CASE REPORT

Massive Bleeding From Colonic Diverticular Disease With NSAID Use

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Abstract

Non-steriodal anti-inflammatory drugs (NSAID) are not only associated with bleeding in the stomach and duodenum, but can also complicate pre-existing diverticular disease of the colon. Here, a 58 year-old male with severe per rectal bleeding is presented and the role of NSAID as a causative factor of his problem is discussed.

Key Words: NSAID, Diverticilar disease, Bleeding

Introduction

NSAID's are among the most commonly prescribed group of drugs all over the world. Though this attests to the efficacy of these drugs, their side effects have become a great concern for both the physicians and surgeons alike and their effects on the gastric mucosa is well documented. Less widely known however, is their effect on the small and large intestines especially in cases of a pre-existing lesion such as diverticular disease[1].

Case Report

A 58 year-old Malay male was admitted to the emergency ward late at night with massive per rectal bleeding which had started about one hour prior to his admission. Within the hour he had had six to seven episodes of passing fresh blood and clots and claimed that at each episode he passed out about 250 - 300ml of blood. He gave a history of haemorrhoids diagnosed twenty years previously but had been asymptomatic since. A known diabetic on medication, he was also being treated for a painful right shoulder with diclofenac 50mg t.d.s. for a week prior to his admission. The private practitioner had also prescribed him a proton-pump inhibitor, Omeprazole, to prevent gastric complications. He had previously taken aspirin for headaches occasionally without any adverse reactions. He had no history of any bleeding tendency.

On examination he was pale but alert with a blood pressure reading of 120/80mm.Hg and pulse was 100/min. There were no other positive findings except for the massive bleeding per rectally. Urgent upper (OGDS) and lower (Colonoscopy) gastrointestinal endoscopic examination were performed. The OGDS findings were normal but the colonoscopy showed large amounts of blood all along the colon with two small polyps and also extensive diverticular disease extending from the caecum to the transverse colon. The exact site of bleeding however, could not be identified. As the patient was now haemodynamically stable, he was planned for an elective endoscopic examination after bowel preparation.

In the early hours of following day the patient began to bleed profusely again and this time he became haemodynamically unstable and went into shock with a thready pulse of 104/min. and blood pressure of 90/60mm.Hg. As an urgent angiogram was not available and as the patient's condition was rapidly deteriorating an emergency laparotomy was performed.

As blood was noted in the terminal ileum an on-table enteroscopy was done. The small bowel appeared normal but blood and blood clots were seen in the terminal ileum and colon. The exact site of bleeding however could not be identified. A subtotal colectomy with ileo-sigmoid anastomosis was performed and a total of 18 units of blood and blood products was transfused intra-operatively.

Post-operatively the patient was nursed in the intensive care unit (ICU). Postoperative recovery was complicated by systemic inflammatory response syndrome (SIRS) due to the massive blood transfusion and gram negative septicaemia. He recovered fully and was discharged home a month later. On review at the surgical clinic at six weeks and three months, the patient was well, his wound healed completely and with normal bowel function. Examination of the specimen confirmed diverticular disease of the colon with a blood clot overlying a vessel of diverticulum in the ascending colon. There were two small tubular adenomas with no evidence of recent bleeding. There was no evidence of any malignancy, colitis or angiodysplasia in the resected specimen.

Discussion

Diverticular disease, an acquired disease, is one of the most common disorders of the colon in the elderly in the western society. With the change in dietary habits of the developing nations, towards that of the western diet, the colonic diverticular disease is being seen more commonly in developing nations. However unlike in the western society, where the sigmoid colon is involved in 95% of cases, solitary diverticulum of the ceacum and diverticula in the right side of the colon are distinct entities seen more commonly in Asians.

The diverticulum normally occurs in the anti-mesenteric border, at the point of entry of the blood vessels which pierce the muscular wall thus the weakest point there. With increased intra-luminal pressures these weak spots are pushed out forming a false diverticulum as these diverticula hardly have any muscle covering. Though asymptomatic in most cases, in 10 - 20% of the cases affected patients present with symptoms of abdominal pain, change in bowel habits, bleeding or perforation[2].

Aldori el al studied 35,615 male health professionals and the association of NSAID's and colonic diverticular disease, and concluded that regular and consistent use of NSAID's is associated with symptoms of severe diviticular disease, particularly bleeding[2]. In a case controlled study, Campbell and Steele showed that patients who had a complicated diverticular disease were more than twice as likely to be taking NSAID and usually for pain other than an abdominal pain. The problems seen here are bleeding from the diverticulum, perforation and/or fistula formation[2,3]. Most NSAID inhibit prostaglandin synthesis by inhibiting the enzyme cyclooxygenase (COX). COX has two isoforms COX-1 and COX-2 with COX-1 expressed constitutively in most tissues throughout the body including the gastrointestinal mucosa and COX-2 expressed at low levels[1]. Most of the NSAIDs currently in use inhibit COX-1 and gastrointestinal COX-1 is responsible for catalyzing the synthesis of mucosal-protective prostaglandins. Therefore inhibition of this causes the mucosal barrier to be inadequate and breached easily and in cases of the diverticula in the colon this inadequacy exposes the vessel leading to erosion and bleeding. The inhibitory effects of the NSAID may also impair the ability of the colon the inflammatory processes occurring within the diverticula[2]. Furthermore, the inhibition of platelet aggregation by NSAIDs may cause bleeding to occur in the diverticula. It has also been suggested that the NSAID that is caught in the diverticulum can have a direct effect and cause ulcerative proctitis and colitis with massive bleeding[2]. One other surprising finding is that bleeding from the diverticulum has been seen even with use of acetoaminophen, a drug similar to paracetamol[2], which has long been thought to be safe as far as erosion and bleeding are concerned.

As the adverse effects of NSAIDs on the stomach are well known, they are generally prescribed along with an H_2-antagonist or a proton-pump inhibitor. Patients are also advised on the symptoms and signs to look for in such cases. With the less known complications in the colon, patients may be seen with massive lower gastrointestinal bleed which is life threatening, and the source of bleeding may be difficult to identify. Therefore, caution must be exercised in the use of NSAID and one must have a high degree of suspicion of diverticular bleeding in patients who are on NSAID and who present with massive lower gastrointestinal bleeding.

References

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