Functional Recurrent Abdominal Pain in Children and Adolescents

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The problem of "unexplained" abdominal pain

Without thinking much about it, most of us expect that doctors will be able to "explain" our aches, pains, and complaints by finding some sort of tissue damage or disease that causes our discomfort. Despite such expectations, many of us have learned that not all physical suffering can be neatly explained by a physical examination or by medical tests and procedures. Doctors call physical disorders that are real but not caused by tissue damage "functional" disorders. Children with *recurrent abdominal pain (RAP)* and their families struggle with this sometimes frustrating and confusing situation every day. The vast majority of children with RAP, probably over 90%, do not have a serious disease that could shorten their life or cause tissue damage to the gut or gastrointestinal system (meaning the esophagus or food tube, the stomach, and the intestines). In the absence of clues to serious disease like blood in bowel movements or vomit, low blood count (anemia), fevers, weight loss or poor growth, persistent vomiting, or pain that repeatedly awakens the child from sleep, children with RAP are unlikely to have a serious physical disease.

What is functional recurrent abdominal pain (RAP)?

Functional RAP refers to chronic or recurrent bouts of abdominal pain (i.e., at least three bouts in a three month period) that are bad enough to interfere with a child's routine activities and daily life, but which are not caused by tissue damage or serious inflammation. RAP is a common problem affecting between 7% and 25% of school aged children and adolescents, and is one of the most common problems seen by professionals who care for children, including teachers, school nurses, and physicians. Boys and girls are just as likely to be affected before the teenage years, with teenage girls complaining more about RAP than boys. Older children and teenagers complain more often about stomachaches than young children, with one study finding that 8% of middle and high school students reported seeing a doctor for stomachaches during the previous year.

Why be concerned about RAP?

The pain is real. The good news is that the pain suffered by children with functional RAP is not a signal of damage to the stomach or intestines. The bad news is that children with RAP suffer and the pain interferes with their day-to-day life. It hurts.

The problem is real. Though many children with RAP remain excellent students in spite of the pain, children with RAP are more likely to miss school or not perform as well as their peers. They may become more withdrawn socially and avoid the kinds of challenges and activities that help children grow into self-assured and productive adults. The overwhelming majority of affected children come from caring families who want to find ways to help, but parents may feel helpless and not know where to turn.

The need for help is real. Children with RAP make more visits to doctors than children without stomachaches, and studies suggest that abdominal pain is the chief complaint for 2% to 4% of all pediatric office visits. Affected children and their families sometimes feel misunderstood by health care professionals and school officials. What's more is that the pain can become a big worry, especially for parents, who may be concerned that the child is suffering from a life threatening disease or that each bout of pain is a warning sign that damage is occurring somewhere in the body. Such fears in parents and doctors can put children with RAP at risk to undergo potentially dangerous medical tests, procedures, or treatments (even surgical procedures) that they don't need.

A clue to other problems. Children with RAP commonly suffer from other physical symptoms, including headaches, other aches and pains, and feelings of dizziness or tiredness. They are also much more likely to be prone to fears and worries than other children their age, and somewhat more likely to appear sad or irritable. A few studies have shown that about 4 of 5 children brought to see a doctor for RAP will have an anxiety disorder and 2 of 5 will suffer from a depressive disorder. While it would be easy to jump to the conclusion that RAP causes the feelings of anxiety and depression, or the reverse, it is probably not that simple. The same sorts of vulnerabilities that could make children prone to RAP might also put them at risk for anxiety, depression, or headaches.

A clue to future problems. Adults with a history of RAP in childhood are more likely to suffer from functional abdominal pain, anxiety and depressive disorders, and worries about illness and physical health than those with no history of RAP.

Are there different types of functional RAP?

Because doctors are trying to learn more about functional RAP, guidelines (Rome II) have been developed for subtypes of functional RAP based on characteristics of the abdominal pain. When the child's belly pain improves after a bowel movement and/or is associated with a change in bowel habits like diarrhea, constipation, or feeling the need to rush to the bathroom to avoid an accident, a child with RAP is said to suffer from *irritable bowel syndrome (IBS)*. Children with pain above the belly button who do not have bowel complaints consistent with IBS are diagnosed with *functional dyspepsia (FD)*, while those with episodic pain accompanied by symptoms and/or family history characteristic of migraine headaches can be diagnosed with *abdominal migraine*, and those with continuous or nearly continuous abdominal pain lasting at least 6 months can receive the unfortunate and potentially confusing label of *functional abdominal pain (FAP)*.

Unfortunately for physicians and researchers, we still don't know if there are meaningful differences between children with one or another subtype of RAP. For example, we still don't know for sure if children with functional RAP who have symptoms of IBS do better or worse over time than those who don't have bowel related complaints, or if one subtype of RAP responds better to a particular treatment than another subtype. It is also true that many children with functional RAP do not fit neatly into one of the subtypes mentioned above.

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What causes functional RAP?

The truth is, we just don't know for sure. Though the exact cause remains a mystery, some clues are emerging. Some research suggests that children with functional RAP may be oversensitive to sensations or feelings coming from the gut and/or more likely to describe the sensations as painful than other children. Doctors call this extra sensitivity to gut sensations *visceral hyperalgesia.* This tendency may be inborn or could develop later in life, sometimes after an infection or inflammation of the gut that has long since healed. Children who are more sensitive to gut sensations or who are more likely to interpret sensations from the gut as threatening signals that something is wrong with the body would probably be more likely to experience and/or complain about stomachaches.

Can stress cause RAP?

This is not a simple question. In the end, it may turn out that children with RAP are simply more "sensitive" than other children, perhaps both physically and emotionally. Some parents and even some children with RAP notice that stress can sometimes trigger the pain. It may also be true that at least some children with RAP are more likely to react to stress with abdominal pain or have more problems coping with stress than other children. Research has found that many children with RAP are prone to become distressed when faced with unexpected life events and view new experiences as threatening more often than pain-free children. Such emotionally sensitive children with RAP appear to be more likely to experience abdominal pain when dealing with the hassles of everyday than children with more resilient personalities.

Is the problem source in the gut or the brain?

The temptation here is to speculate that the answer is simply "yes," since there is reason to suspect that RAP is a problem involving both the gut and the brain. The gut has its own nervous system that develops from the same cells in the embryo that give rise to the brain. The same parts of the brain process both physical pain and emotions in many instances. Visceral hyperalgesia is likely influenced by body chemicals like *serotonin* that function as neurotransmitters in both the gut and the brain. Scientists once thought that serotonin was only an important chemical messenger in the brain, but have since learned that over 90% of the body's serotonin is found in the gut, where it is involved in pain signaling and in the control of intestinal movements. Serotonin is likely to be important in a variety of illnesses such as irritable bowel syndrome (IBS), migraine, anxiety, and depression.

What is known about treatment?

Need for research. Because RAP is a real problem that can seriously interfere with a child's life, it is important to find effective treatments. Unfortunately, there is not enough scientific evidence to guide doctors and families about what treatments work best and what treatments work best for specific types of children. In addition, because children with RAP commonly suffer from gastrointestinal symptoms besides pain, as well as other physical and emotional symptoms such as headaches, anxiety, or depression, finding a single treatment that addresses all of the symptoms experienced by any given child with RAP may not be so easy. Much needs to be learned.

Diet. Though many doctors and families have suspected that RAP could be caused by a lack of dietary fiber or by lactose intolerance, dietary treatments with high fiber diets or the elimination of lactose and milk products have not been proven to be effective in studied groups of children with RAP. This does not mean that diet is not important, or that dietary changes may not be helpful for an individual child, but there is little scientific evidence to think that dietary changes alone will have a big impact on most children with RAP.

Medication. Medications such as antispasmodics, acid reducers, and antidepressants are commonly prescribed for children with RAP, but the scientific evidence for their effectiveness is still limited. One study suggested that an acid reducer helped reduce pain in children with functional dyspepsia. Another study found that peppermint oil reduced abdominal pain in children with IBS, but had little effect on other associated symptoms. Pizotifen, a European medication that affects the way the body uses the neurotransmitter serotonin, was found in another small study to be helpful in the treatment of abdominal migraine. Other medications like alosetron and tegaserod that disrupt communication between cells using serotonin as a chemical messenger have been used to treat IBS in adults, but have yet to be studied in children. [Be sure to discuss the use of *any* medication, including over-the-counter or herbal, with your child's physician.]

Psychotherapy. A type of psychotherapy called cognitive-behavioral therapy that pulls together a number of different practical strategies such as education of the child and family about RAP, self-monitoring of the symptoms, training in coping with the pain, rewards for healthy behaviors, and the use of self-management techniques such as relaxation training has had encouraging results in a few small trials for children with RAP.

What things can children with RAP and their families do to help?

Find a doctor you can trust. Having a single physician who knows the child well, has credibility, and coordinates care can be especially reassuring and useful. Many families are concerned that "the doctors don't know what is wrong" since children with RAP do not have a disease in the traditional sense, meaning that the symptoms cannot be "explained" by the presence of tissue damage or abnormal findings from laboratory tests and procedures. Reassurance that there is no life threatening disease present is important, and it can be a comfort to know that the child's abdominal pain is not an indication that tissue damage is taking place in the gut, but patients and families deserve to know what the problem is and what the child "has" before moving forward. Diagnosis should precede treatment.

Education. Children with RAP and their families should learn as much as possible about RAP, including what we know and what we don't know, and should be encouraged to ask questions of health care professionals. It is very important for children and families to understand what the problem truly is, and that health care professionals see many children with identical problems each day. This can help validate the experiences of patients and families, and can help prevent them from worrying needlessly that a rare or unusual disease has been missed. Knowledge can indeed be powerful.

Ellyn Satter ASSOCIATES

Weaning Your Baby(TG)

When you start feeding your baby solid foods, you start weaning him from breast or bottle. Weaning doesn't have to be hard or painful. Think of it as a natural part of your baby's growing up. As he gets older, he learns more grown-up ways of eating and leaves his baby ways behind.

What to expect
Weaning doesn't happen all at once. You wean your baby little-by-little, beginning around age 6 months, when you introduce him to solid foods. Weaning ends when your child can eat table foods and drink from a cup and is not being nipple-fed anymore. That can be when he's around 12 months old.

How to wean
After your child is eating table foods, don't offer him a breast- or bottle-feeding at a meal. Let him fill up on solid foods and breastmilk or formula from a cup. He won't miss his nipple-feeding, because he'll be so interested in table foods.

When you're weaning your baby, it's all right to use nipple-feeding instead of a *snack*. But after the first year, don't use a breast- or bottle-feeding to replace a *meal*.

Weaning during illness
If your baby is sick or teething, he may want to go back to breast-feeding or bottle-feeding for a while, even if he's almost completely weaned. Don't worry. When he's feeling better, he'll lose interest in nipple-feeding again.

Weanling milk
Weaning also means switching your baby from breastmilk or formula to some other kind of milk. Around the end of the first year, when he's well-established on table food, he'll no longer need the extra vitamins and minerals provided by breastmilk or formula. At that point, it's OK to switch him to whole pasteurized milk. After age 2, you can serve your child either whole milk or 2% milk, but *not* 1% or skim milk. Skim milk and 1% milk lack the fat he needs for energy.

Juice and milk from a cup
Your baby may not drink as much milk when he's first weaned from the nipple. Don't worry about it. Just keep offering (not forcing) milk or formula from a cup at mealtime. He'll start to drink more when he gets better at drinking from a cup.

When you start your baby on fruit juice, give him the juice at snack time in a cup, not a bottle. Having juice in a cup will help him get better at using a cup and keep him from getting stuck on the bottle.

Weaning after the first year
Many children keep on with an early-morning or late-night breast-feeding or bottle-feeding long after they've been weaned the rest of the day. Generally, it's not a problem to nipple-feed when your child is over a year old, as long as it doesn't spoil meals. But don't let your baby go to sleep with milk (or any other liquid) still in his mouth—he'll develop *baby bottle tooth decay*. If he falls asleep during a feeding, move him around a little so that he swallows anything left in his mouth.

Bottle-feeding or breast-feeding abuse
If you let your baby breast-feed or use a bottle rather than learn how to eat meals, he may drink so much milk he won't get the other nutrients he needs. If you let him carry a bottle around, using it for a pacifier, he'll beg for a bottle all the time. Using a bottle that way spoils meals and could rot his teeth. He should have his bottle and be done with it.

Your best chance to wean
Sometimes babies get ready before their parents do to give up the breast or bottle. Bottles are handy, and cuddling a baby while you feed is warm and close. It *is* important to wean your baby when he's ready. But don't wean too quickly, and don't stop cuddling your baby.

If you start weaning your child when you shift him to solid foods, he'll accept the change. It will seem natural to him then. Waiting until later may mean more struggles for both of you.