Lessons from practice

Abdominal pain in the emergency department: the importance of history taking for common clinical presentations

Clinical record

A 26-year-old man presented to the emergency department (ED) overnight with severe and disabling abdominal pain. On initial assessment, he described sudden onset sharp pain in the right iliac fossa 6 hours earlier, with subsequent generalisation across the abdomen and the development of nausea and vomiting, subjective fevers, profuse diaphoresis and pleuritic chest pain. On examination, there was general abdominal discomfort without rebound tenderness; clinical observations and the remainder of the examination were unremarkable. Basic investigations demonstrated a normal full blood count, electrolytes and liver function tests. The history and examination were not typical of an acute abdomen, appendicitis or cholecystitis. The patient provided a past medical history notable for gastro-oesophageal reflux disease and a diagnosis of irritable bowel syndrome following a normal colonoscopy with a gastroenterologist. Intravenous analgesia was provided and resulted in symptomatic improvement.

Although severe on presentation, these symptoms were chronic, occurring on a monthly basis over the preceding 12 years. Fever and abdominal pain were most prominent and followed a cyclic and progressive course until spontaneously recovering within 3–5 days. On one previous occasion, the patient was admitted for observation under the surgical unit after narrowly avoiding an exploratory laparotomy for severe abdominal pain of uncertain aetiology. Review of previous investigations provided by the patient demonstrated elevated C-reactive protein (227 mg/L; reference interval, < 5 mg/L), but otherwise normal blood count and iron studies and negative coeliac serology. Liver ultrasound, abdominal radiographs and computed tomography performed on previous presentations were unremarkable. On this occasion, the patient was monitored overnight for ongoing review.

After symptomatic improvement, thorough review and documentation of the history was undertaken, revealing a cluster of symptoms that raised the possibility of an underlying systemic condition. The cardinal symptoms of fever, peritonitis and pleurisy were consistently identified at each episode. Intermittent knee arthritis also occurred at these times. When considered together, these symptoms were suggestive of systemic serosal inflammation. A previous episode of orchitis in the context of a urinary tract infection was also supportive. A detailed social and family history revealed the patient's Israeli heritage and consanguineous parents. There were no known heritable conditions diagnosed in the extended family, but there was a family history of similar episodic and disabling attacks.

After careful review of the clinical history and the available investigations, a preliminary clinical diagnosis of familial Mediterranean fever (FMF) was made. After clinical improvement, the patient was discharged from the ED and referred to a general practitioner for review and monitoring while he undertook a trial of colchicine. Subsequent rheumatology review confirmed the clinical diagnosis. Genetic testing to support the diagnosis was offered at this time but declined. In the 2 years since the initial diagnosis was made and colchicine initiated, the patient has remained asymptomatic.

Discussion

FMF is the most common autoinflammatory periodic fever syndrome. It usually presents in patients younger than 20 years of age and of Mediterranean background, where it may account for a high number of emergency presentations for acute abdominal pain (2%).[1] Clinically, FMF is characterised by episodes of fever and symptoms of serositis (peritonitis, pleurisy, pericarditis, joint arthritis) likely resulting from autoinflammation due to release of pro-inflammatory cytokines (interleukin [IL]-1). In patients of appropriate ethnicity presenting with these clinical features, FMF should be considered once common conditions are excluded. The clinical manifestations of periodic fever and serositis form the basis for major clinical diagnostic criteria.[2,3] Secondary supportive criteria include appropriate ethnicity, positive family history and a favourable response to colchicine. Genetic inheritance of FMF usually follows an autosomal recessive pattern. In this setting, identification of biallelic mutations in the *MEFV* gene may be supported by genetic testing. However, mutations in the *MEFV* gene are considered supportive rather than diagnostic due to variable genetic expression.[4] Phenotypic expression of FMF may occur in cases of a single affected allele, and up to 20% of patients meeting clinical criteria do not have detectable mutations in the *MEFV* gene.[5,6]

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Effective management of FMF with colchicine is well studied and should be initiated at diagnosis. Colchicine may be used to resolve acute attacks, which are usually self-limited, but is most effective when used continuously for prevention. As prophylaxis, colchicine completely (60%) or partially (30%) prevents attacks in up to 90% of cases.[7,8] Colchicine-resistant cases are uncommon and are usually related to missed doses or non-adherence. In true colchicine-resistant cases, off-label use of biological agents targeting the IL-1 (canakinumab, rilonacept, anakinra), IL-6 or tumour-necrosis factor pathways show promise.[8,9] Delayed detection and treatment of FMF is associated with premature death due to increased risk of amyloidosis and end-stage renal disease, which may be mitigated by prophylactic colchicine treatment.[8,10] Specialist referral is recommended in all cases of suspected FMF.[9]

This case highlights a number of important but easily overlooked aspects of the diagnostic process. Physicians are prone to bias when faced with common presentations such as chronic abdominal pain in the ED or in general practice. This case demonstrates how a low prevalence familial disease can remain undiagnosed over 12 years despite multiple presentations to medical professionals. A high index of suspicion for a systemic process and a thorough review of the clinical and family history were crucial for identifying information that resulted in a unifying diagnosis. The downstream effects have resulted in symptom control for the patient, improved long term prognosis and increased awareness of the condition within the extended family.

Lessons from practice

- Thorough history taking remains valuable, even for seemingly common presentations, as the process may reveal red flags and prompt appropriate investigation.
- Pattern recognition is an important diagnostic tool used in medicine, but may lead to the dismissal of alternative diagnoses. Recurrent presentations or treatment failure should prompt further enquiry.
- Familial Mediterranean fever is a clinical diagnosis that should be considered in patients of appropriate ethnicity, who present with fever and features of serositis. Although not diagnostic, genetic testing may support the clinical diagnosis.
- Colchicine is highly effective for the prevention of acute attacks and protects against the development of long term complications such as amyloidosis. ◆

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