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Red Man Syndrome with Oral Vancomycin: A Case Report

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Abstract

Red Man syndrome (RMS) occurs with the rapid infusion of intravenous (IV) vancomycin. RMS induced by oral vancomycin has been the focus of a limited number of case reports. We present a case of a 75-year-old female admitted with severe Clostridium difficile colitis who received oral vancomycin and by the second day of therapy, she developed flushing, erythema, and pruritus involving the face, neck and upper torso. Oral vancomycin was immediately withheld, and diphenhydramine was initiated. Clinical improvement was apparent 24 hours after discontinuation of oral vancomycin. Our case adds to the published literature on this rare clinical entity that should be considered when severe colitis patients prescribed oral vancomycin, as part of the standard of care, develop the typical signs and symptoms of RMS.

Keywords

Vancomycin; red man syndrome; colitis; oral vancomycin; intravenous vancomycin; histamine release

1. Introduction

Red Man Syndrome (RMS) is an idiopathic pseudo-allergic drug reaction that may develop after administration of vancomycin [1]. It is frequently observed with infusion of vancomycin, not commonly observed with its oral administration [1]. The patient shows signs and symptoms of an allergic reaction, but without any classic allergy immunologic mechanism [2]. Common symptoms include flushing, wheezing, erythema, pruritus, hypotension and muscle spasms. This phenomenon is postulated to be related to the rate of infusion of vancomycin [3]. Other medications that have been associated with RMS include ciprofloxacin, rifampicin, teicoplanin, and amphotericin B [2]. Nevertheless, severe colonic inflammation may disrupt the mucosal barrier predisposing to the oral absorption of vancomycin.

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http://gi.org/cme-moc-and-meetings/cme-mission-statement/outstanding-poster-presenter-awards/
Outstanding Poster Presenter Awards P0178.

2. Case Presentation

A 75-year-old female with history asthma, diabetes and breast cancer status post chemotherapy was admitted for abdominal pain, watery diarrhea, and subjective fevers for four days. She had received antibiotics for pneumonia two weeks prior. On physical exam, she was febrile (103°), tachycardic (128 beats/min) and blood pressure was 100/70 mmHg. Abdominal exam revealed diminished bowel sounds and diffuse abdominal tenderness, without rebound or guarding. Laboratory data showed white blood cell count of 16,000 cells/ul with 2% bands, lactic acid was 7 mg/dL, chemistries were otherwise normal. Abdominal CT revealed diffuse wall thickening and fat stranding. Stool sample for C. difficile toxin was positive. Given the recent chemotherapy and antibiotic course, the initial concern was typhilitis or C. difficile colitis. Treatment was initiated with IV fluids, oral vancomycin 250 mg every 6 hours, IV metronidazole and ciprofloxacin. Typhlitis was excluded due to the lack of neutropenia; thus, ciprofloxacin was discontinued after one dose. Following the 7th dose of oral vancomycin the patient developed flushing, erythema, and pruritus of the face, neck and upper torso (Figure 1). The adverse reaction resolved after the discontinuation of oral vancomycin and administration of diphenhydramine (Figure 2). Oral metronidazole was continued for 14 days and patient had an uneventful recovery. The patient recalled having a previous episode of RMS with IV vancomycin, which had resolved after decreasing the infusion rate.

3. Discussion

The underlying cause of RMS, due to vancomycin, has been attributed to direct activation of mast cells rather than from anaphylactic reactions [2]. Although it is rarely life-threatening, it can lead to cardiovascular collapse due to histamine release. RMS is a reaction that occurs with the rapid parenteral administration of vancomycin however, RMS has also being described with vancomycin given via oral route and when used in powder form [3]. It has been hypothesized that severe inflammation of the gastrointestinal tract may facilitate the absorption of otherwise poorly absorbable drugs like vancomycin [3,4,5,6,7]. Accumulating evidence suggests an association between renal dysfunction and the potential risk of systemic absorption of enteral vancomycin, where it should not normally occur [3,8]. However, cases of RMS with oral vancomycin has been documented despite normal renal function [9]. These cases were seen in patients receiving vancomycin as a treatment of Clostridium difficile infection. Recently, the guidelines to treat CDI recommend oral vancomycin as the treatment of choice, which may lead to an increased number of cases of RMS after oral vancomycin [10]. In conclusion, the administration of oral vancomycin may also pose a risk of systemic side effects such as RMS. Further research is needed to characterize the exact pathogenesis of RMS occurring after oral vancomycin.

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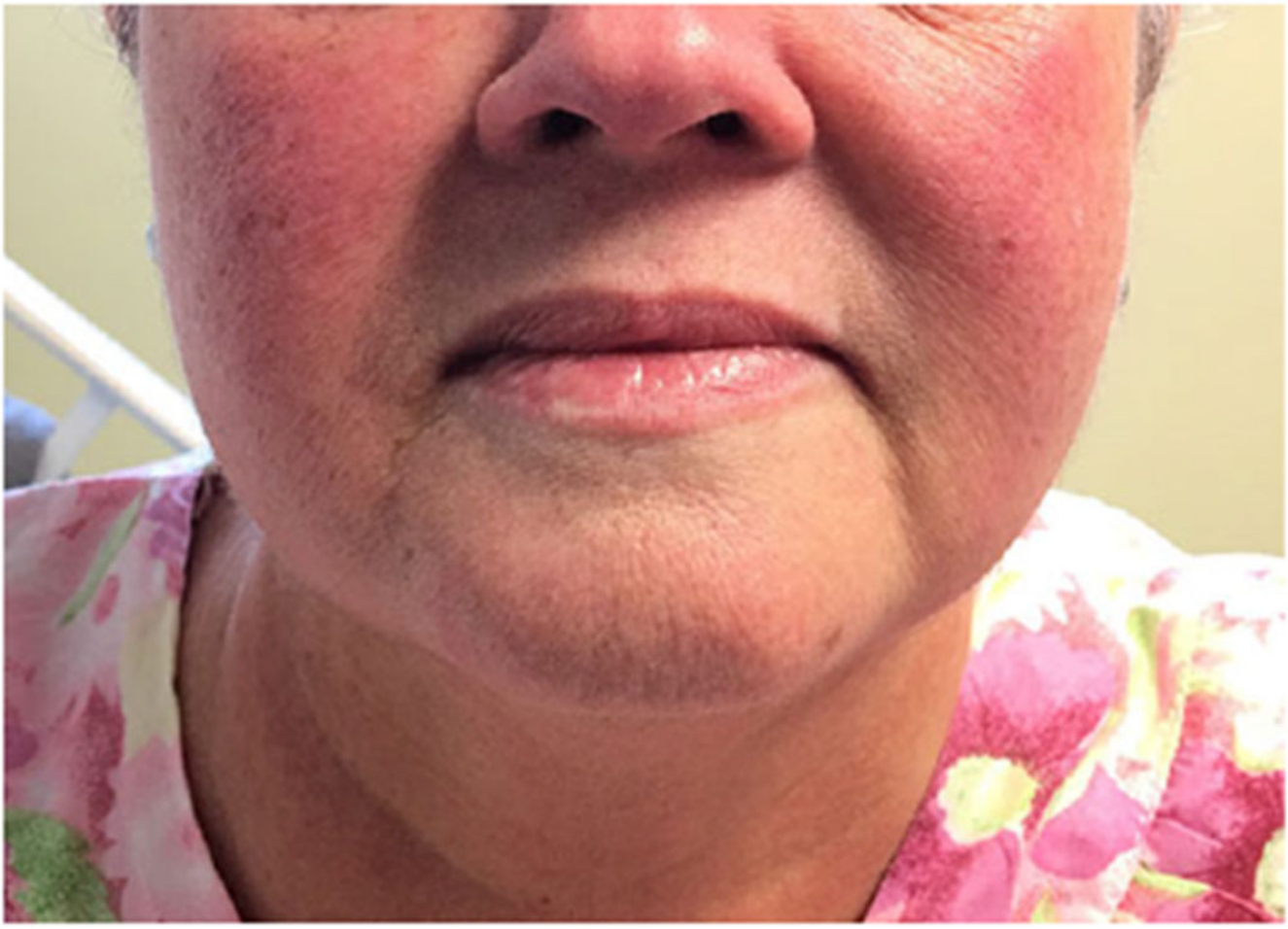

Figure 1.

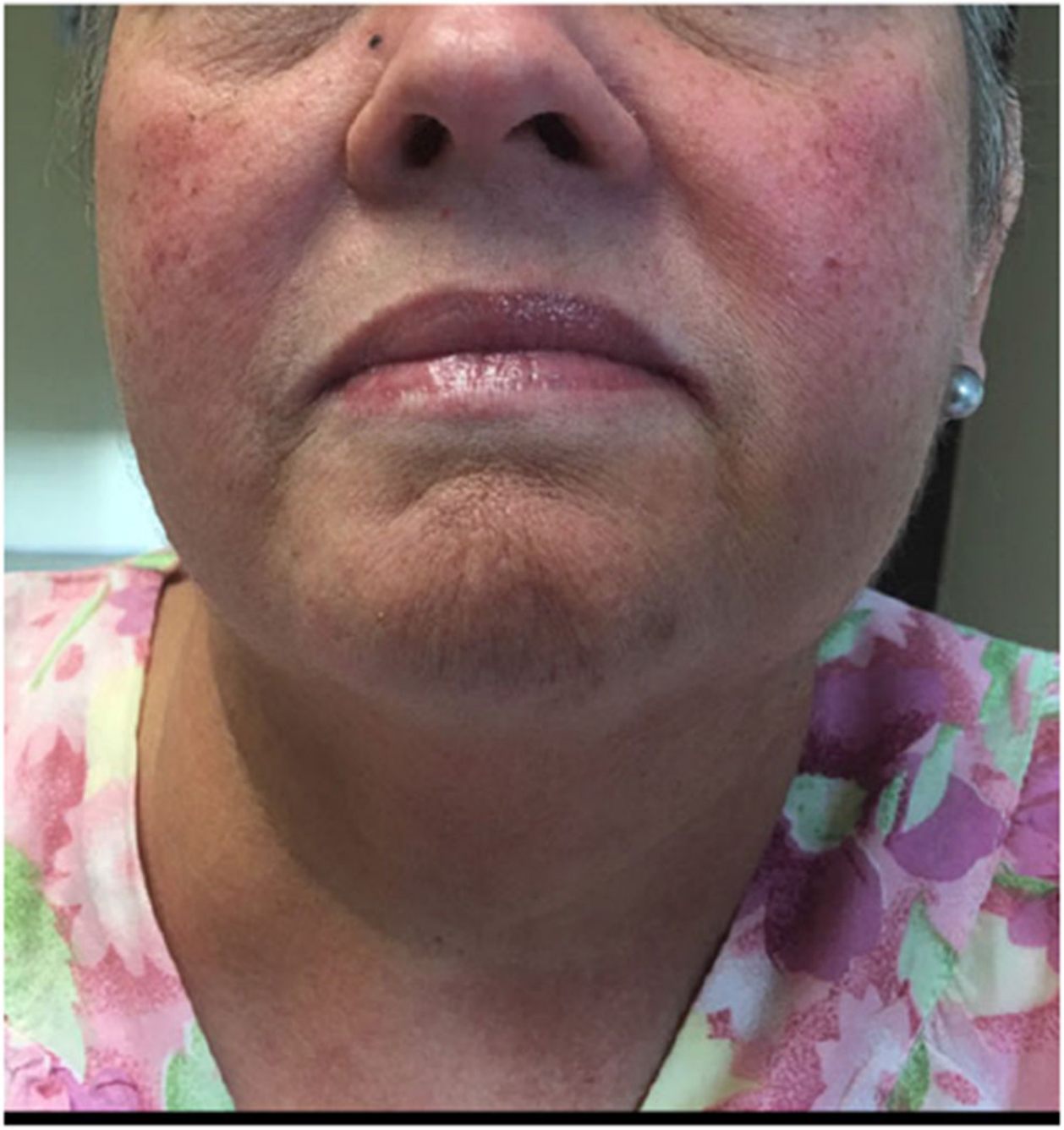

Figure 2.