IRRITABLE BOWEL SYNDROME IN ADOLESCENTS

Andrée Rasquin, MD, Arlene Caplan, PhD
Division of Gastroenterology and Nutrition, Hôpital Sainte-Justine
Departments of Pediatrics and Psychology, Université de Montréal, Montreal, Quebec, Canada

Irritable Bowel Syndrome (IBS) is known to affect 10 to 20% of the adult population. In the absence of "red flags" (symptoms suggestive of organic disease) and abnormal findings during physical examination, typical IBS symptoms, together with a limited number of relevant investigative tests, have high diagnostic value(1). A recent study by Thompson et al. confirms that although most people do not consult for IBS, those that do constitute 1/3 of patients presenting with gastrointestinal symptoms to a family physician (2,3). In fact, IBS represents the vast majority of functional gastrointestinal disorders seen by general practitioners. In the same study, it was demonstrated that among IBS patients, a major predictor of referral to a specialist is denial of the influence of stress on their gastrointestinal symptoms(2). Other predictors include the severity of diarrhea, duration of symptoms, and number of tests performed. It has also been shown that more psychological and psychiatric disorders are found in IBS patients consulting a gastroenterologist than those seen by a general practitioner(4). When compared to the vast knowledge pertaining to adults with IBS, very little is known about IBS in the pediatric population. Since Apley and Nash's description in 1958 of the "Recurrent Abdominal Pain" (RAP) syndrome in children, research indicates that 10- 20% of school-aged youngsters experience abdominal pain frequently and severely enough to affect their daily activities(5). More recently, clinical and laboratory observations have helped distinguish organic diseases from functional disorders.

In 1995, the identification of an IBS subgroup among youngsters with RAP(6) led to a community-based study on the prevalence of IBS in adolescents(7). In the latter study of 507 middle and high school students conducted by Hyams et al., abdominal pain was very common, occurring during the previous year in 75% of teenagers. Using the Rome I Criteria, IBS was suggested in approximately 14% of high school students and 6% of middle school students. Boys and girls were equally represented in the IBS subgroup, which scored higher on trait anxiety and depression than non-IBS students reporting abdominal pain. Anxiety and depression were positively correlated with pain severity and frequency, and headaches were significantly more frequent among IBS adolescents. Approximately 10% of both middle and high school students with abdominal pain had seen a physician in the previous year, and the likelihood of consulting a doctor was associated with severity, frequency, and duration of pain, as well as disruption of home and school activities(7).

Whether or not RAP in children is a precursor of IBS in adolescents and young adults awaits confirmation using the recently defined Rome II Criteria(8). However, there is growing evidence suggestive of continuity between the two syndromes(8,9,10). Walker et al., in a five-year follow-up

of 76 children who consulted for RAP without IBS features or constipation, found that 18% of girls and 8% of boys later developed IBS according to Manning criteria. Again, symptom severity was associated with increased functional disability, more clinical visits, greater life stress, higher levels of depression, and lower academic and social competence(11). As in the adult population, there may be important differences between children with IBS identified in community-based studies and those who consult a specialist(8). A major difference between the adult and pediatric populations is that it is usually the parent who decides whether or not to consult a physician for their child or adolescent(12). Personal and family factors influencing parents' decision to consult are likely to play an important role in the course of the youngster's disorder (12). Children of parents with IBS have significantly more health care visits and consult more frequently for diarrhea, abdominal, and gastrointestinal symptoms in general than children of parents without IBS(13).

The reasons why abdominal pain may persist from childhood to adulthood are multiple(10). Genetic factors, early experiences of stress, and early colonic inflammation can contribute to physical as well as psychological aspects of IBS (10,14,15,16,17). In addition, parents' attitudes concerning health and disease, and their healthcare seeking patterns can profoundly influence children's pain experience and illness behavior (12,18). Those attitudes are determined in large part by cultural factors, parents' previous experiences, and parents' mental health. In fact, anxiety, depression, and somatization have been shown to be more prevalent in mothers of children with RAP than in mothers of healthy children(19,20). In addition, illness behavior can result in secondary gains for the child (e.g., permission to miss school) and it is not unusual for the child's pain to become the center of the entire family's attention(21). Unfortunately, increased attention to pain signals and illness behavior tends to reinforce the child's symptoms(22) and, at the same time, allows other sensitive issues in the family (e.g., marital problems) to be put to the side and remain unresolved(21,23). Traumatic life events can also contribute to the perpetuation of symptoms in children and adolescents. A history of physical and sexual abuse has previously been documented in women with refractory IBS, and it is noteworthy that most of those traumas occurred during childhood and adolescence(10,2).

CLINICAL EXPERIENCE

In our clinic, we generally see the most refractory cases of IBS during adolescence. It is striking how, at first, teenagers tend to deny feeling stressed and attempt to remain "cool", whereas their parents appear extremely concerned. Some adolescents even appear oblivious to why they are in the physician's office! In our experience, the youngster will not invest in the interview or participate in any aspect of the treatment plan as long as parents assume too much responsibility for the adolescent's problem. When they are asked to take charge of their own symptoms and rehabilitation, many teens will regress into a more dependent, childlike role, in an attempt to avoid responsibility. We tend to understand this resistance as being fairly typical of the ambivalent attitude characteristic of the normally developing adolescent. Like their children, some parents also

tend to deny the role of stress in their adolescent's symptoms, preferring instead to believe that an organic disease must be present in order to explain the child's severe pain and associated disability(25). For the physician, the challenge begins at the door of the waiting room. It is never clear whether it is better to first see adolescents alone or with their parent's). If, at first glance, the adolescent patient appears "glued" to his/her parents, our tendency would be to see them together at the first visit. On the other hand, teenagers are always seen by the physician alone for the initial physical examination, and again, at subsequent visits. This allows the physician to ask adolescents about personal issues and explore their concerns about symptoms and how they affect their lives. The physician will discuss the diagnosis (IBS) with the adolescent privately and answer any questions the youngster may have about it. The physician tends to wait until parents are present in the examining room with their adolescent before explaining the pathophysiology of IBS in detail. It is of utmost importance that the physician takes the time to explain the disorder and its underlying mechanism to both the adolescent and the parent.

In our experience, the adolescent's interest and attention is captured when the physician announces the diagnosis, confirms the adolescent's experience of severe pain, and provides precise information about the disorder. For example, the physician will explain how balloons can elicit early visceralgia and show PET scans (cool!) demonstrating current knowledge of the site of visceral pain perception in the brain. The physician tends to refrain from using the word "stress" and spends considerable time explaining how information to the brain goes unnoticed but induces gastrointestinal symptoms. The physician frequently uses the example of "tasting a lemon," which induces a sour taste, excretion of saliva, the swallowing reflex, and esophageal contractions. Using this example, adolescents will acknowledge that the next time they simply see a lemon they might get the same reaction in their mouths. They begin to understand the mechanism of unconscious reactions when they recognize that they could have a sudden and surprising sour taste in their mouth while busy talking with friends. In essence, they come to understand that they were unaware that their eyes had perceived the lemon but the information was nevertheless sent unnoticed to their brain. This example makes it easier to obtain the adolescent's participation in the treatment process, beginning by recording the circumstances around the appearance of pain in a symptom diary. There are numerous other examples that can be used, such as the association of pain and diarrhea each morning before a swimming competition in a youngster who once contracted viral gastroenteritis in the middle of a pool, or the occurrence of severe abdominal pain at the sight of beer bottles in a young girl whose alcoholic father was beating her. The understanding by adolescents and their parents of unnoticed information leading to surprising physical reactions constitutes the first step to rehabilitation.

The ultimate challenge is to help adolescents assume full responsibility for their own rehabilitation, at the same time as providing medication, information on diet, and when necessary, psychological support. Herein resides another challenge. Improvement of the adolescent's symptoms is often

related to parents' acknowledgment of problems in their own lives or in the family that might be affecting their child. To assess parents' readiness to discuss and work on these issues, the psychologist will usually see the entire family at least once during the evaluation and make appropriate recommendations. Regardless of parents' willingness to explore and resolve family or personal problems, the psychologist always attempts to establish a working alliance with adolescents to address their own issues. School constitutes a major source of concern for most teenagers and school absence (sometimes for months) is not rare in adolescents with severe IBS. In our clinic, antidepressants are often prescribed to adolescents with moderate to severe cases of IBS who are missing school for protracted periods. Helping teenagers return to school is never easy, but setting attainable goals for reintegration within a reasonable time frame, as well as harnessing the cooperation of teachers, augurs well for success. Ultimately, seeing adolescents with IBS return to their normal daily routine and regain their youthful energy is an infinite reward for the treatment team that has the privilege to accompany them during rehabilitation.

References

1. Vanner SJ, Depew WT, Paterson WG, et al. Predictive value of the Rome Criteria for diagnosing the Irritable Bowel Syndrome. Am J Gastroenterology 1999;94:2912-17.
2. Thompson WG, Heaton KW, Smyth GT, et al. Irritable bowel syndrome in general practice: Prevalence, characteristics, and referral. Gut 2000;46:78-82.
3. Drossman DA, Li Z, Andruzzi E et al. US householder survey of functional gastrointestinal disorders: Prevalence, sociodemography and health impact. Dig Dis Sci 1993; 38:1569-80.
4. Drossman DA, Creed FH, Fava GA et al. Psychosocial aspects of the functional gastrointestinal disorders. Gastroenterology International 1995;8:47-90.
5. Apley J, Nash N. Recurrent abdominal pains: A field survey of 1,000 school children. Arch Dis Child 1958;33:165-70.
6. Hyams JS, Treem WR, Justinich CJ et al. Characterization of symptoms in children with recurrent abdominal pain: Resemblance to irritable bowel syndrome. J Pediatr Gastroenterol Nutr 1995;20:209-214.
7. Hyams JS, Burke G, Davis PM et al. Abdominal pain and irritable bowel syndrome in adolescents: A community-based study. J Pediatr 1996:129:220-6.
8. Hyams JS, Hyman PA, Rasquin A. Childhood recurrent abdominal pain and subsequent adult irritable bowel syndrome. J Dev Behav Pediatr 1999;20:318-9.
9. Walker LS. Pathways between recurrent abdominal pain and adult functional gastrointestinal disorders. J Dev Behav Pediatr 1999;20:320-2.
10. Rasquin-Weber A. Functional GI disorders in children and adults: Is there a continuum? In P Hyman (ed), Pediatric functional gastrointestinal disorders. New York: Academy Professional Information Services, 1999.
11. Walker LS, Cuite JW, Duke M et al. Recurrent abdominal pain: A potential precursor of irritable bowel syndrome in adolescents and young adults. J Pediatr 1998;132:1010-5.
12. Schor EK. The influence of families on child health. Family behaviors and child outcomes. Pediatr Clin North Am 1995;42:89-102.
13. Levy RL, Whitehead WW, Von Korff M et al. Intergenerational transmission of gastrointestinal illness behavior. Am J Gastroenterology 2000;95:451-6.
14. Levy RL. Irritable bowel syndrome in twins: Heredity and social learning both contribute to etiology. Gastroenterology 2000;121:799-804.
15. Liu D, Dioro J, Tannenbaum B et al. Maternal care, hippocampal glucocorticoid receptors and hypothalamic-pituitary-adrenal responses to stress. Science 1997;277:1659-62.
16. Al-Chaer ED, Kawasaki M, Pasricha PJ. A new model of chronic visceral hypersensitivity in adult rats induced by colon irritation during postnatal development. Gastroenterology 2000;119:1276-85.
17. Locke GR III, Zinsmeister AR, Talley NJ et al. Familial association in adults with functional gastrointestinal disorders. Mayo Clin Proc 2000;75:907-12.

18. Whitehead WE, Crowell MD, Heller BR et al. Modeling and reinforcement of the sick role during childhood predicts adult illness behavior. Psychosom Med 1994;56:541-50.
19. Walker LS, Greene JW. Children with recurrent abdominal pain and their parents: More somatic complaints, anxiety, and depression than other patient families? J Ped Psychol 1989;14:231-43.
20. Garber J, Zeman J, Walker LS. Recurrent abdominal pain in children: Psychiatric diagnoses and parental psychopathology. Am Acad Child Adolesc Psychiatry 1990;29:648-56.
21. Rasquin-Weber, A, Walker, L, Caplan-Dover A. The biopsychosocial approach to pediatric functional gastrointestinal disorders. Workshop presented at the Fourth Symposium on Functional GastrointestinalDisorders, Milwaukee, March 2001.
22. Walker LS. The evolution of research on recurrent abdominal pain: History, assumptions and a conceptual model. In P.J. McGrath & G.A. Finley (eds.), Chronic and recurrent pain in children and adolescents. Seattle: International Association for the Study of Pain, 1999.
23. Walker LS, Garber J, Greene JW. Psychosocial correlates of recurrent childhood pain: A comparison of pediatric patients with recurrent abdominal pain, organic illness, and psychiatric disorders. J Abnorm Psych 1993;102:248-58.
24. Drossman DA, Leserman J, Nachman G et al. Sexual and physical abuse in women with functional or organic gastrointestinal disorders. Annuals of Internal Medicine 1990;113:828-33.
25. Sigman T, Dover A, Duffy K et al. Chronic abdominal pain in children: Beliefs and expectations. Gastroenterology 1998;114:A83

CB #7080 BIOINFORMATICS BUILDING ▪ CHAPEL HILL, NC 27599-7080 ▪ PHONE 919.966.0144 ▪ FAX 919.966.8929
DOUGLAS DROSSMAN, CO-DIRECTOR: 919.966.0142 ▪ WILLIAM WHITEHEAD, CO-DIRECTOR: 919.966.6708
CECIEL ROOKER, CENTER ADMINISTRATOR: 919.966.4847
WWW.MED.UNC.EDU/IBS