Metastatic Crohn’s Disease

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Abstract

Metastatic cutaneous involvement is a rare extraintestinal manifestation of Crohn’s disease. Presence of cutaneous noncaseating granulomas that are anatomically noncontiguous in location with a fistula or the gastrointestinal tract is a diagnostic hallmark. We present a case of inflammatory bowel disease initially diagnosed as ulcerative colitis, but later manifesting as intra-abdominal abscesses and ulcerated cutaneous lesions that on biopsy proved to be metastatic Crohn’s disease. The patient promptly responded to corticosteroid therapy.

Introduction

Establishing a diagnosis of Ulcerative Colitis (UC) or Crohn’s disease (CD) can be occasionally challenging in children and adolescents as a phenotypic overlap exists between the two disease entities. Furthermore, metastatic CD (MCD) is also an uncommon extraintestinal manifestation. Here, we report a case diagnosed as UC in adolescence, but later presented with several spontaneous intra-abdominal abscesses and multiple skin lesions which proved to be MCD.

Case Report

A 28 year old gentleman presented with complaints of high grade fever with chills and abdominal pain for one month. Abdominal pain was gradual in onset, progressive, intermittent in nature and periumbilical in location. It was localised and severe with no aggravating or relieving factors. He complained of nausea and non-projectile, non-bilious vomiting associated with abdominal pain. He also complained of passage of blood intermixed with stools. Fifteen days prior to presentation at our centre, he noticed skin lesions over the right shin and abdomen that gradually ulcerated and developed a necrotic base.

He had been diagnosed with UC twelve years back. He had presented with blood in stools and abdominal pain at that time. During initial evaluation, an ileocolonoscopy had revealed diffuse colonic erythema and innumerable polyps in the right colon with normal appearing ileum. Colonic biopsies from suspected areas were suggestive of UC. He was started on oral 5-aminosalicylic acid agents and corticosteroids, following which he improved symptomatically. Through the initial five years after diagnosis, he had five flares of the disease, each time treated with a short course of oral corticosteroids. He was symptom-free for the last seven years. He had history of smoking cigarettes (5/day) since ten years. His father was a case of muscular dystrophy.

Presently, he was investigated at another center a week back where CT abdomen had revealed mural wall thickening in the terminal ileum, ileocaecal region, ascending and proximal transverse colon and necrotic lymphadenopathy in the periportal, mesenteric, greater omental and periduodenal regions, the largest node being 2.1 X 1.5 centimeters. CT chest was normal. There was no free fluid in the pleural and peritoneal cavity. He had further undergone laparoscopy-guided mesenteric lymph node biopsy which exhibited reactive hyperplasia on histopathology. He had been started on empiric anti-tubercular therapy for a week. He presented to us without any symptom relief.

Physical examination revealed pallor, bilateral pitting pedal edema and multiple elevated necrotic lesions over the shin and abdomen (Figure 1). Per abdominal and other systemic examination was normal.

At our center, a complete blood count revealed hemoglobin of 10.1 g/dl; total leucocyte count of 13,400 cells/µL (82% Neutrophils) and a platelet count of 5,30,000/µL. Liver and renal function tests were normal. Erythrocyte sedimentation rate was 49 mm at end of one hour. C - reactive protein (CRP) was positive. He had low serum total proteins, albumin and vitamin D levels. Anti-Saccharomyces cerevisiae IgA and IgG were positive. Stool examination revealed presence of blood, mucus and pus cells. The Interferon-gamma release assay and Mantoux skin test for tuberculosis were negative. A transabdominal ultrasound revealed multiple intraabdominal abscesses. An ultrasound guided aspiration from one of the largest abscess showed frank pus. Microscopic analysis of the aspirate revealed plenty of polymorphonuclear leukocytes. The aspirate did not grow any pathological organisms in culture. The polymerase chain reaction for detection of M. Tuberculosis was negative.

A colonoscopy revealed extensive pseudopolyposis in the transverse and right colon till the caecum with minimal friability. The left colon and ileum were normal (Figure 2). Colonic biopsy was suggestive of irregular glands, occasional crypt abscesses and inflammatory cell infiltrate in the lamina propria with congestion and focal fibrosis suggestive of ulcerative colitis with moderate activity. There was no atypia or dysplasia. Biopsy from the skin lesion revealed chronic inflammation of the dermis mixed with epithelioid and giant cells with evidence of chronic non-caseating granulomas (Figure 3). Fungal and Ziehl-Neelsen stain for Acid Fast Bacilli, TB Gene X-pert and TB MGIT culture of the skin biopsy were negative. The diagnosis of metastatic crohn’s disease was thus apparent.

He received intravenous corticosteroids and broad spectrum antibiotics. Fever subsided within
48 hours. He was then administered oral prednisolone for four weeks. Prednisolone was tapered and concomitantly azathioprine was started along with vitamin-D supplements. His skin lesions gradually improved and the intra-abdominal abscesses resolved. Six months on maintenance azathioprine therapy, his skin lesions had completely healed and CRP was negative.

**Discussion**

**Crohn’s disease (CD)** is a chronic inflammatory condition of the gastrointestinal (GI) tract. CD may manifest with a variety of skin lesions like fissures and fistulae, pyoderma gangrenosum, aphthous ulcers, erythema multiforme, erythema nodosum and necrotizing vasculitis. 1 Prevalence of skin lesions is reported to be around 14% - 44%. 2 Mucocutaneous lesions associated with CD can be classified as CD-specific, reactive or associated. CD-specific lesions are most common and manifest as oral disease, perianal and peristomal fissures and fistulae. Metastatic Crohn’s Disease (MCD) is a rare manifestation that is specific to Crohn’s disease. Most common reactive lesions include aphthous ulcers and erythema nodosum and are considered to arise as a result of cross-antigenicity between skin and gastrointestinal tract. Palmoplantar pustulosis, palmar erythema, hidradenitis suppurativa and vitiligo are commonly reported skin disorders associated with CD. Skin lesions due to nutritional deficiencies associated with malabsorption include acrodermatitis enteropathica (zinc deficiency), pellagra (nicotinic acid deficiency) and hair and nail disorders (biotin deficiency). 3

Noncaseating granulomatous inflammation involving predominantly the papillary and reticular dermis is a characteristic lesion of MCD. Epithelioid cells and multinucleated giant cells against a background of lymphocytes are pathognomonic. Presence of granulomas around dermal blood vessels (granulomatous perivasculitis) suggests a vasculitis-mediated etiopathogenesis. Sarcoidosis is a close differential diagnosis on histopathology. Histopathological examination of the skin lesion clinches the diagnosis especially in the absence of GI symptoms.

The skin lesions may manifest prior to clinical presentation (3 months - 8 years) or may be seen along with an established gastrointestinal disease. 4 Erythematous plaques, nodules and cutaneous ulcers are characteristic of MCD. Occasionally, the lesions may exhibit scaling and crusting. Skin lesions appear more frequently alongwith a colonic disease than an ileal predominant disease and are usually poor predictors of gastrointestinal activity of CD. They commonly involve the genitalia 5-7 (especially in children), legs, abdomen, trunk and dermal folds.

There are no established guidelines for the treatment of MCD. Both topical and systemic therapeutic modalities have been tried with varying success. Topical corticosteroids and tacrolimus have been used to successfully treat single lesions or localized disease. Systemic therapy with metronidazole, corticosteroids, methotrexate, azathioprine, mycophenolate mofetil, cyclosporine and thalidomide have been used successfully in various case reports. 5 Recently, biological agents like infliximab and adalimumab have also been used efficaciously with complete resolution of skin lesions over 2 weeks to 6 months.

10-30% patients with CD develop intra-abdominal or pelvic abscesses in their life time which can evolve spontaneously or post-operatively and clinically present with spiking fever and focal abdominal tenderness.

**Conclusion**

Accurate diagnosis of IBD in
children and adolescents should thus be based on a combination of precise history taking, relevant physical and laboratory examination, esophagogastroduodenoscopy (EGD) and ileocolonoscopy with histology, and imaging of the small bowel. In this particular patient, there were three unique features - 1) A phenotypic overlap of UC and CD; 2) spontaneous appearance of intra-abdominal abscesses and 3) multiple skin lesions diagnosed as MCD.

References


