

ABDOMINAL PAIN DIAGNOSTIC APPROACH IN PRIMARY CARE SETTINGS AND FURTHER REFERRAL

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Abstract

With so many distinct causes, abdominal discomfort is a common problem that can be difficult for primary care physicians to diagnose and treat. The link to organ disease is complicated by the various and occasionally ambiguous symptomatology, which can occasionally result in inaccurate diagnoses and diagnostic difficulties. Even though most cases of abdominal discomfort are nonthreatening, a small percentage of individuals have life-threatening illnesses, thus a careful methodology to identification and therapy is required to avoid significant morbidity and death. For primary care physicians, the capacity to appropriately identify abdominal discomfort is a critical skill. Particularly with chronic abdominal pain, there are significant difficulties because of its wide spectrum of diagnosis and the possibility for a lengthy, sometimes unproductive diagnostic workup. When more severe symptoms are not present, the majority of people with persistent abdominal discomfort have benign or physiological illnesses such as irritable bowel syndrome. The process of diagnosis requires a lot of resources, which puts a heavy financial strain on healthcare institutions. In the context of primary care, a methodical evaluation process for patients with persistent abdominal discomfort is covered in this article. The basis for directing additional diagnostic tests is a comprehensive history and physical assessment. Limiting and customizing diagnostic testing based on clinical presentation, alarm symptom presence, and intensity of symptoms is recommended. This study aims to optimize the workup process, reduce needless testing, and enhance patient outcomes by outlining the diagnostic tools and techniques general practitioners may employ to assess persistent abdominal pain.

Keywords: disease pathophysiology history guidelines, examination guide, diagnostic method, abdominal discomfort, primary healthcare.

Introduction

The International Association for the Study of Pain (IASP) describes pain as an unpleasant emotional and sensory experience that is linked to, or resembles, the discomfort associated with actual or potential tissue damage. Chronic pain refers to a form of discomfort that is ongoing or reoccurs and persists for three months or longer. Medical professionals are primarily responsible for managing chronic abdominal pain, which can be difficult since it requires a thorough workup and a wide differential diagnosis. After the primary care appointment, a percentage of 25–35% of patients are still undiagnosed. Additionally, the fact that this illness is frequently misdiagnosed and that many medical professionals are not aware of the most economical way to proceed with the diagnosis makes it an expensive responsibility of the healthcare system. Abdominal discomfort can result from a variety of gastrointestinal and systemic conditions. To narrow down the range of possible diagnoses and, when necessary, perform additional diagnostic tests, the doctor who provides primary care must consider the wide range of illnesses. A thorough history, a physical checkup, and diagnostic tests specific to the symptoms should all be part of the first workup. An individual should be directed to a

professional if there are noticeable signs since they may indicate an organic condition. However many people with organic problems don't exhibit any concerning signs [1].

Functional gastrointestinal disorders (FGIDs) and disruptions in the gut-brain interface are major contributors to ongoing abdominal discomfort. This category includes conditions like functional dyspepsia (FD), irritable bowel syndrome (IBS), and centrally mediated abdominal pain syndrome (CAPS). These disorders are key sources of chronic abdominal symptoms.

After organic pathology has been completely and firmly ruled out, these explanations ought to be taken into account. For all medical professionals, the ability to examine a patient who presents with abdominal discomfort is critical. Primary care providers may have to postpone treating critically sick patients due to the scientific difficulties of diagnosing and treating patients with abdominal discomfort given the range of symptoms, conclusions, and therapeutic options.

This overview aims to give medical professionals an awareness of the pathophysiological underpinnings and a method for determining the source of abdominal discomfort in people. This review also aims to assist doctors in primary care in systematically exploring the most prevalent variant diagnoses, starting with the essential components of the record and first assessment. A thorough patient history is essential for making multiple diagnoses, particularly because it guides an intensive physical exam that might provide important hints about the cause of the abdominal discomfort [2,3].

Epidemiology

According to a recent US analysis, discomfort in the abdominal is the most prevalent gastrointestinal complaint and one of the main reasons for both hospitalization and outpatient treatment. According to global cross-sectional statistics, the average incidence is estimated to be between 23 and 25 percent; women report abdominal discomfort at a rate of 24 vs men seventeen percent.

In the US, eighty-four percent of individuals with abdominal discomfort consult their primary healthcare provider, and nearly 40 percent visit a gastroenterologist. IBS is the most prevalent diagnosis (12 percent of visits) for prolonged or persistent abdominal pain, although 10% of primary care visits are related to acute gastrointestinal discomfort. Between 24 and 35 percent of patients are still undiagnosed after the primary care appointment [4]. According to a systematic review of persistent pain in low- and middle-income nations, seventeen percent of the elderly population overall experiences chronic abdominal discomfort.

The study additionally determined that chronic pain corresponds with the state of mind, psychotic disorders, advanced age, female gender, numerous pain sites, and boosted health-care costs. Regarding the overall age range of those experiencing ongoing abdominal pain, data from the United Kingdom indicates that over one-third of instances include those under the age of twenty, with a consistent decline in proportion as age increases. All things considered, FGIDs, or abnormalities of the gut-brain connection, are the primary causes of persistent abdominal discomfort [5]. According to the Rome Foundation Global Study, a significant portion of the global population experiences functional gastrointestinal disorders (FGIDs), with over 40% meeting the criteria for at least one of the 22 defined syndromes. Among the most common causes of chronic abdominal discomfort are conditions like irritable bowel syndrome (IBS), functional dyspepsia (FD), various functional bowel disorders, and non-specific intestinal issues. Chronic abdominal pain syndrome (CAPS), formerly referred to as functional abdominal pain syndrome (FAPS), is a less prevalent type of FGID, with an estimated incidence rate of 0.5% to 1.7%. Women and individuals between 35 and 44 are more likely to develop CAPS, with women being twice as likely to be affected [6].

The prevalence of FGIDs varies by region, but smoking is a consistent risk factor across all areas, and it's also linked to other chronic pain conditions.

Chronic abdominal wall pain (CAWP) is another often-overlooked cause of prolonged abdominal pain, accounting for 1-2% of such cases. However, when no clear physical cause is found, the rate of

CAWP can rise to 35%. Women are four times more likely than men to develop CAWP, with a peak occurrence in the 20 to 40 age range. Additionally, in 20–40% of cases involving chronic abdominal pain, the primary cause of CAWP is abdominal cutaneous nerve entrapment syndrome [7].

Etiology

Chronic abdominal discomfort can significantly impact productivity and quality of life, arising from gastrointestinal conditions or non-intestinal issues that involve the genitourinary system, abdominal wall, abdominal, and spine. According to the IASP taxonomy, chronic abdominal discomfort can be classified into four categories: abdominal wall pain, visceral abdominal pain, generalized abdominal pain syndromes, and functional gastrointestinal disorders. Additionally, chronic abdominal pain can be classified into three broader categories: somatic, visceral, and functional. Somatic pain is typically associated with nociceptors in surface tissues like the skin or in the musculoskeletal system (including bones, ligaments, and muscles), whereas visceral pain originates from internal organs within the abdominal. Functional pain generally relates to visceral or underlying hypersensitivity.

Afferent nerves in the thoracolumbar, lumbosacral, and vagal regions carry information about visceral discomfort to the brain. The sympathetic and afferent, systems innervate the abdominal viscera in tandem. Visceral transmitters are found in the walls of internal viscera, beneath the mesentery, and on the serosal membranes. Visceral nociceptors are triggered by stretching, pressure, and haemorrhage and are dependent upon inflammatory chemicals; their impulses are mostly chemical. True gastrointestinal pain causes widespread, difficult-to-localize chronic gastrointestinal pain that is accompanied by noticeable neurovegetative sensations such as eating, feeling sick, throwing up, and emotional responses like worry and distress [8].

In addition to not always being connected to damage (functional disorders), pain intensity is not always totally connected with the severity of the disease (e.g., mild/no pain in colon cancer, significant pain while passing a stool in IBS). Visceral abdominal discomfort that lasts longer than a month might be caused by: Pancreatitis, cholecystitis, and irritable bowel syndrome are examples of chronic autoimmune diseases; mesenteric ischemia is a vascular procedure caused by atherosclerosis or vasoconstriction; kidney calculus and bile duct stones are examples of mechanical factors. Sharp, pinpointed discomfort in the abdominal that generally affects a small area (usually the right lower quadrant), changes in descending adjustment, or central intensification is the hallmark of chronic pain in the musculoskeletal system. On the other hand, visceral hypersensitivity or motility disruption is comparatively connected with pain in CAPS, which has a significant central core. Whichever is the primary cause, chronic abdominal discomfort can appear in different places and have different features. The sensation of heartburn regurgitation, and dysphagia are common symptoms of gastroesophageal reflux disease (GERD) in the epigastric area, but substantial discomfort or pain typically comes with peptic ulcer disease. Common signs of both gastropathy and arthritis include heartburn, sickness, vomiting, and in extreme situations, haemorrhaging. The symptoms of gastroparesis, which include delayed abdominal emptying, might include feeling nauseous, vomiting abdominal discomfort, rapid digestion, and fullness after eating. While epigastric discomfort from chronic pancreatitis often radiates to the abdominal, postprandial feeling satisfied, early satisfaction feelings of burning, and additional symptoms are common in functional dyspepsia (FD).

Biliary colic usually manifests as a severe, dull pain in the right upper quadrant (RUQ), frequently accompanied by vomiting, nausea, and diaphoresis. Despite a known etiology, RUQ discomfort resembling biliary colic can be brought on by malfunction of the sphincter of Oddi. The presence of s may result in soreness or stiffness in the left upper quadrant (LUQ), which may then propagate to the left shoulders and induce early satiety.

There are several causes of lower abdominal discomfort, including a condition known as inflammatory bowel disease (IBD), which is frequently linked to fever, tenesmus, hemorrhaging diarrhea, urgency and stool incontinence. Dysfunction of the genital tract is a common feature of

pelvic inflammatory disease, whereas endometriosis can result in dysmenorrhea, pelvic discomfort, and diarrhea [9].

Pain that is diffuse or poorly defined is a symptom of several diseases. Loss of weight, diarrhea, nausea, and vomiting are some of the symptoms of "intestinal angina," which is a condition caused by persistent mesenteric ischemia that can induce abdominal pain after ingesting. The manifestation of colorectal cancer can vary greatly and may result in blockage or evacuation. Gastrointestinal discomfort, gas, and diarrhea, steatorrhea are all possible symptoms of celiac disease. On the other hand, nausea, vomiting, and widespread abdominal discomfort may be signs of a lack of adrenaline. Diverticulosis can cause abdominal discomfort and constipation, but irritable bowel syndrome (IBS) is known for persistent abdominal pain and disturbed bowel habits. Finally, a lactose intolerance may be inflammatory. It frequently manifests as constipation, bloating, gas, and abdominal discomfort.

History

Even while a thorough history and physical examination have very poor accuracy and specificity in identifying the various causes of abdominal pain, they are nonetheless the initial steps in managing a patient with chronic pain. The features of the abdominal discomfort, including the location, intensity, start, personality, organizations, exacerbating/ameliorating variables, development over time, and intensity, might provide hints about the diagnosis. Since the sites of pain syndromes are often distinctive, the site and dissemination of abdominal pain aid in the range of possible diagnoses. Pathologies of the biliary, pancreatic, abdominal, and duodenum can cause upper abdominal discomfort. Small intestine conditions, such as Crohn's disease, celiac illness, partial small intestinal blockage, and chronic mesenteric ischemia, can result in mid-abdominal discomfort. The intestines (including IBS and colitis), the urinary system, or the reproductive organs can cause lower abdominal discomfort. Determining the length of the discomfort, its pattern (continuous vs. intermittent), and how it relates to eating or bowel motions are also crucial. When it comes to ulcers in the intestines, chronic mesenteric ischemia, and pancreatic and biliary diseases, pain usually becomes worse after eating, but with irritable bowel syndrome, discomfort is usually eased by passing gas. Acute abdominal condition is when the discomfort has been present for up to several days; prolonged abdominal pain is when the treatment has been present for more than three months.

While there are several reasons for intermittent pain, only a few gastrointestinal etiologists—such as chronic pancreatitis, cancer, abscesses, and psychological disorders—can produce persistent abdominal discomfort. Living together symptoms including vomiting, diarrhea, nausea, blood in the stools, and systemic signs like fever or rash must be looked for. Examining prior medical records, including contraindications and prescription use—particularly about opiate and nonsteroidal anti-inflammatory drug (NSAID) use—is crucial because it can help determine the underlying cause of abdominal discomfort. It is important to never ignore the warning indications or indications (also known as red flags), which include fever, weight loss, sweats at night, decreased appetite, or nocturnal apprehension, since they may indicate an organic disease. Red signals are often absent in people with organic diseases.

When gathering the medical information of a patient experiencing persistent abdominal discomfort, it's also important to consider the psychosocial element of the condition. Some life events (illnesses, significant loss, a medical condition, neglected interpersonal conflicts, substance abuse) can set off exposure to both the environment along individual variables such as family history, early trauma, healthcare-seeking behaviours, or abuse, which can lead to the expression or intensification of physical pain. It is important to find out whether someone has been diagnosed with porphyria, familial Mediterranean fever, or sickle cell trait.

Physical examination

The following step is a thorough physical examination that includes vital signs, a full abdominal exam, and a rectal examination. It is crucial to determine the exact area of discomfort and pattern of radiation as well as rule out any serious disease, such as organomegaly, tumors, or an acute abdomen. It is crucial to rule out a surgical abdomen as soon as possible in the case of an acute bout of persistent abdominal discomfort. A thorough physical examination is crucial as it may uncover critical signs of systemic diseases. For example, acanthosis nigricans might indicate an underlying malignancy, while sunken eyes, prominent clavicles, and a history of muscle wasting can suggest significant weight loss. [10,11].

Conjunctival pallor might signal anemia, and icteric sclera could point to hepatobiliary disease. Dermatitis herpetiformis could be linked to celiac disease, while erythema nodosum, pyoderma gangrenosum, and Sweet syndrome are often associated with inflammatory bowel disease. Tenderness in the costovertebral angle might indicate renal issues, and some signs may point to vitamin deficiencies. Inspection, auscultation, drumming, palpation, and rectal examination are all part of a comprehensive abdominal examination. Upon examination, the surgical scars need to be observed. Auscultation may reveal a bruit, which might be a sign of persistent mesenteric ischemia. To distinguish between functional and organic diseases, light and deep palpation can be used to identify discomfort in a particular abdominal quadrant, palpate for masses, ascites, hernias, and organomegaly, and assess the patient's reaction to the procedure. Information such as hemorrhaging, a bleeding mass, constipation symptoms, pelvic floor dysfunction, or elevated anal resting amplitude can all be obtained by performing a rectal exam. To differentiate between deeper visceral pain and CAWP, such as somatic abdominal discomfort, one might utilize Carnett's sign. For persistent abdominal wall discomfort, the test has a diagnosis accuracy of above 80%. Systematically request the patient to elevate their head off the bed while using their arms, and the region of discomfort, which is generally relatively little, intensifies with abdominal muscle spasms, the test is considered positive [12]

Pathophysiology

To differentiate between deeper visceral pain and CAWP, such as somatic abdominal discomfort, one might utilize Carnett's sign. For persistent abdominal wall discomfort, the test has a diagnosis accuracy of above 91%. Systematically request the patient to elevate their head off the bed while using their arms, and the region of discomfort, which is generally relatively little, intensifies with abdominal muscle spasms, the test is considered positive. The retroperitoneum, pelvis, gastrointestinal wall, peritoneal cavity, or even the exterior of the abdomen can all be the source of gastrointestinal pain. Psychological and chemical stimuli activate the abdominal pain receptors. While visceral mucosal sensors react to chemical stimuli, stretch is the main mechanical stimulation. It is unclear exactly what triggers the sense of abdominal pain, however, it is known that it depends on the kind of stimulation and how the central nervous system interprets visceral nociceptive signals.

The variety and quantity of visceral afferent nerves make it difficult to pinpoint the exact location of visceral discomfort. Since most organs of the abdomen are controlled by afferent neurons from either side of the spinal cord, the pain is often felt in the midline. On the other hand, ipsilateral kidney, ureter, or ovary might cause lateralized discomfort. Distress in the abdominal wall is often misdiagnosed as intra-abdominal visceral discomfort, leading to needless tests, imaging, and treatments. Therefore, understanding and consciousness must be a component of a thorough evaluation.

There are several causes of abdominal wall discomfort, although nerve entrapment, ruptured intestine and post-procedural problems are frequently identified [11].

The most prevalent and frequently misdiagnosed kind of abdominal wall discomfort is anterior cutaneous nerve entrapment syndrome. The posterior border of the rectus abdominis is usually the site of acute or persistent localized discomfort for this ailment, which gets worse with postural changes

or increasing abdominal tension in the muscles. Individuals with a localized tiny sensitive patch and no other symptoms or indicators of visceral etiology should be suspected of having abdominal wall discomfort. A favourable Carnett test indicates discomfort in the lining of the abdominal if the patient sentences the muscles of the abdominal and the feeling of discomfort either remains the same or becomes worse.

Investigations

All diagnostic tests have a false negative rate, and imaging and laboratory investigations provide crucial images in the diagnosis of acute abdominal discomfort. Plain abdominal X-rays have raised the risk of radiation and caused needless expenses rather than improving the precision of diagnosis. To validate differential diagnoses inferred from an in-depth history and assessment, the clinical condition dictates the choice of laboratory studies. Investigations might consist of a complete blood count, assessments of liver function, enzymes and amylase, blood glucose levels, urine analysis, maternity test, faecal arterial and arterial blood gas, and inflammatory indicators including C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR).

Plain x-rays are commonly used for diagnosing a variety of conditions, including:

- Bowel obstruction
- Organ perforation
- Detection of foreign objects
- Kidney stones or ureteral stones
- Chest-related diseases

Ultrasound is a popular tool for assessing abdominal pain because it's non-invasive and doesn't involve radiation exposure. However, inappropriate use of ultrasound can lead to delays in diagnosis. Despite this, evidence shows that ultrasound can have a significant diagnostic and therapeutic impact when used in cases of abdominal pain.

An urgent ultrasound scan is recommended in the following situations:

- Potential abdominal aortic aneurysm
- Possible abscess within the abdominal cavity
- Patients with right upper quadrant pain who may have gallstones
- Possible urinary tract blockage
- Women of reproductive age experiencing lower abdominal pain

Algorithms can be helpful tools for evaluating abdominal pain based on the location of the pain's origin. Vaghef-Davari and colleagues have created a series of algorithms designed to guide the management of abdominal pain [12-14]

Management

Management of abdominal pain should start concurrently with the assessment and diagnostic process. The foundational elements of most management plans include administering analgesia, providing fluid resuscitation, prescribing antiemetics, performing nasogastric suction, and, where needed, using antibiotics. The specific approach is guided by clinical findings derived from patient history, physical examination, and diagnostic tests. Early administration of appropriate pain relief can not only reduce patient suffering but also facilitate a more accurate history and cooperation during examination. Concerns that opioid analgesia might obscure the true cause of abdominal pain are unfounded; they are not a contraindication in this context.

Rapid diagnosis and prompt treatment are crucial for patients with potentially life-threatening conditions. This includes those with:

- Airway compromise due to repeated vomiting or altered consciousness.
- Need for supplemental oxygen or mechanical ventilation.

- Signs of circulatory failure.

Definitive management involves referring certain patients with abdominal pain to a higher level of care after initial evaluation and emergency treatment. Referral may be necessary when patients exhibit signs or symptoms that suggest a more complex or severe condition.

Key indications for escalation to advanced care facilities include:

- Generalized abdominal tenderness
- Signs of bowel obstruction
- Tenderness accompanied by uncontrollable vomiting
- Suspected pancreatitis
- Suspected aortic aneurysm
- Evidence of gastrointestinal bleeding
- Detection of an associated mass
- Severe pain without a confirmed cause

These situations require specialized diagnostic and therapeutic resources that are often beyond the capacity of primary or emergency care settings, warranting referral to ensure appropriate management and patient safety [15]. The Rome Foundation and Gastroenterology have joined forces to introduce Rome IV, which marks a significant milestone in the study of functional gastrointestinal disorders. The Rome IV criteria classify functional gastrointestinal disorders (FGIDs) into six subcategories based on where they originate anatomically: esophageal disorders, gastroduodenal disorders, bowel disorders, centrally mediated gastrointestinal pain disorders, gallbladder and sphincter of Oddi disorders, and anorectal disorders. FGIDs are then subdivided into groups based on their symptoms. This classification system provides a standardized method for diagnosis and treatment and the suggested management approach for abdominal pain is presented in Figure 1.

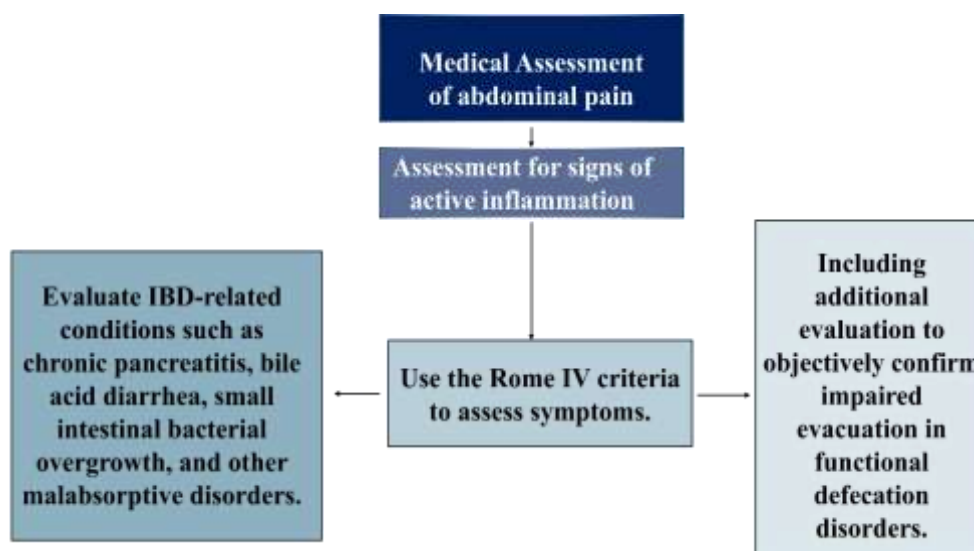


Figure 1: Standardized diagnostic and treatment classification approach with a recommended system to managing abdominal pain.

Examining and diagnosing in a primary care context

Remember that not all abdominal pain originates in the gastrointestinal tract and begin your workup for persistent abdominal pain with a comprehensive physical and medical history. Find out if you notice any alarming signs so that an expert may be consulted first. If there are no warning signs, move on to the outpatient investigation. The doctor can reduce needless testing with a customized first workup, thorough evaluation regarding patient characteristics, the severity of symptoms or alarm signs, and previous treatment effectiveness. The first laboratory testing should include a

comprehensive metabolic panel, serum lipase, C-reactive protein, full blood count, and urinary. Additional inquiries must be focused on specific patients and directed by the doctor's judgment. Patients with persistent abdominal discomfort frequently do not require diagnostic imaging; nevertheless, when it is necessary, the hypothesized etiologies should be taken into consideration when selecting between ultrasound, computed tomography scan, or magnetic resonance imaging (MRI, including magnetic resonance cholangiopancreatography). FGIDs may typically be diagnosed based only on complaints if the alert indicators are not present.

Individuals must have one or more of the indications that follow to be diagnosed with functional dyspepsia: problematic postprandial fullness, painful epigastric combustion, bothersome early satisfaction, or uncomfortable epigastric pain. The development of those symptoms must have happened at least six months before to the diagnosis, and they ought to continue for no less than three months. Furthermore, upper endoscopy and other pertinent diagnostic testing should reveal no signs of structural illness that may account for the above symptoms. A comprehensive assessment is necessary to rule out other possible explanations of these symptoms of the gastrointestinal tract since operational dyspepsia is a diagnosis of exclusion.

When two or more of the signs that follow is present, combined with recurrent abdominal discomfort that has occurred on average at least once per week over the last three months, irritable bowel syndrome (IBS) may be diagnosed. Defecation-related discomfort, which either increases or decreases with bowel motions, is one of the main symptoms.

Furthermore, a correlation may exist between the discomfort and a shift in the number of stools, signifying an increase or decrease in the regularity of elimination. Finally, there is frequently a shift in the stool's shape or physical appearance, which can go from firm and irregular to loose and liquid. These standards serve as the foundation for the diagnosis of IBS, which calls for a persistent pattern of abdominal discomfort and related bowel behavior alterations. Constant or almost constant abdominal discomfort that does not correlate well with physiological processes like eating, urinating, or menstruation is the hallmark of functional abdominal pain syndrome. The discomfort can cause a discernible loss of everyday functioning, which lowers the person's standard of living. It's critical to rule out illnesses like fraudulent activity and demonstrate that the pain is real and not being faked. Furthermore, this condition is identified when the patient's indications rule out another dysfunctional gastrointestinal illness as a possible cause of their persistent abdominal discomfort. The diagnosis of serious abdominal pain disorder usually follows an in-depth examination to rule out other possible reasons [16].

Constant or practically continuous abdominal discomfort with little to no correlation with normal bodily functions such as eating, urinating, or menstruating is known as continuous discomfort in the abdominal syndrome. The fact that this chronic pain limits certain areas of day-to-day activity suggests that it affects the person's quality of life. It must be demonstrated that the pain is genuine, ruling out invention or scheming, to satisfy the diagnostic requirements. Furthermore, this illness is only identified after all other medical illnesses, and structural or functional gastrointestinal abnormalities that might be the cause of the ongoing discomfort have been ruled out. The diagnostic process entails a thorough evaluation to make sure the patient's chronic abdominal discomfort is not caused by any other recognized medical issue.

Principal Aspects and Difficulties of Elderly Abdominal Pain

Assessment of elderly patients is frequently challenging due to their longer wait times for care, hazy indicators, and nonspecific investigation findings compared to younger individuals. Additionally, their polypharmacy (e.g., opiates, steroids, NSAIDs, and β -blockers) and multiple conditions may affect how they respond to treatment.

The typical age-related deterioration in hearing, vision, and cognitive deficits typically impairs the patient's capacity to offer historical information. Concomitant drugs (such as β -blockers and NSAIDs)

may cause the absence of vital sign irregularities such as a high body temperature a low blood pressure and tachycardia. Peptic ulcer illnesses, diverticular conditions, colon cancer, biliary colic (calculous or acalculous), and chronic mesenteric ischemia are the most common causes of persistent gastrointestinal pain in older adults.

It's crucial to consider extra-abdominal problems that might cause abdominal discomfort, such as sensory overload, sadness, genitourinary symptoms (such as pyelonephritis, urinary tract infections, neurogenic bladder, and uterine prolapse), congestive heart failure, and herpes zoster. Compared to children and adolescents, elderly individuals had organic diseases more frequently, necessitating the use of computerized tomography (CT) scanning—often with parenteral contrast.

Since reduced muscle mass and protein consumption are prevalent in the elderly, the glomerular filtration rate should be used by the doctor instead of serum Cr since the latter might be mistakenly raised. In terms of care, it's critical to evaluate risk-benefit ratios and choose the right dosage of analgesic medicine based on factors such as tolerance among patients or opiate intolerance, dementia and fall risk, and liver and kidney failure [17].

Conclusions

Diagnosing chronic abdominal pain can be difficult and frequently requires a thorough workup to rule out biological and functional reasons. A careful method that narrows the differential diagnosis and minimizes the need for needless tests is essential. It combines a comprehensive physical examination with a complete patient history.

By reducing pointless testing, this approach guarantees that patients receive focused, appropriate therapy.

In general practice, efficient management necessitates striking a compromise between cost and thoroughness. Clinicians should choose laboratory tests, endoscopic procedures, or imaging investigations depending on the patient's history, symptom pattern, and physical results, which will help them determine the most likely reasons.

Healthcare professionals may decrease patient suffering and anxiety associated with extensive diagnostic procedures, avoid over-testing, and lower healthcare costs by implementing a logical approach to diagnostic evaluation.

The ultimate objective is to maximize patient outcomes, conserve resources, and provide an accurate diagnosis and appropriate treatment. In addition to enhancing patient care, a well-planned and methodical diagnostic process promotes a more robust and effective primary healthcare system.

References

1. F. De Conno, K. Foley, Pain — definitions, classification and causes, in: F. De Conno, K. Foley (Eds.), *Cancer Pain Relief*, Springer Netherlands, Dordrecht, 1995: pp. 1–3. https://doi.org/10.1007/978-94-011-0099-1_1.
2. M. Daly, N. Zarate-Lopez, Functional gastrointestinal disorders: History taking skills in practice, *Clinical Medicine* 21 (2021) e480–e486. <https://doi.org/10.7861/clinmed.2021-0189>.
3. C. Walker, A. Boland, A. Carroll, A. O'Connor, Concurrent functional gastrointestinal disorders in patients with inflammatory bowel disease, *Front. Gastroenterol.* 1 (2022) 959082. <https://doi.org/10.3389/fgstr.2022.959082>.
4. K. Lakhoo, C.V. Almario, C. Khalil, B.M.R. Spiegel, Prevalence and Characteristics of Abdominal Pain in the United States, *Clinical Gastroenterology and Hepatology* 19 (2021) 1864–1872.e5. <https://doi.org/10.1016/j.cgh.2020.06.065>.
5. K. Lee, C. Kwon, A.Ö. Yeniova, A. Koyanagi, L. Jacob, L. Smith, S.W. Lee, M. Rahmati, J.-Y. Shin, J.I. Shin, W. Cho, D.K. Yon, Global prevalence of functional dyspepsia according to Rome criteria, 1990–2020: a systematic review and meta-analysis, *Sci Rep* 14 (2024) 4172. <https://doi.org/10.1038/s41598-024-54716-3>.

6. A.D. Sperber, S.I. Bangdiwala, D.A. Drossman, U.C. Ghoshal, M. Simren, J. Tack, W.E. Whitehead, D.L. Dumitrascu, X. Fang, S. Fukudo, J. Kellow, E. Okeke, E.M.M. Quigley, M. Schmulson, P. Whorwell, T. Archampong, P. Adibi, V. Andresen, M.A. Benninga, B. Bonaz, S. Bor, L.B. Fernandez, S.C. Choi, E.S. Corazziari, C. Francisconi, A. Hani, L. Lazebnik, Y.Y. Lee, A. Mulak, M.M. Rahman, J. Santos, M. Setshedi, A.F. Syam, S. Vanner, R.K. Wong, A. Lopez-Colombo, V. Costa, R. Dickman, M. Kanazawa, A.H. Keshteli, R. Khatun, I. Maleki, P. Poitras, N. Pratap, O. Stefanyuk, S. Thomson, J. Zeevenhooven, O.S. Palsson, Worldwide Prevalence and Burden of Functional Gastrointestinal Disorders, Results of Rome Foundation Global Study, *Gastroenterology* 160 (2021) 99-114.e3. <https://doi.org/10.1053/j.gastro.2020.04.014>.
7. C. Chen, D. Zhang, S. Chen, S. Huang, F. Zeng, D. Li, Y. Lv, X. Xiang, R. Chen, X. Zhang, F. Mao, X. Huang, J. Wang, F. Bai, Prevalence, types, and risk factors of functional gastrointestinal diseases in Hainan Province, China, *Sci Rep* 14 (2024) 4553. <https://doi.org/10.1038/s41598-024-55363-4>.
8. G. Kim, H. Woo, Y.-A. Ji, Factors Affecting Abdominal Obesity: Analyzing National Data, *Healthcare* 12 (2024) 827. <https://doi.org/10.3390/healthcare12080827>.
9. B. Veronica, C. Francesca, L. Luigi, A.M. De Gaetano, M. Riccardo, Imaging of Biliary Colic and Cholecystitis, in: M.A. Cova, F. Stacul (Eds.), *Pain Imaging*, Springer International Publishing, Cham, 2019: pp. 229–245. https://doi.org/10.1007/978-3-319-99822-0_13.
- A. Sapra, A. Malik, P. Bhandari, Vital Sign Assessment, in: StatPearls, StatPearls Publishing, Treasure Island (FL), 2024. <http://www.ncbi.nlm.nih.gov/books/NBK553213>
10. C.A. Mealie, R. Ali, D.E. Manthey, Abdominal Exam, in: StatPearls, StatPearls Publishing, Treasure Island (FL), 2024. <http://www.ncbi.nlm.nih.gov/books/NBK459220/>
11. A.B. Johnson, B. Burns, Hemorrhage, in: StatPearls, StatPearls Publishing, Treasure Island (FL), 2024. <http://www.ncbi.nlm.nih.gov/books/NBK542273>.
12. T. Sanvictores, F. Jozsa, P. Tadi, Neuroanatomy, Autonomic Nervous System Visceral Afferent Fibers and Pain, in: StatPearls, StatPearls Publishing, Treasure Island (FL), 2024. <http://www.ncbi.nlm.nih.gov/books/NBK560843>.
13. Z.E. Khattak, H. El Sharu, B.S. Bhutta, Overview on Ordering and Evaluation of Laboratory Tests, in: StatPearls, StatPearls Publishing, Treasure Island (FL), 2024. <http://www.ncbi.nlm.nih.gov/books/NBK570615>.
14. G.L. Damhorst, E.A. Tyburski, O. Brand, G.S. Martin, W.A. Lam, Diagnosis of acute serious illness: the role of point-of-care technologies, *Current Opinion in Biomedical Engineering* 11 (2019) 22–34. <https://doi.org/10.1016/j.cobme.2019.08.012>.
15. B. Lacy, N. Patel, Rome Criteria and a Diagnostic Approach to Irritable Bowel Syndrome, *JCM* 6 (2017) 99. <https://doi.org/10.3390/jcm6110099>.
16. H. Aljadhey, W. Tu, R.A. Hansen, S.J. Blalock, D.C. Brater, M.D. Murray, Comparative effects of non-steroidal anti-inflammatory drugs (NSAIDs) on blood pressure in patients with hypertension, *BMC Cardiovasc Disord* 12 (2012) 93. <https://doi.org/10.1186/1471-2261-12-93>.