very much, Johnny maintained his growth curve. Shortly thereafter, Johnny had some gagging episodes, was diagnosed with reflux, and put on thickened fluids. Over the ensuing year and a half, Mom became increasingly worried about Johnny's low food intake and nutritional status. She believed that she needed to "make him eat," and would employ a variety of coaxing strategies to feed him. Johnny was allowed to graze whenever he wanted. As Johnny slowly slipped off his growth curve, Mom continued trying to introduce new foods and new techniques to get him to eat. Eventually, mealtimes became a source of great stress and tears for both mother and child. When finally admitted to the hospital, Johnny was lethargic and showed some evidence of micronutrient deficiency.

In looking at Johnny in the context of the development of internally regulated feeding, the assessment team found that he was able to achieve basic cycles of feeding and elimination early on and that he emitted clear satiety

cues. He may also have shown evidence of a regulatory disorder of sensory processing[8] with formula refusal and fussiness about texture and tastes. Mom's many attempts to help him may have been affected by her own early history of poor negotiation over food with her own mother. Interviews revealed that Mom had considerable anxiety about the development of gastrointestinal problems and is temperamentally a rather inflexible person. She succumbed to feeling that she needed to do more to get Johnny to eat. Because Johnny is temperamentally rigid as well, a battle between mother and child ensued. In desperation, Mom let Johnny eat whenever he signaled any hunger. This probably contributed to his poor intake. It did not help when Johnny was diagnosed with reflux, which may well have made eating more uncomfortable for him, made him more uncooperative, and made Mom rely more on coaxing.

Assessment involved a multidisciplinary team with each expert contributing to the description of the problem outlined above. Treatment for this case involved:

- Sessions for Mom to help her understand the reasons for the problems.
- Nutritional supplementation for Johnny.
- Treatment for Johnny's reflux.
- Parent-infant therapy to address the feeding process.
- Family therapy to address one sibling's coercive behavior toward Johnny.
- Occupational therapy assessment to determine the extent of Johnny's regulation disorder of sensory processing[8] and strategies to work on his sensitivities.

As Johnny began to thrive, Mom was able to address her own rigidity in other areas of her relationship with Johnny. One year after treatment, this dyad has a much healthier relationship and Johnny continues to thrive. Another developmental task, toileting, has been successfully negotiated.

Conclusions

Feeding disorders of infants, toddlers, and preschoolers must be taken seriously. Treatment is best done in the context of the whole family, with assessment and treatment by a multidisciplinary team. The presentation of eating problems in early childhood or eating disorders in adolescence is a strong indicator of risk for eating disorders in young adulthood.[11] Practitioners who treat adults of reproductive age with a history of eating disorders, or those who see young children with feeding disorders should be aware of the risks involved. Whelan and Cooper have shown that mothers of children with feeding problems had a markedly increased rate of both current and past eating disorders themselves.[12] It is crucial for pediatricians and for physicians in general to be aware of the child at risk and to interact effectively with child mental health caregivers. Primary care physicians should be alert not only to those children who "fall off the growth curve" but also to children of adults with eating disorders or children whose parents show persistent difficulty feeding them. In collaboration with professional colleagues, physicians can interact effectively to prevent feeding disorders in early life. This should have a primary preventive effect on the incidence of eating disorders of young adulthood.

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Competing interests

None declared.

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