

## THE CLINICAL PICTURE

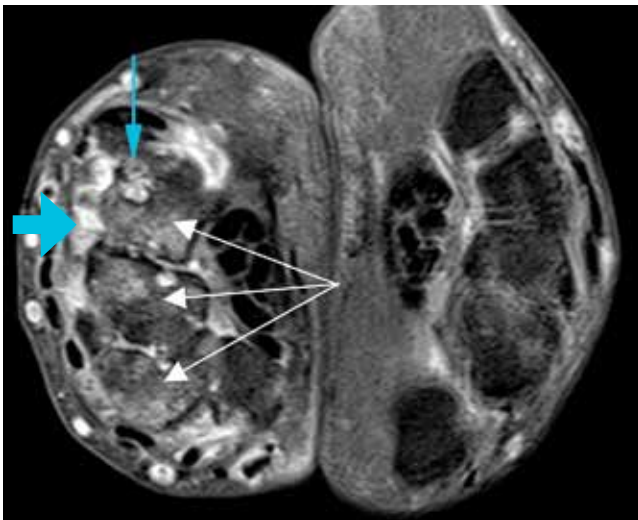
**GURSIMRAN S. KOCHHAR, MD**  
Department of Hospital Medicine,  
Cleveland Clinic

**MAGED RIZK, MD**  
Department of Gastroenterology,  
Cleveland Clinic

**DEEPA T. PATIL, MD**  
Department of Anatomic Pathology,  
Cleveland Clinic

# The Clinical Picture

## Not all joint pain is arthritis



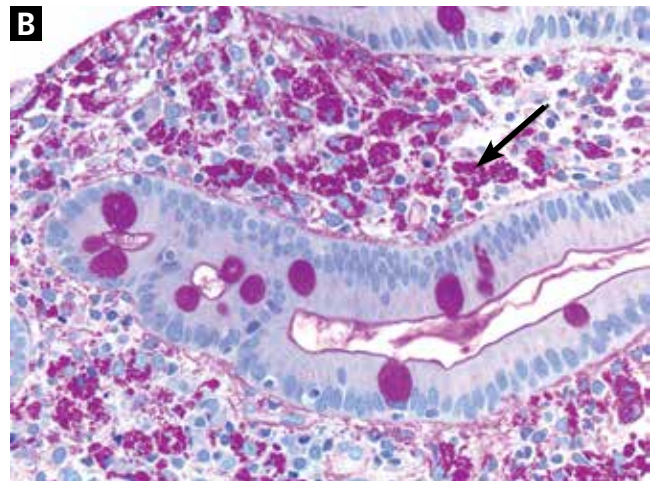
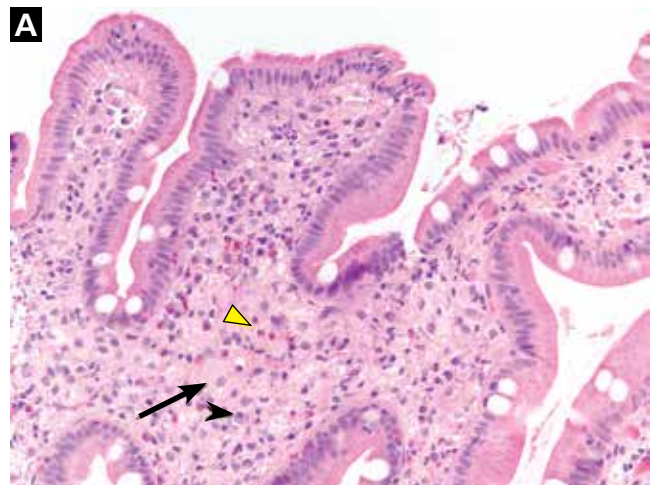
**FIGURE 1.** Axial T1-weighted magnetic resonance imaging with gadolinium contrast shows synovitis (large blue arrow) along the dorsal aspect of the wrist. Also seen are erosions in the carpal bones (thin blue arrow) and bone marrow edema (white arrows), which is asymmetrical compared with the other wrist, a finding highly suggestive of rheumatoid arthritis.

**A** 47-YEAR-OLD MAN who had been diagnosed with rheumatoid arthritis 5 years previously was referred to us for management of bilateral pleural effusions.

At the time of his diagnosis, his symptoms included pain and swelling of both wrists and the metacarpal joints of both hands. His serum C-reactive protein level had been elevated at that time, but he had no detectable rheumatoid factor. Findings on magnetic resonance imaging of the hand were very suggestive of rheumatoid arthritis (FIGURE 1).

He had been started on the anti-tumor necrosis factor agent etanercept but his symptoms improved only slightly, and therefore a glucocorticoid had been added.

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**FIGURE 2.** (A) The duodenal mucosa shows expansion of the lamina propria by “foamy” macrophages (black arrow) admixed with eosinophils (yellow arrowhead) and plasma cells (black arrowhead) (hematoxylin and eosin,  $\times 100$ ). (B) Periodic acid-Schiff staining with diastase digestion reveals foamy macrophages containing diastase-resistant bacilli (arrow) ( $\times 200$ ).

Two years later, he developed abdominal pain, for which he underwent cholecystectomy. However, he continued to have chronic, generalized abdominal pain, and over the next 4 years he lost 25 lb. Upper endoscopy showed no mucosal changes, and multiple random biopsy samples were obtained for histologic evaluation (FIGURE 2) as part of his workup for chronic abdominal pain.

**Q:** What is the diagnosis?

**A:** As shown in FIGURE 2, staining of duodenal specimens showed intact villous architecture, with focal expansion of the lamina propria by “foamy” macrophages, rare plasma cells, and eosinophils, a key feature of Whipple disease. Periodic acid-Schiff staining showed numerous bacilli within the macrophages, thus confirming the diagnosis of Whipple disease. The diagnosis was also confirmed by polymerase chain reaction testing. Staining for acid-fast bacilli was negative.

**■ WHEN TO CONSIDER WHIPPLE DISEASE**

Whipple disease is a rare systemic disease with a very low incidence rate worldwide. Thus, its

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prevalence is difficult to estimate accurately. It is caused by a gram-positive bacterium, *Tropheryma whippelii*.<sup>1,2</sup> The typical clinical manifestations are diarrhea, abdominal pain, weight loss, and fever. In most patients, these are often preceded by articular symptoms,<sup>3</sup> as in our patient, who had articular symptoms for 5 years before he was diagnosed with Whipple disease.

Interestingly, our patient also had pleural effusion, which is uncommon in Whipple disease.<sup>4</sup>

The pathogenesis of Whipple disease is thought to be related to bacterial replication within macrophages, which leads to a systemic immune response and tissue infiltration by the organism.<sup>5</sup> Histologic evaluation is the most common way to confirm the diagnosis.

As our patient’s disease course illustrates, Whipple disease should be part of the differential diagnosis of arthritis, as antibiotic therapy alone leads to a dramatic clinical response.

Our patient was started on a 2-week course of intravenous ceftriaxone followed by oral sulfamethoxazole and trimethoprim, and his abdominal and articular symptoms completely resolved within 4 weeks.

**■ Histologic evaluation is the most common way to confirm the diagnosis**

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**ADDRESS:** Gursimran S. Kochhar, MD, Department of Hospital Medicine, M2 Anx, Cleveland Clinic, 9500 Euclid Avenue, Cleveland, OH 44195; e-mail: Kochhag@ccf.org