
| RESEARCH ARTICLE

The Diagnosis of Chronic Abdominal Pain in a Primary Health Care Setting: The Importance of Investigations and Clinical Correlation

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| ABSTRACT

IBD and IBS are a common entity of illnesses that may present with common complaints. Abdominal pain is the most common presentation, with 10% present in the PHC setting. The use of history, examination, and investigation must be properly used, with proper clinical correlation is important to not improperly diagnose patients. Moreover, it is important to take patient complaints seriously to avoid improper diagnosis. This care follows a 43-year-old female and her journey of getting a proper diagnosis within the range of 4 years, leading to a decrease in quality of life.

| KEYWORDS

Abdominal Pain; Primary Health Care; IBD; IBS; Aeromedical medicine

| ARTICLE INFORMATION

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1. Introduction

Abdominal pain is a common complaint seen worldwide in hospitals. Such presentation may be acute or chronic in timing, with a wide range of differentials. Due to the high rate of improper diagnosis, a wide range of investigations available in primary healthcare settings (PHC) are available to aid in narrowing down the differentials. Moreover, the use of clinical correlation is important as no single test can diagnose an illness. Thus, it is important to correlate symptoms with the investigation findings.

2. Case Study

A 43-year-old European female, currently working as a commercial airplane pilot, came with complaints of abdominal discomfort after fatty meals associated with multiple episodes of diarrhea for a few months. The patient had a previous malaria and tick fever diagnosis as a child, with no other significant medical history. The patient does not smoke, drinks alcohol in moderation, and is allergic to penicillin. The patient underwent multiple tests, which included a C-Reactive Protein (normal), fecal calprotectin (>1000), and endoscopy\colonoscopy was done and showed a negative biopsy for *Helicobacter Pylori*, with mild acute colitis and tubulovillous adenoma rectal polyp that showed low-grade dysplasia. Although a biopsy did not show elements of inflammatory bowel disease (IBD), specifically Crohn's disease, the patient was treated as such with immunosuppressive including prednisolone and advised to start immunotherapy.

The patient decided to take a second opinion due to the persistence of her symptoms. The patient had a history of consuming nonsteroidal anti-inflammatory drugs for back pain. Therefore, it was thought that the patient had either "low-grade IBD" or irritable bowel syndrome (IBS). The patient was advised to exclude all alternative diagnoses of IBD. The patient was started on mebanazine and to repeat calprotectin and colonoscopy within three months. In the repeated colonoscopy, only internal hemorrhoids were noted, and a magnetic resonance imaging enteropathy showed no acute or chronic changes of Crohn's disease with normal calprotectin. The steroid doses were stopped. Within a year, the patient still had persistent

symptoms, and it impacted her quality of life. A repeated colonoscopy within a year showed normal mucosa; therefore, the patient was diagnosed with IBS. She was started on escitalopram 5mg with the dose increased to 10mg. The patient felt her gastrointestinal symptoms improved, yet she began to have insomnia and dizziness. She was grounded due to the severity of the symptoms.

The patient started to self-medicate with tolperisone and had suicidal ideation and, therefore, was taken to psychiatry. The patient was seen and evaluated with the recommendation to stop escitalopram. The patient's insomnia improved, yet her IBS symptoms reoccurred. The patient was then seen and restarted on escitalopram with proper follow-up in psychiatry and testing. The patient started to feel better, and her symptoms subsided. The patient was given the right to fly again. It is important to note that this case occurred over 4 years (2019 to 2022).

3. Discussion

Abdominal pain is a common complaint that is seen within the primary health care setting (PHC). It impacts pediatrics, adults, and geriatrics age groups with various possible differentials. It has been noted to account for up to 10% of yearly presentations within PHC (1). Due to the wide range of possible diagnoses, it is considered a possible diagnostic challenge due to the vague symptom presentation and the possible chronic onset of the presentation (1). Improper diagnosis, delay in testing, undermining patient complaints, under-testing in females, and more have led to many complications, adverse side effects, and impact on patient quality of life (1-2). It is important to note that gender bias is common within PHC, with most data created based on men (3). Furthermore, it has been noted that physicians tend to undermine female complaints, leading to more likely adverse events and complications (4).

The differential diagnosis for abdominal pain can be seen in Table 1 (5) from surgical, medical, and gynecological cases. Some are considered emergencies, while others are usually noted to be chronic. It is important to note that chronic abdominal pain considerations such as IBD, IBS, etc., may present acutely in case of relapse and pain. It is important in the setting of PHC to take proper history, examination, and investigation before jumping into a diagnosis (6). Patients with IBS, for example, may present with colicky pain associated with chronic diarrhea, constipation, or alternating (6). Recently, Rome IV Criteria has been used for proper diagnosis of IBS, which states (7):

"Recurrent abdominal pain on average for one day/week in the last three months and associated with at least two of the following:

1. *Related to defecation.*
2. *Associated with change in stool frequency.*
3. *Associated with a change in the form of the stool"*

Thus, proper history-taking and examination are important to narrow the differential count and rule out any acute emergencies, as presented in Table 1.

Table 1: Abdominal Pain Differential Diagnosis

Pathological Process	Examples
Inflammation	Appendicitis; diverticulitis; Inflammatory bowel disease; IBS.
Perforation	Perforated ulcer
Obstruction	Bowel obstruction; ureteric colic
Hemorrhage	Ruptured ectopic pregnancy, ruptured ovarian cysts.
Ischemia	Sigmoid volvulus; torsion of gonads (testes and ovaries).

In the differentiation of IBS and IBD, the use of fecal calprotectin has been increasing in usage in PHC settings (8). IBD is the chronic inflammation of the gastrointestinal mucosa, with differences noted in symptoms, duration, areas affected, and biopsy results. IBD consists of Crohn's disease and Ulcerative Colitis. In terms of the paper, the focus will be on Crohn's disease. Fecal calprotectin is a member of the S100 family of proteins, usually seen in neutrophils and associated with antimicrobial effects (9). It is found to be 6 times higher in feces than serum and aids in the diagnosis of gastrointestinal inflammation (9). It is usually used in excluding IBD due to high negative diagnostic predictive values, and more so aids in evaluating the need for urgent endoscopic evaluation in terms of positive results (9). It is important to note that various factors such as age, medication, and day-to-day level variation will impact the results greatly, meaning that a positive or negative value will not be enough for a diagnosis to occur (9). It is important to note that the use of fecal calprotectin is important to decrease the rate of unnecessary referrals to tertiary health care centers, which in turn will decrease the pressure on those hospitals (9). In conclusion, it was noted that fecal calprotectin results can be grouped into the following (seen in Table 2) (10). It is important to note that all

medical research available indicates that PHC should not diagnose nor treat patients with IBD based on such results alone, as the gold standard is the biopsy (10).

Table 2: Fecal Calprotectin Results and Interpretations

Results	Correlation
< 100mcg\g	Indicates the risk of IBD to yet, it is important to still refer to gastroenterology based on age (less than 50 years usually urgently; more than 50 years, routinely). This will indicate the rate of other differentials to be higher.
≥ 100mcg\g	Usually, it should be repeated to indicate the risk of false positive as certain medications such as NSAIDs may increase the risk of false positive.

In terms of treatment of IBS, although a range of medications is available, certain considerations in terms of aeromedical aspects should be noted. According to the Civil Aviation Authority (CAA), certain medications should be cautiously used by aviation employees. Steroids will lead to patients being deemed medically unfit and must be reevaluated within two weeks of being off steroids (11). This is due to the high risk of side effects that will impact his ability during flights. Furthermore, the use of antidepressants is a controversial topic in the CAA (12). A list of sertraline, citalopram, escitalopram, and fluoxetine are the only medications approved for patients to use while flying. Although some medications may affect QT and electrolytes, proper follow-up should be done to decrease the risk of side effects.

4. Conclusion

In conclusion, PHC physicians must not rush in the diagnosis of any chronic illness. Due to the high rates of misdiagnosis and inappropriate referrals, one must exclude all possible causes before treating any illness. Proper history, examination, and investigations must be done to create a safe, positive, and decreased risk of complications in patients seen within the PHC setting.

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