

Iatrogenic Chronic Abdominal Pain in a Geriatric Patient: A Case Report

Apichai Wattanapisit^{1,2}, Natthawan Pankamnerd², Sanhapan Wattanapisit³

¹ School of Medicine, Walailak University, Nakhon Si Thammarat, Thailand;

² Walailak University Hospital, Nakhon Si Thammarat, Thailand;

³ Thasala Hospital, Nakhon Si Thammarat, Thailand

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Abstract: Chronic abdominal pain is a challenging problem in clinical practice, with several pathophysiological mechanisms underlying its aetiologies. This case report presents a geriatric patient with multiple comorbidities who had experienced intermittent abdominal pain for over 10 years. Alarming symptoms were ruled out, and a functional gastrointestinal disorder was determined as the most likely cause. The patient's medical history and previous treatments were thoroughly reviewed, revealing that long-term use of metformin and an oral iron supplement was the iatrogenic symptom triggers. The abdominal pain resolved upon discontinuation of these two medications. This case report highlights the significance of reviewing iatrogenic causes and periodically assessing chronic medical conditions to identify potential contributing factors of chronic abdominal pain.

Mailing Address: Apichai Wattanapisit, MD., School of Medicine, Walailak University, Floor 8, Building C, Walailak University Hospital, 222, Thaiburi, Thasala, Nakhon Si Thammarat, 80160, Thailand; Phone: +66 75 47 7401; Fax: +66 75 67 2807; e-mail: apichai.wa@wu.ac.th

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Introduction

Chronic abdominal pain, defined as a constant or intermittent pain lasting for at least 3 months, is a challenging problem in clinical practice (Sabo et al., 2021; Lukic et al., 2022). The aetiologies of chronic abdominal pain can be categorised as abdominal wall pain (e.g., postherpetic neuralgia, intercostal neuralgia), abdominal pain of visceral origin (e.g., peptic ulcer disease, renal cancer), abdominal pain syndromes of generalised diseases (e.g., abdominal migraine), functional gastrointestinal disorders (e.g., functional dyspepsia, irritable bowel syndrome) (Sabo et al., 2021). Unexplained or non-specific diagnoses are common among patients with abdominal pain (Viniol et al., 2014; Price et al., 2022). This article presents a geriatric patient who had suffered from chronic abdominal pain for more than 10 years and was referred to a geriatric clinic.

Case report

A 72-year-old male had been treated for type 2 diabetes mellitus, dyslipidaemia, benign prostate hyperplasia, and anaemia for more than 10 years. He had suffered from abdominal pain since the treatments of his chronic medical conditions began. The pain was intermittent and non-severe. He had regular visits with physicians for the underlying diseases, also, he visits general practitioners and specialists for the chronic abdominal pain. The most recent oesophagogastroduodenoscopy and colonoscopy, performed about 10 months prior to a referral to the geriatric clinic, revealed negative findings.

At the geriatric clinic, the medical history and laboratory tests were reviewed. Type 2 diabetes mellitus, dyslipidaemia, and benign prostate hyperplasia were under control. Fasting plasma glucose and glycated haemoglobin (HbA1c) were 119 mg/dl and 5.7%, respectively. Low-density lipoprotein cholesterol was 78 mg/dl. The complete blood count showed normal levels of white blood cells (7,000 cells/mm³, neutrophil 61%, lymphocyte 26%, monocyte 6%, eosinophil 6%, and basophil 1%) and platelets (204,000 cells/mm³). The red blood series showed hypochromic microcytic anaemia (red blood cell count 4.73×10^6 cells/mm³, haemoglobin 10.0 g/dl, haematocrit 31.8%, mean corpuscular volume 67.2 fl, mean corpuscular haemoglobin 21.1 pg, mean corpuscular haemoglobin concentration 31.4 g/dl, poikilocytosis 1+, hypochromia 1+, few target cells, and few ovalocytes).

His medications were metformin 500 mg daily, simvastatin 20 mg daily, dutasteride 0.5 mg + tamsulosin 0.4 mg before bedtime, ferrous fumarate 200 mg twice daily, and folic acid 5 mg daily. He had been taking metformin, simvastatin, ferrous fumarate, and folic acid for more than 10 years. His abdominal pain was non-localised, mild intensity, intermittent, dull, not related to meals. He had no nausea, vomiting, abnormal bleeding, anorexia, dysphagia, unintended weight loss,

constipation, or changes in bowel habit. Physical examination revealed a normal abdominal contour, no surgical scar, normoactive bowel sounds, no tenderness, no organomegaly, no palpable mass, normal rectal sphincter tone, and no melena upon testing by digital rectal exam.

The long-term use of metformin and ferrous fumarate was discussed with the patient. The two medications were discontinued after the first geriatric clinic visit. Blood tests for serum iron, ferritin, transferrin, total iron binding capacity, and haemoglobin typing were collected to differentiate the diagnosis of hypochromic microcytic anaemia (iron deficiency anaemia and thalassemia trait). Medications for symptomatic treatment for functional dyspepsia were prescribed (omeprazole, domperidone, simethicone, alginic acid), and a 4-week follow-up was scheduled.

At the second geriatric clinic visit, the values of serum iron, ferritin, transferrin, and total iron binding capacity were within the normal range. The patient had not experienced abdominal pain since the first few days after discontinuing metformin and ferrous fumarate. The haemoglobin typing showed a normal pattern (HbA 97.6% and HbA2 2.4%; not ruling out alpha thalassemia trait). The osmotic fragility test was positive. Other blood tests were within the normal range, including fasting plasma glucose (116 mg/dl) and HbA1c (5.8%). The patient was informed about controlled type 2 diabetes mellitus and the possibility of thalassemia trait. Six weeks after the second geriatric clinic visit, the patient had no abdominal pain.

Discussion

This case report presents a geriatric patient who had multiple comorbidities and suffered from chronic abdominal pain. The most likely aetiology was functional gastrointestinal disorders. Alarm symptoms or red flags indicating organic causes were not found in this patient (Black et al., 2020). Besides its pathophysiology, including alteration of gut motility; intestinal mucosal permeability; bile acids; immune-mediated conditions; visceral hypersensitivity; microbiome; central nervous system, medications should be reviewed (Duffy et al., 2023). Several medications are considered as iatrogenic symptom triggers, such as nonsteroidal anti-inflammatory drugs, antibiotics (e.g., doxycycline), opioids, dopaminergic agents, potassium chloride, metformin, and iron (Duffy et al., 2023).

After reviewing the medications, it was found that the patient had been on long-term use of metformin and iron supplement (ferrous fumarate). Metformin, a first-line medication for type 2 diabetes mellitus, affects the gastrointestinal tract through several mechanisms (McCreight et al., 2016). A systematic review revealed that patients using metformin had about a 50% higher risk of abdominal pain compared to controls (placebo or other diabetic medications) (Nabrdalik et al., 2022). Nausea and diarrhoea were also adverse effects of metformin (Nabrdalik et al., 2022). Oral iron supplementation, a first-line treatment for iron deficiency

anaemia, can lead to gastrointestinal side effects (e.g., abdominal pain, bloating, nausea, vomiting, constipation, diarrhoea) due to remaining non-absorbed iron in the intestines (Malesza et al., 2022). The two medications were identified as possible causes of chronic abdominal pain in this patient. This hypothesis was confirmed when the symptom of abdominal pain disappeared after discontinuing the medications.

The case report reflects three important lessons. First, iatrogenic causes of chronic abdominal pain should be reviewed for all patients, especially in older adults. Polypharmacy is a common issue among geriatric patients, which increases the risks of inappropriate medication use, drug interactions, and adverse drug reactions. Second, the assessment of chronic illnesses is recommended periodically. This case demonstrates the importance of continuity of care. Iron deficiency anaemia was a less likely diagnosis; however, long-term iron supplementation had been prescribed. The status of type 2 diabetes mellitus should be monitored. For this patient, diabetes remission, defined as HbA1c < 6.5% at least three months after the cessation of antidiabetic medications, was possible. Third, communication is very important. The blood test showed hypochromic microcytic anaemia, and oral iron supplementation had been prescribed to control his anaemia for over 10 years. Type 2 diabetes mellitus was his underlying disease, and a lifelong treatment had been expected. Discontinuing the long-term medications required a reasonable explanation.

Conclusion

This case report presents a geriatric patient with chronic abdominal pain, most likely attributed to a functional gastrointestinal disorder resulting from long-term medication use. It highlights the importance of reviewing iatrogenic causes, including medication use, and periodically assessing chronic illnesses to identify potential contributing factors.

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