Abdominal Pain in a University Family Practice Setting

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Abdominal pain is one of the most common complaints in the family practice setting. Abdominal pain has been the subject of many studies; however, the focus has been on abdominal pain as a final diagnosis rather than as a symptom or presenting complaint. A retrospective audit examined 133 charts of patients 18 years of age or older presenting to the University of Iowa Family Practice Center from July 1976 to October 1978. Abdominal pain, etiology undetermined, accounted for approximately one half of the final diagnoses. The patients tended to be young and female. Almost one half of the patients were seen only once for the problem. Conclusions concerning management are drawn, and suggestions for further studies are made.

Abdominal pain is one of the most common complaints in the family practice setting.[1-4] Despite its frequency, abdominal pain has received little attention as a symptom. Some studies have characterized those individuals with chronic abdominal pain.[5,6] Although these individuals represent an important group to study, they constitute only a small proportion of those with abdominal pain. Other studies have examined abdominal pain located in a specific area, such as the epigastrium. Gear and Barnes[7] described the causes of epigastric pain in a general practice in England. Unfortunately, symptoms, patient characteristics, and other relevant factors were not correlated with the final diagnoses. Brewer et al[8] examined nontraumatic abdominal pain as a symptom in a university emergency room setting. In addition to listing the final diagnoses of 1,000 consecutive patients with abdominal pain, the authors correlated final diagnoses with symptomatology, physical findings, laboratory findings, and radiological findings.

The workup for abdominal pain can be time-consuming and expensive, and the diagnostic technology available to the physician in the evaluation is at times overwhelming. Within the past ten years, two well-known gastroenterologists

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have emphasized the problems in the evaluation of the patient with abdominal pain.[9,10] Spiro[9] and Lee[10] state that abdominal pain is a complex problem and that the word *pain* holds different meanings for different people. Physicians need guidelines to help them through the workup. Guided by a good history and physical examination and some general guidelines, both Spiro and Lee state, the clinician may avoid unnecessarily long and expensive workups. The question is, what general rules apply in a family practice setting?

The purposes of this study were (1) to describe a sample of patients presenting with abdominal pain in a family practice setting, (2) to refine methodologies for further study of the problem of abdominal pain, and (3) to develop guidelines for the workup of abdominal pain.

Methods

The study was conducted in a retrospective fashion involving the period from July 1976 to October 1978. Charts of patients with abdominal pain and other diagnoses that were likely to have associated abdominal pain were identified from the University of Iowa Family Practice Center's computerized record system, which utilizes the International Classification of Health Problems in Primary Care (ICHPPC) coding system. The following categories were identified: (1) abdominal pain, (2) diseases of the gastrointestinal system, (3) gastrointestinal tumors, (4) diseases of the genitourinary system, (5) symptoms or signs of the gastrointestinal or genitourinary system, and (6) intestinal disease, proven or presumed infective, viral, or unknown. All patients 17 years of age or less were excluded. In this manner, approximately 250 charts were identified.

The University of Iowa Family Practice Center is located in Iowa City, a midwestern university community with a population of approximately 50,000. During the time of the study, the center was the practice site for faculty and fellows of the Department of Family Practice. Residency training occurred at other sites.

An experienced medical abstractor (L.M.) reviewed the charts. Because of the exploratory nature of the study, charts were abstracted if the patient had either a primary or secondary complaint of abdominal pain. A primary complaint was the chief complaint that prompted the patient to seek medical care. A secondary complaint was an associated symptom that the patient did not identify as the main symptom for which he or she sought medical care. Abdominal pain was identified as a primary or secondary complaint in 134 charts. The major reason for exclusion was urinary tract infection without abdominal pain.

The charts were abstracted for demographic factors, symptoms, physical findings, laboratory data, initial diagnosis, and subsequent follow-up. The final diagnosis was required to be documented by radiologic or laboratory studies or surgical or pathologic specimens with the following exceptions: (1) acute gastroenteritis, presumed viral, diagnosed by history and clinical findings,[11] (2) pelvic inflammatory disease, diagnosed by history and the clinical finding of tenderness upon motion of the cervix,[12] (3) irritable bowel syndrome, diagnosed in young patients (40 years or younger) by history and clinical findings, including a stool guaiac, and in older patients (40 years or older) diagnosed by history and clinical findings in addition to appropriate laboratory and radiologic workup,[13] and (4) abdominal pain, etiology undetermined, represented either as an initial diagnosis with workup in progress or as a diagnosis of exclusion. In addition, if the patient reported a previous workup for the problem of abdominal pain, the diagnosis from that workup was accepted without documentation. If not documented, the final diagnosis was recorded as abdominal pain, etiology undetermined. All diagnoses were reviewed by the primary investigator (A.A.). The initial 50 charts were reviewed jointly by both investigators. In addition, 20 percent of the remaining charts were reaudited by the primary investigator. Agreement between reviewers was greater than 99 percent.

One chart was excluded from final analysis. This patient had a documented parasitic infection in addition to abdominal pain, etiology undetermined. It could not be determined whether the signs and symptoms were due to the infestation or were of undetermined etiology.

The data were coded and analyzed using the statistical analysis system (SAS) computer program.[14]

Table 1. Final Diagnoses

Diagnosis	Number	Percent
Abdominal pain, etiology undetermined	70	52.6
Pelvic inflammatory disease	10	7.5
Irritable bowel syndrome	10	7.5
Acute gastroenteritis, presumed viral	8	6.0
Diarrhea, etiology unknown	5	3.8
Ulcerative colitis	3	2.3
Cystitis	3	2.3
Duodenal ulcer	2	1.5
Ovarian cyst	2	1.5
Cholelithiasis	2	1.5
Pyelonephritis	2	1.5
Endometrioma	1	.8
Infectious hepatitis	1	.8
Fibrosarcoma, mesentery	1	.8
Depression	1	.8
Appendicitis	1	.8
Hiatal hernia	1	.8
Diverticular disease	1	.8
Constipation	1	.8
Megaduodenum/superior mesenteric artery compression syndrome	1	.8
Urinary calculus	1	.8
Dysmenorrhea	1	.8
Costochondritis	1	.8
Heartburn	1	.8
Dyspareunia	1	.8
Ovarian mass	1	.8
Drug reaction	1	.8
	133	100%*

*Total is not exactly 100 percent because of round-off error

Results

Table 1 lists the final diagnoses of the 133 patients studied. The diagnoses of abdominal pain, etiology undetermined, pelvic inflammatory disease, irritable bowel syndrome, acute gastroenteritis, and diarrhea, etiology unknown, made up 77.4 percent of the diagnoses. Diarrhea, etiology unknown, was a self-limited disorder, usually resolving within one month.

There was a statistically significant female predominance (105 women, 28 men) when compared with the total clinic population ($\chi^2 = 9.57$, $P < .005$). The average age of the women was 28.9 years, whereas the average age for the men was 36.0 years. The difference in mean age was statistically significant ($t = 3.20$, $P < .002$). After excluding conditions such as pelvic inflammatory disease and other gynecologic problems, women still outnumbered men by approximately 3 to 1.

Figure 1 shows the distribution by age of the entire clinic population and of patients with abdominal pain. Approximately 60 percent of the patients with abdominal pain were less than 30 years of age, while 85.7 percent were less than 40 years of age. The age distribution of the patients

with abdominal pain closely matches the age distribution of the entire clinic population.

Abdominal pain was the secondary complaint in those patients with the following diagnoses: acute gastroenteritis—presumed viral, diarrhea—etiology unknown, ulcerative colitis, cystitis, and infectious hepatitis. Thus, abdominal pain was a secondary complaint in 15.2 percent of the cases.

Approximately 75 percent of the patients were seen three or fewer times for their abdominal pain. Nearly one half (47.4 percent) were seen only once. The number of visits ranged from 1 to 11.

One hundred four patients (78.2 percent) were seen for abdominal pain for the first time. Seventeen patients (12.8 percent) were referred for further evaluation or treatment. The most frequent referrals were to surgeons or gynecologists for surgical evaluation of an already identified problem. Only one patient was referred as a diagnostic dilemma.

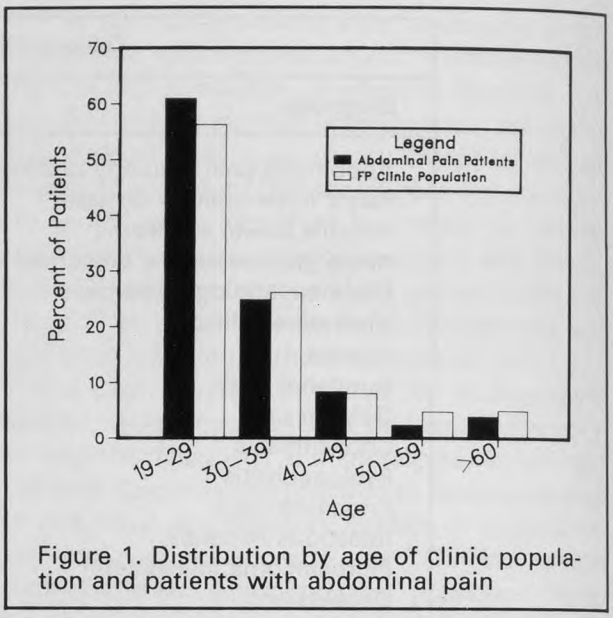

Figure 1. Distribution by age of clinic population and patients with abdominal pain

Discussion

The typical patient presenting with abdominal pain in this setting is a young woman who has no demonstrable disease. If the number of visits for the problem is an indication of the duration of the complaint, then the complaint is self-limited. The implication for management of this problem is for symptomatic treatment and observation as the initial approach before pursuing a more lengthy and expensive workup. Of course, if there is a readily apparent, treatable entity, treatment can be begun immediately.

The results of this study agree with previous literature. It is well known that morbidity is higher in women and that women utilize ambulatory services more frequently than men.[15] The finding of a large percentage of patients with no specific disease is also to be expected. Maclay[16] found that 50 percent of patients presenting in an outpatient setting had "functional" complaints. Brewer et al[8] reported that approximately 50 percent of the patients presenting to an emergency room with nontraumatic abdominal pain were undiagnosed. Several studies of dyspepsia indicated that approximately 30 to 50 percent of patients had no demonstrable disease.[7,17,18] In other studies of patients with pain, such as those with headache or backache, a high percentage of pain of undetermined etiology or pain of psychogenic origin was noted.[19-21]

Although in agreement with previously reported studies, the results of this study should be viewed cautiously. While the findings may characterize patients seen at the University Family Practice Center, it may be difficult to generalize the results. The patient population is skewed toward a younger age range. Younger individuals tend to have less "organic" disease,[8,19] such as tumors and diverticular disease, thus accounting for the lack of "organic" disease demonstrated in this study. In addition, there was no standard evaluation or follow-up for the complaint of abdominal pain. The final diagnosis of those individuals who were diagnosed clinically and treated empirically was abdominal pain, etiology undetermined, because objective confirmation of the final diagnosis was required. For example, a patient who presented with epigastric pain may have been treated symptomatically and advised to return only if the pain continued. If the patient had a duodenal ulcer that responded to the treatment, then the patient's duodenal ulcer would have been misclassified as

abdominal pain, etiology undetermined. Finally, it may be argued that one to three visits were not sufficient to do a thorough workup. Perhaps a more definitive diagnosis could have been made if the patient had been seen more often or for a longer period of time.

The retrospective nature of this study does not allow for the documentation of resolution of the complaint of abdominal pain. The limited number of visits may reflect resolution of the pain or persistence of the pain in a patient who decided either to seek care elsewhere or to tolerate the symptom without further medical care. Further studies are needed to determine which is applicable.

Although three fourths of the patients were accounted for by the top four diagnoses, for several reasons no correlation between symptoms, signs, or other patient characteristics and final diagnosis was made. First, as often occurs in a retrospective audit, significant data were missing. It was not possible to distinguish between failure to inquire about a particular symptom and failure to record the answer, thus decreasing the number of cases available for comparison. Second, meaningful comparisons between diagnoses, such as abdominal pain—etiology undetermined and irritable bowel syndrome, were not made because of small numbers of patients. Abdominal pain, etiology undetermined, was not a homogeneous diagnostic category; rather it was a combination of pain entities from different regions of the abdomen. For example, there were approximately 25 patients whose abdominal pain of undetermined etiology was located in the lower abdomen. The conclusions to be drawn from the comparison of those 25 patients with the 10 patients with irritable bowel syndrome are limited. Efforts are presently underway to study a larger number of cases.

Abdominal pain is a frequent complaint in the family practice setting. More studies are needed to further characterize this symptom. A variety of settings, such as private practice, rural practice, and community-based residency practice, need to be examined so that general guidelines for the workup of abdominal pain in a family practice setting can be developed. At present the rural practice sites of the University Family Practice Center are being examined. In addition, a prospective study is planned to ensure more complete data collection and to examine the role of psychosocial factors in abdominal pain.

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