

Psychosocial Problems and Childhood Recurrent Abdominal Pain

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Objective: Recurrent abdominal pain (RAP) is a challenging problem in general pediatrics. The present study aimed to assess psychosocial problems associated with children with RAP.

Material and Method: Children aged 5-15 years with symptoms of abdominal pain for more than 3 months, interfering with their daily life and activities and control children were consecutively enrolled. Psychosocial assessment was obtained by using a semi-structured interview and the Pediatric Symptom Checklist (PSC). Complete physical examination, basic investigations, and esophagogastroduodenoscopy was performed in children with RAP.

Results: Forty-two children with RAP and 45 controls were enrolled into the study. With age and family demographically controlled, psychosocial problems and the PSC scores in children with RAP were not significantly different from those in controls. Psychosocial problems related to RAP could be the primary etiology in some cases, but may be consequent or coexist.

Conclusion: The findings in the study suggest a biopsychosocial approach in children with RAP. Psychosocial assessment should be considered even in RAP with identified organic findings.

Keywords: Recurrent abdominal pain, Psychosocial assessment

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Recurrent abdominal pain (RAP) is a common and challenging problem for physicians who take care of children and adolescents, in which as many as 10-15% of school-age children could have experienced this condition^(1,2). It was firstly defined by Apley and Naish as three or more episodes of pain, interfering with normal activities, and occurring over a period of three months⁽³⁾. Although only 8% of the cases had organic abnormalities reported in that study, with the advance of medical technologies, there has been increasing report of a higher prevalence of the organic conditions in recent studies⁽⁴⁻⁸⁾. Therefore, organic diseases should be properly evaluated. If discovered, they should be appropriately treated.

Children with RAP are usually school age with slight female predominance. The pain is usually

recurrent, rather than constant, and may be associated with nausea, vomiting, and headache. There are three clinical presentations, isolated paroxysmal abdominal pain, abdominal pain associated with symptoms of dyspepsia and abdominal pain associated with an altered bowel pattern⁽⁹⁾. Children with RAP are classified into three groups, including those who have organic diseases, those who have psychological etiology and the group with functional abdominal pain⁽¹⁰⁾. Because it also has been suggested that children with RAP, who are considered to have a functional etiology, may result from abnormal autonomic response to stress^(4,11,12), some pediatric gastroenterologists suggest a classification of functional gastrointestinal disorders associated with recurrent abdominal pain, known as the ROME II Guidelines^(13,14). Possible assumptions that these children are often worried about their performance at school or being stressed by parental pressure have been proposed, however, there has been no definite supporting evidence. The episodes appear to be precipitated by stress and

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anxiety in some cases^(15,16) but also persist by secondary gain from family and school following organic illnesses. No matter what causes the psychological problems, they can affect the child's schooling, peer relationships, sports, and daily activity, as well as family events and social life. Therefore, in children with functional abdominal pain, besides reassuring the family about the absence of potential organic causes, psychosocial assessments should be carefully considered^(17,18). These include cognitive-behavioral therapy⁽¹⁹⁾, determining precipitating stress, teaching stress management skills to the child and family, the elimination of secondary gains and advising the child to participate in normal activities such as attending school, as possible.

The objective of the study was to determine the psychosocial functioning of children with RAP. The difference in overall functioning between RAP children with and without identified organic diseases was also evaluated.

Material and Method

Study sample and design

A sample of 44 children and adolescents with RAP in the pediatric gastroenterology clinic at Chiang Mai University Hospital and 45 pain-free controls aged 5-15 years were consecutively enrolled into the study during 2000-2002. Children with RAP were required to have experienced three or more episodes of abdominal pain, severely enough to interfere with their daily activities in the past three months⁽³⁾. Control children were free of chronic pain and did not have chronic illnesses. Children, whose RAP symptoms were explained by other physical diseases, were excluded. Demographic and medical history data were obtained through an interview.

The semi-structured interview for psychosocial information and a parent-completed screening questionnaire were administered by a single investigator. The psychosocial screening in the study was assessed using the Pediatric Symptom Checklist (PSC)^(20,21), which consists of 35 items on a 3-point scale (not true, sometimes true, and often true). The PSC is a feasible tool to screen for psychosocial problems in school-age children.

Complete physical examination, basic investigations and esophagogastroduodenoscopy with biopsy were performed in children with RAP. All tissue biopsies from the duodenum, stomach and esophagus, as well as suspected mucosal lesions were sent for histologic study to further identify

other possible organic causes. Warthin-Starry and polyclonal antibody stains for *Helicobacter pylori* infection were carried out. One biopsy from the gastric antrum was tested for the presence of *H. pylori* using a rapid urease test (Pronto Dry, Medical Instrument Crop, Solothurn, Switzerland). A written Informed consent was obtained from the parents. The study was approved by the Ethics Committee of the Faculty of Medicine, Chiang Mai University.

Statistical analysis

Data were collected for statistical analysis using the SPSS program. Chi-square or Fisher's exact test, as appropriate and student t-test were used to compare the two variables. A p-value of < 0.05 was considered as statistically significant.

Results

Forty-four children with RAP were enrolled into the study, in which two cases did not undergo further investigations because psychological diagnoses were obtained during the initial interviews. One child had symptoms of generalized anxiety disorder and the other was diagnosed as somatoform disorder. Thus, 42 patients underwent upper gastrointestinal endoscopy with biopsy, as well as testing for *H. pylori* infection. The median age was 10.6 years old with a male-female ratio of 1: 2. Demographic characteristics between RAP and control group are shown in Table 1, which were considered comparable. In the study, the PSC score and behavioral problems reported by parents were not significant different between the two groups (Table 2).

Of the 42 RAP children, 21 cases had identified organic pathologies, including *H. pylori* gastritis, duodenitis, parasitic infestation, reflux esophagitis, bowel vasculitis, gastroparesis, prolapsed gastropathy, and carcinoma of stomach; whereas the others were diagnosed as functional gastrointestinal disorders according to the ROME II classification, such as cyclic vomiting syndrome, irritable bowel syndrome, functional constipation, and functional abdominal pain. RAP children with organic pathology were significantly older than those without. Again, there was no statistically significant difference of the PSC score, behavioral problems reported by the parents and related psychosocial problems in the RAP children with and without organic diseases (Table 3). The psychosocial problems related to children with RAP included secondary gains from family and school, moving of family members, parental over-stimulation,

Table 1. Sociodemographic characteristics of children with RAP and controls

	RAP (n = 42)	Controls (n = 45)	p-value
Age (year) \pm SD	10.3 \pm 2.8	10.0 \pm 3.0	0.69
Gender, % female	66.7	48.9	0.09
Father age (year) \pm SD	40.4 \pm 7.7	39.1 \pm 4.7	0.36
Mother age (year) \pm SD	38.3 \pm 5.5	36.7 \pm 4.0	0.13
Father education (year) \pm SD	8.7 \pm 5.4	8.4 \pm 4.3	0.79
Mother education (year) \pm SD	8.4 \pm 5.0	7.8 \pm 4.1	0.58
Marital status, % married	83.3	86.7	0.88
Number of children	2.0 \pm 1.0	2.2 \pm 0.7	0.23
Duration of pain (month) \pm SD	7.6 (3-24)	-	

Table 2. Psychosocial characteristics of children with RAP and controls

	RAP (n = 42)	Controls (n = 45)	p-value
PSC score	10.1 \pm 4.8	9.7 \pm 5.7	0.75
Behavioral problems reported by parents	4	3	0.62

Table 3. Psychosocial characteristics of RAP with and without identified organic causes

	Organic disorders (n = 21)	Functional disorders (n = 21)	p-value
Age (year) \pm SD	11.2 \pm 2.3	9.4 \pm 3.1	0.03
Gender, % female	61.9	71.4	0.51
Father age (year) \pm SD	41.8 \pm 9.1	39.2 \pm 6.2	0.31
Mother age (year) \pm SD	38.5 \pm 6.2	38.1 \pm 4.9	0.78
Duration of pain (month) \pm SD	9.1 \pm 8.1	6.2 \pm 3.9	0.16
PSC score \pm SD	10.4 \pm 6.2	9.8 \pm 3.1	0.68
Behavioral problems reported by parents	2	2	0.69
Related psychosocial problems	5	6	0.73

paternal alcohol use, marital problems, change of schools and school refusal symptoms which had occurred after the episode of the pain symptoms. The study also demonstrated that children with organic findings tended to experience longer duration of pain compared to those with functional disorders. Nonetheless, there was no statistically significant difference.

Discussion

It was found in the study that females slightly predominated with RAP when compared to males, as reported in the study by Croffie et al⁽⁴⁾. Additionally, almost half of the RAP children in the study had organic pathology, consistent with the previous studies⁽⁴⁻⁸⁾. *Helicobacter pylori* gastritis

comprised the most common organic disease. Although Bode et al demonstrated that the prevalence of RAP in *H. pylori* children was not different from that in non-infected children, organic diseases other than *H. pylori* infection were not investigated in that study⁽²²⁾.

Similar to the study of Stordal et al, psychosocial problems noted in children with RAP in the study were not different from controls⁽⁶⁾, although Campo et al reported that children with RAP had a high level of anxiety and depression⁽²³⁾. Moreover, Liakopoulou-Kairis et al showed that as many as 81% of children with RAP had a psychiatric diagnosis⁽²⁴⁾. This might result from different cultural backgrounds regarding health perspectives between Thai population compared with the Western countries. Apart from

the association between organic diseases and psychological impacts, emotional problems have been reported to be associated with irritable bowel syndrome⁽²⁾, however, this conclusion was not made by the study by Nygaard et al⁽⁵⁾. Conversely, chronic pain may lead to emotional consequences, such as anxiety and distress.

In subgroup analysis, the authors tried to test the hypothesis that RAP is not exclusively a functional gastrointestinal disorder. In the study, the PSC score, behavioral problems reported by their parents and related psychosocial problems in the patients with functional gastrointestinal disorders were not significantly higher than those with organic causes. Hence, this might strengthen the recent speculation stating that recurrent abdominal pain in children is not a purely functional disorder⁽²⁵⁾. Although the organic pathology could not be discovered in all children, we did not perform the investigations searching for any possible abnormality in gastrointestinal motility, which could be potentially contributing to the RAP symptoms. Consequently, it can explain why the PSC scores were not different between the two groups.

There were some limitations in the study, however. First, the study was cross-sectional in nature. It was not possible to establish a systematic study of the outcome responses. The concurrent psychosocial findings could not be distinguished to be precipitating or co-existing factors. Secondly, the sample of children with RAP in the pediatric gastroenterology clinic at the authors' institute may not truly represent those in general population settings, as it was noted that there was high prevalence of organic pathology in the authors' series. Lastly, the sample size was not large enough to identify the association of various variables. For children who were diagnosed with functional gastrointestinal disorders, medical investigations helped in reassuring the child and family, whilst teaching stress management resulted in better adjustment and improving the pain symptoms.

In conclusion, since organic diseases, functional disorders, and psychological problems may coexist, a biopsychosocial approach that is concerned with the disease and the illness, the child's sense of suffering and disability, should be emphasized^(26,27). It was suggested in the study that organic pathology was more common than previously thought. Biopsychosocial approach would be appropriate for children with RAP.

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ปัญหาทางจิตสังคมกับเด็กที่ปวดท้องเรื้อรัง

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วัตถุประสงค์: ปัญหาปวดท้องเรื้อรังเป็นปัญหาหนึ่งที่พบในผู้ป่วยเด็กทั่วไป การศึกษานี้ทำเพื่อประเมินปัญหาทางจิตสังคมที่เกี่ยวข้องกับเด็กที่ปวดท้องเรื้อรัง

วัสดุและวิธีการ: ศึกษาเด็กอายุ 5-15 ปี ที่มีอาการปวดท้องมานานกว่า 3 เดือน และมีผลรบกวนต่อชีวิตประจำวัน และการทำกิจกรรมต่าง ๆ กับกลุ่มเด็กควบคุม การประเมินทางจิตสังคมทำโดยการสัมภาษณ์ และใช้แบบประเมิน Pediatric Symptom Checklist (PSC) ทำการตรวจร่างกาย ตรวจทางห้องปฏิบัติการเบื้องต้น และตรวจด้วยกล้องส่องทางเดินอาหารในเด็กที่ปวดท้องเรื้อรัง

ผลการศึกษา: เด็กที่ปวดท้องเรื้อรังจำนวน 42 คน และกลุ่มควบคุม 45 คนเข้าร่วมการศึกษา เมื่อควบคุมปัจจัยทางอายุ และลักษณะครอบครัว พบว่าปัญหาทางจิตสังคม และคะแนนจากแบบประเมิน PSC ของเด็กที่ปวดท้องเรื้อรัง ไม่มีความแตกต่างอย่างมีนัยสำคัญจากกลุ่มควบคุม ปัญหาทางจิตสังคมที่เกี่ยวข้องกับการปวดท้องเรื้อรัง อาจเป็นสาเหตุหลักในบางราย แต่อาจเป็นผลตามมาหรือเพียงพบร่วมกันก็ได้

สรุป: การศึกษานี้เสนอการใช้วิธีการดูแลแบบ biopsychosocial ในเด็กที่ปวดท้องเรื้อรังควรพิจารณาประเมินทางจิตสังคมร่วมด้วยแม้การปวดท้องนั้นพบพยาธิสภาพทางกายก็ตาม
