Nonsteroidal anti-inflammatory drugs: An unusual cause of multiple ileal perforations

Mohamed Ali Sheredi, Zakaur Rab Siddiqui

ABSTRACT

Introduction: In this case report, we describe a rare case of pneumoperitoneum with peritonitis due to multiple ileal perforations with a history of high doses of diclofenac sodium usage.

Case Report: A young adult male with recent history of high doses of Nonsteroidal anti-inflammatory drugs (NSAIDs) presented in emergency department with acute onset pain in right iliac fossa with high grade fever and tachycardia for 12 hours. Abdomen was tender in the right iliac fossa with guarding. X-ray of chest showed free gas under the diaphragm. Exploratory laparotomy was done and showed multiple ileal perforations. Resection and anastomosis of the affected segment was done, both ends brought as double barrel ileostomy which was reversed later on without any complication.

Conclusion: High doses of Nonsteroidal anti-inflammatory drugs can cause multiple ileal erosions and perforation and should be considered in the differential diagnosis, if other possibilities are excluded.

International Journal of Case Reports and Images (IJCRI)

International Journal of Case Reports and Images (IJCRI) is an international, peer reviewed, monthly, open access, online journal, publishing high-quality, articles in all areas of basic medical sciences and clinical specialties.

Aim of IJCRI is to encourage the publication of new information by providing a platform for reporting of unique, unusual and rare cases which enhance understanding of disease process, its diagnosis, management and clinico-pathologic correlations.

IJCRI publishes Review Articles, Case Series, Case Reports, Case in Images, Clinical Images and Letters to Editor.

Website: www.ijcasereportsandimages.com

CASE REPORT

PEER REVIEWED | OPEN ACCESS

Nonsteroidal anti-inflammatory drugs: An unusual cause of multiple ileal perforations

Mohamed Ali Sheredi, Zakaur Rab Siddiqui

ABSTRACT

Introduction: In this case report, we describe a rare case of pneumoperitoneum with peritonitis due to multiple ileal perforations with a history of high doses of diclofenac sodium usage. **Case Report:** A young adult male with recent history of high doses of Nonsteroidal anti-inflammatory drugs (NSAIDs) presented in emergency department with acute onset pain in right iliac fossa with high grade fever and tachycardia for 12 hours. Abdomen was tender in the right iliac fossa with guarding. X-ray of chest showed free gas under the diaphragm. Exploratory laparotomy was done and showed multiple ileal perforations. Resection and anastomosis of the affected segment was done, both ends brought as double barrel ileostomy which was reversed later on without any complication. **Conclusion:** High doses of Nonsteroidal anti-inflammatory drugs can cause multiple ileal erosions and perforation and should be considered in the differential diagnosis, if other possibilities are excluded.

Keywords: Diclofenac sodium, Ileum, Intestinal perforation, Nonsteroidal anti-inflammatory drugs (NSAIDs)

How to cite this article

Sheredi MA, Siddiqui ZR. Nonsteroidal anti-inflammatory drugs. Int J Case Rep Images 2015;56(9):587–590.

doi:10.5348/ijcri-201596-CR-10557

INTRODUCTION

Nonsteroidal anti-inflammatory drugs (NSAIDs) are known to have adverse effects on the upper gastrointestinal tract, however, its effect on the small intestine are not well described [1]. It is proven that NSAIDs can be harmful to the small intestine and can be associated with multiple complications, such as, small intestinal strictures, ulcerations, perforations, diarrhea, and villous atrophy. The NSAIDs can have adverse effects in any part of the gastrointestinal tract including, oesophagus, stomach, duodenum, small intestine, or colon [2, 3]. Risk is increased with age, in first three months of treatment, smoking, associated cardiovascular or respiratory disease, high dose and multiple NSAIDs, and concomitant use of anticoagulant or steroids [1, 3].

Herein, we report a case of NSAID-induced multiple small bowel erosions and perforations that involved the proximal as well as distal ileum. Furthermore, similar cases of NSAID-induced enteropathy described in literature are also reviewed, in which other causes were ruled out by obtaining biopsy specimens for histologic analysis.

CASE REPORT

A 31-years-old male, with no known co-morbidity, presented in emergency department with a history of severe right lower quadrant pain of more than 12 hours

Mohamed Ali Sheredi¹, Zakaur Rab Siddiqui²

Affiliations: ¹Consultant General Surgeon, Arrayan Hospital, Dr Sulaiman Alhabib Medical Group, Riyadh, Saudi Arabia; ²Senior Specialist General Surgeon, Arrayan Hospital, Dr Sulaiman Alhabib Medical Group, Riyadh, Saudi Arabia.

Corresponding Author: Dr. Zakaur Rab Siddiqui FRCS, FCPS, Senior Specialist General Surgeon, Arrayan Hospital, Dr Sulaiman Alhabib Medical Group, Po Box 100266, Riyadh, Saudi Arabia; Email: drzaka2003@yahoo.com

Received: 13 May 2015

Accepted: 01 June 2015

Published: 01 September 2015

that was not responding to analgesics. There is associated intermittent high grade fever (up to 39.5°C), severe sore throat, and weight loss of 6 kg over 2 weeks, for which he received augmentin for a week and cefuroxime for another week with no improvement.

On physical examination in the emergency room the patient was tachycardiac, tachypneic, febrile and showed presence of severe follicular tonsillitis with oral ulcers. On further interrogation, the patient revealed that 16–20 tablets of diclofenac potassium per day for his pain for two weeks prior to the onset of his abdominal symptoms.

Systemic examination showed bilaterally equal air entry in the chest with regular heart sounds and no audible murmur. There was diffuse abdominal distention along with tenderness more in the lower abdomen. Although white cell count was high, however, all other laboratory tests including the Widal test were normal.

Urgent ultrasound of abdomen done which revealed free fluid in the abdomen. A chest X-ray showed free air under the diaphragm on the right side and an emergency laparotomy was performed for suspected peritonitis associated with intestinal perforation. Peroperatively, there were multiple small bowel perforation in the terminal ileum each approximately 5 mm in size along with a few impending perforations (Figure 1).

Approximately 15 cm of the ileum was resected due to very close and tinny perforations in which suturing was impossible, ileostomy was done with planned scheduled relook laparotomy through the laparostomy (mesh and VAC used).

Three relook laparotomies were performed and showed new perforations with impending perforations which were fixed by either primary repair or burying it inside

Workup was done for the etiology including stool analysis for *Compylobacter jejuni*, *Yersinia enterocolitica*, *Salmonella*, *Shigella* and *Clostridium difficile* and found to be negative. Serum markers for vasculitis were also negative.

Histopathology report showed nonspecific inflammation and excluded inflammatory bowel disease, vasculitis, and vascular thrombi. Only positive history found was ingestion of high dose nonsteroidal anti-inflammatory analgesics.

Patient recovered slowly but well and discharged after two weeks of hospital stay. After six weeks ileostomy reversal was done without any complications and remained healthy till now (six months postoperatively)

DISCUSSION

The differential diagnosis of nonspecific erosions, ulcerations and perforation of the small intestine includes Crohn's disease, Typhoid fever trauma (from ingested toothpicks or bones), infection (cytomegalovirus, tuberculosis, or *Yersinia*), Vasculitides (such as lupus, rheumatoid, or periarteritis nodosa) postradiation

Figure 1: Multiple ileal perforations noted peroperatively.

therapy, ischemia, and various medications (like enteric-coated potassium). In certain case reports, rheumatoid vasculitis and other collagen vascular diseases are supposed to be responsible for described intestinal strictures and inflammation, therefore, patients suffering from such diseases should be thoroughly examined, as NSAIDs are usually mainstay to treat these disorders [3, 4].

In contrast to the previously accepted belief, recently, it is documented that NSAID-induced gastrointestinal injury occurs more frequently in the small bowel than in the stomach [4, 5]. (NSAID) induced enteropathy may manifest acutely as well as after chronic use, being five patients described in one study after use of medication for less than 4 weeks [6, 7]. Like-wise, the development of enteropathy does not seem to be related to the route of administration of NSAIDs, because, use of Osmosin, a now obsolete indomethacin rectal suppository, was also associated with ileal perforations [8]. However, the effect of intravenous route has yet to be established. Furthermore, in another study, majority of patients with NSAID-induced enteropathy were taking either indomethacin or piroxicam preparations for more than a month. Among these patient, 40% had intestinal obstruction, 40% had ulceration and anemia, and 12% had intestinal perforation, suggesting the NSAIDs as a possible cause. In a separate autopsy series, undiagnosed

small bowel perforations was found to be the cause of death in three patients who had received long-term Aspirin therapy, that is, for six months or more [9]. In the study described previously, most of the patient underwent intestinal resection while in about one-fifth of them, the only treatment was discontinuation of use of NSAIDs [9]. Considering that, if the disease is suspected and treated early, it may preclude the need of surgery, thus, considerably reducing the associated morbidity and mortality.

In the case described here, the patient high doses of diclofenac sodium orally for two weeks. The subsequent laboratory and histopathologic findings were unable to identify any etiology for his ileal perforations other than NSAID-induced enteropathy, including inflammatory bowel disease, trauma, typhoid, tuberculosis and amoebiasis. Therefore, a diagnosis of diclofenac sodium-induced multiple ileal perforation was reached.

In another retrospective study, it is noted that those patients who were taking NSAIDs were twice as likely to have small and large bowel perforations or hemorrhage in comparison with control patients [10], further supporting our presumption in this case.

CONCLUSION

High doses of nonsteroidal anti-inflammatory drugs can cause multiple ileal erosions and perforation and should be considered in the differential diagnosis, if other possibilities are excluded. Early suspicion and timely intervention may reduce the associated morbidity and mortality.

*****

Author Contributions

Mohamed Ali Sheredi – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Zakaur Rab Siddiqui – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

Copyright

© 2015 Mohamed Ali Sheredi et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly

credited. Please see the copyright policy on the journal website for more information.

REFERENCES

1. Kim JW. NSAID-induced gastroenteropathy. *Korean J Gastroenterol* 2008 Sep;52(3):134–41.
2. Shioya N, Shibata S, Kojika M, Endo S. Multiple transverse colonic perforations associated with slow-release nonsteroidal anti-inflammatory drugs and corticosteroids: a case report. *Case Rep Crit Care* 2011;2011:824639.
3. Saw KC, Quick CR, Higgins AF. Ileocaecal perforation and bleeding—are non-steroidal anti-inflammatory drugs (NSAIDs) responsible? *J R Soc Med* 1990 Feb;83(2):114–5.
4. Deakin M. Small bowel perforation associated with an excessive dose of slow release diclofenac sodium. *BMJ* 1988 Aug 13;297(6646):488–9.
5. Cree IA, Walker MA, Wright M, Forrester JC. Osmosis and ileal ulceration: a case report. *Scott Med J* 1985 Jan;30(1):40–1.
6. Gibson GR, Whitacre EB, Ricotti CA. Colitis induced by nonsteroidal anti-inflammatory drugs. Report of four cases and review of the literature. *Arch Intern Med* 1992 Mar;152(3):625–32.
7. Kuehne SE, Gauvin GP, Shortsleeve MJ. Small bowel stricture caused by rheumatoid vasculitis. *Radiology* 1992 Jul;184(1):215–6.
8. Okuda Y, Takasugi K, Imai A, et al. Two cases of rheumatoid arthritis complicated with vasculitis-induced ischemic enterocolitis. *Ryumachi* 1990 Oct;30(5):403–7, 408; discussion 407–8.
9. Allison MC, Howatson AG, Torrance CJ, Lee FD, Russell RI. Gastrointestinal damage associated with the use of nonsteroidal antiinflammatory drugs. *N Engl J Med* 1992 Sep 10;327(11):749–54.
10. Langman MJ, Morgan L, Worrall A. Use of anti-inflammatory drugs by patients admitted with small or large bowel perforations and haemorrhage. *Br Med J (Clin Res Ed)* 1985 Feb 2;290(6465):347–9.

Access full text article on
other devices

Access PDF of article on
other devices

Edorium Journals: An introduction

Edorium Journals Team

About Edorium Journals

Edorium Journals is a publisher of high-quality, open access, international scholarly journals covering subjects in basic sciences and clinical specialties and subspecialties.

Invitation for article submission

We sincerely invite you to submit your valuable research for publication to Edorium Journals.

But why should you publish with Edorium Journals?

In less than 10 words - we give you what no one does.

Vision of being the best

We have the vision of making our journals the best and the most authoritative journals in their respective specialties. We are working towards this goal every day of every week of every month of every year.

Exceptional services

We care for you, your work and your time. Our efficient, personalized and courteous services are a testimony to this.

Editorial Review

All manuscripts submitted to Edorium Journals undergo pre-processing review, first editorial review, peer review, second editorial review and finally third editorial review.

Peer Review

All manuscripts submitted to Edorium Journals undergo anonymous, double-blind, external peer review.

Early View version

Early View version of your manuscript will be published in the journal within 72 hours of final acceptance.

Manuscript status

From submission to publication of your article you will get regular updates (minimum six times) about status of your manuscripts directly in your email.

Our Commitment

Six weeks

You will get first decision on your manuscript within six weeks (42 days) of submission. If we fail to honor this by even one day, we will publish your manuscript free of charge.

Four weeks

After we receive page proofs, your manuscript will be published in the journal within four weeks (31 days). If we fail to honor this by even one day, we will publish your manuscript free of charge and refund you the full article publication charges you paid for your manuscript.

Most Favored Author program

Join this program and publish any number of articles free of charge for one to five years.

Favored Author program

One email is all it takes to become our favored author. You will not only get fee waivers but also get information and insights about scholarly publishing.

Institutional Membership program

Join our Institutional Memberships program and help scholars from your institute make their research accessible to all and save thousands of dollars in fees make their research accessible to all.

Our presence

We have some of the best designed publication formats. Our websites are very user friendly and enable you to do your work very easily with no hassle.

Something more...

We request you to have a look at our website to know more about us and our services.

We welcome you to interact with us, share with us, join us and of course publish with us.

Edorium Journals: On Web

Browse Journals

CONNECT WITH US