An Unexpected Infection in An Infliksimab-Treated Patient with Ulcerative Colitis: Acute Omphalitis

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INTRODUCTION

The inflammatory cytokine TNF-α is primarily produced by lymphocytes and macrophages and plays a significant role in the onset of many inflammatory disorders. Infliximab (IFX) is a TNF-α-targeting monoclonal antibody used to treat moderate to severe active ulcerative colitis (UC).[1] Anti-TNF inhibitors are increasingly recommended for the treatment and management of various illnesses, including UC and Crohn's disease.[2] However, the use of these anti-inflammatory agents is associated with well-known side effects, such as infections, elevated liver enzyme levels, and interstitial pneumonia. Although generally considered safe, anti-TNF therapy does carry the risk of developing serious infections, including opportunistic and atypical diseases. This report describes a rare case of umbilical infection that occurred during therapy in a patient with UC who was receiving IFX. There have been no previous reports of omphalitis during IFX therapy in a UC patient. Here, we present the first documented case of omphalitis occurring during IFX treatment for UC.

CASE REPORT

A 38-year-old man presented with active colitis symptoms in 2018 and was diagnosed with UC. The patient was initially treated with mesalazine, followed by azathioprine. However, remission could not be achieved despite these treatments, so in August 2020, his treatment was escalated to include IFX, a biological agent. He received IFX at 5 mg/kg at weeks 0, 2, and 6, followed by an IFX regimen administered every eight weeks. The patient achieved remission under treatment with 5-aminosalicylic acid (5-ASA) and IFX.

Six weeks after the sixth dose of IFX, the patient presented with clinical signs of acute omphalitis, including redness in the umbilical region, edema, increased temperature, pain, crusting on the periumbilical skin, and intense discharge from the umbilicus (Figure 1). The patient had no previous history of umbilical infection. Abdominal tomography revealed portocaval, paraceliac, paraaortic, and mesenteric lymph nodes with a short axis of 10 mm, as well as skin thickening at the umbilical level and increased inflammatory density under the skin (Figure 2).

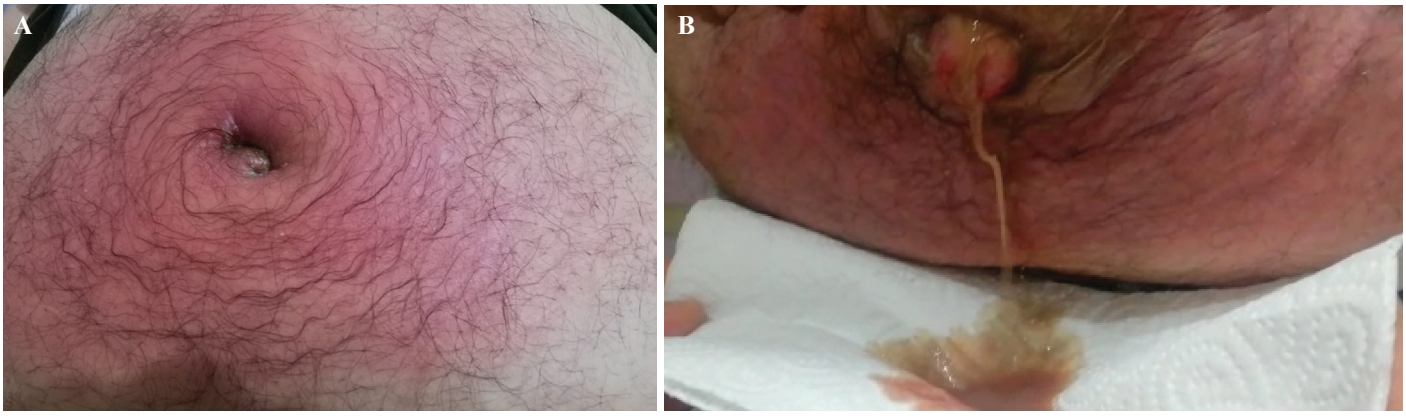

Figure 1. (A) Redness in the umbilical region, edema, crusting on the periumbilical skin, (B) and intense discharge from the umbilicus.

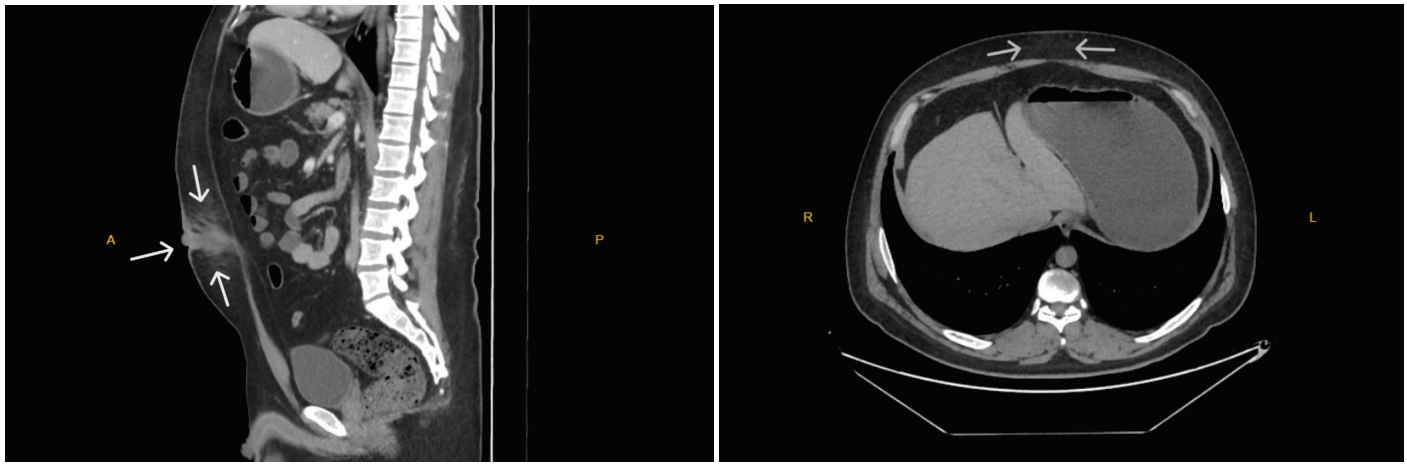

Figure 2. Abdominal CT scan showed an increase in inflammatory density was observed under the skin (with white arrows)

Blood biochemistry analysis indicated an aberrant inflammatory condition but showed no signs of anemia, liver, or kidney disease. Laboratory tests revealed an elevated white blood cell (WBC) count of 10.72 (normal range: 3.9-10.2) and raised C-reactive protein (CRP) levels at 0.01 g/L (normal range: 0-0.005). No bacterial growth was detected in the culture taken from the umbilical discharge. The patient was treated with intravenous piperacillin-tazobactam for three weeks, as recommended by infectious disease specialists, and the IFX dose was skipped. This led to complete recovery (Figure 3). After a two-month interruption, IFX and mesalazine treatment was resumed. In subsequent clinical follow-ups, the patient was observed to be in remission.

DISCUSSION

This is the first case report in the literature documenting omphalitis caused by TNF inhibitors in a patient with UC. In this report, we present a 38-year-old patient diagnosed with UC who developed acute omphalitis after the sixth dose of IFX treatment, marking the first such case described in the literature.

An essential cytokine in the pathophysiology of intestinal disorders, including Crohn's disease and ulcerative colitis, is TNF-α. IFX is an anti-TNF-α monoclonal antibody[3,4] used in both the induction and maintenance treatment of UC. IFX was the first monoclonal antibody authorized for the management of moderate-to-severe UC in adults. It has been shown to induce and sustain both mucosal healing and clinical remission. IFX targets the potent pro-inflammatory cytokine TNF-α, which plays a key role in the dysregulation of the mucosal immune response.[5]

Omphalitis, an infection of the umbilical stump, primarily affects infants and often presents as superficial cellulitis. Only a few cases have been reported in adults, and these are mainly associated with obesity, folliculitis, or conditions related to umbilical piercing. Among adults, the most significant risk factors for umbilical infection include being hirsute, having hyperhidrosis, and being obese, with these factors observed in 15% of patients with umbilical infections.[6] If an adult with recurrent omphalitis experiences umbilical discharge, embryonic abnormalities such as a patent urachus, urachal cyst or sinus, patent vitelline duct, or vitelline cyst or sinus should be considered.[7]

There has not been a documented instance of omphalitis occurring during IFX therapy in the literature. The rarity of adult umbilical infections supports the notion that this case may be associated with IFX therapy. This case underscores the need for continued vigilance in detecting clinical risks of infection in patients with UC, particularly those undergoing immunomodulatory therapy.

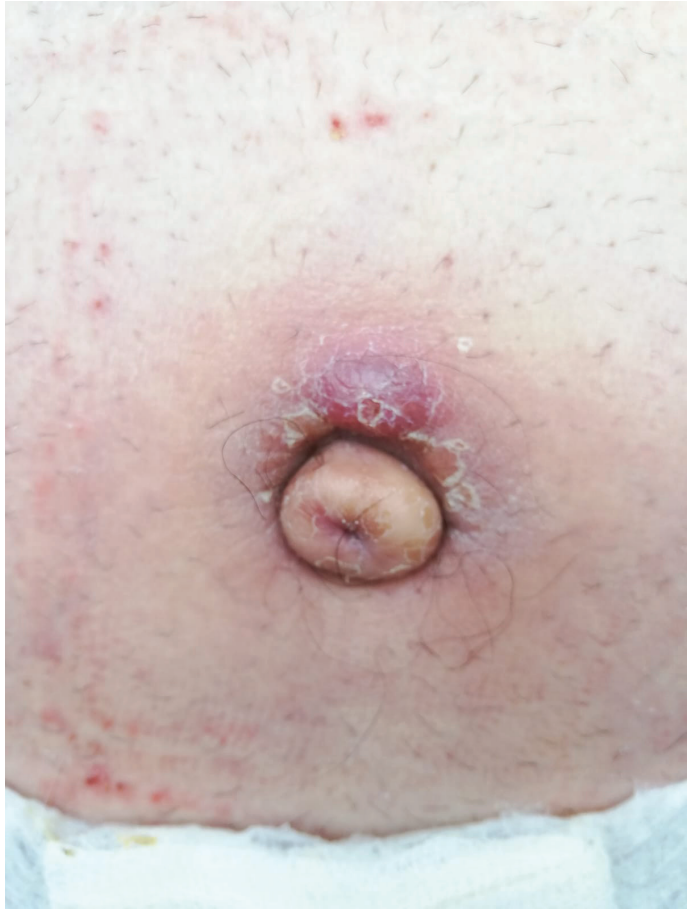

Figure 3. The infection resolved within 3 weeks with treatment.

CONCLUSION

We highlight the potential link between acute omphalitis and IFX therapy. This association should be considered when treating patients with IFX. If symptoms such as abdominal pain, redness of the abdominal skin, increased temperature, or umbilical discharge are present, IFX treatment

should be discontinued. In conclusion, this case underscores the need for continued vigilance in detecting the clinical risk of infection in patients with UC, particularly those receiving immunomodulatory therapy.

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