

CASE REPORT

Corticosteroid-induced multiple colonic diverticulae perforation: a case report of a patient with brain metastases from fascial melanoma

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ABSTRACT

Colon diverticulae may rupture due to increased intraluminal pressure in combination with several other factors, such as corticosteroid or nonsteroidal anti-inflammatory drugs administration, smoking and alcohol consumption. Cortisone is considered a well-known risk factor for diverticular perforation in neurosurgical patients. We report a case of a 73-year-old male patient, with a known past medical history of fascial melanoma treated with wide local excision and two brain metastases managed with methylprednisolone, who presented with clinical and radiological diverticular perforation. At laparotomy a fecal peritonitis and multiple diverticulae ruptures of the descending and sigmoid colon was found (Hinchey stage D). A Hartmann's procedure was undertaken, but the patient unfortunately died from septic sequelae on the 13th postoperative day.

Keywords: colon diverticulae, corticosteroid, fascial melanoma, brain metastasis

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INTRODUCTION

Diverticular disease is one of the most common diseases of the gastrointestinal tract (GI), requiring in-hospital treatment in Western countries. Most people with diverticular disease remain asymptomatic; however, 15% develop symptoms, and of these 15% develop significant complications such as

perforation. Although the absolute prevalence of perforated diverticulitis complicated by generalized peritonitis is low, its importance lies in the significant postoperative rate, ranging from 4%-26% [1, 2].

The pathogenesis of diverticular disease, diverticulitis and perforation seem to have multifactorial origins, including lifelong dietary, medicine use, coexistence of other bowel or collagen related diseases, and genetic

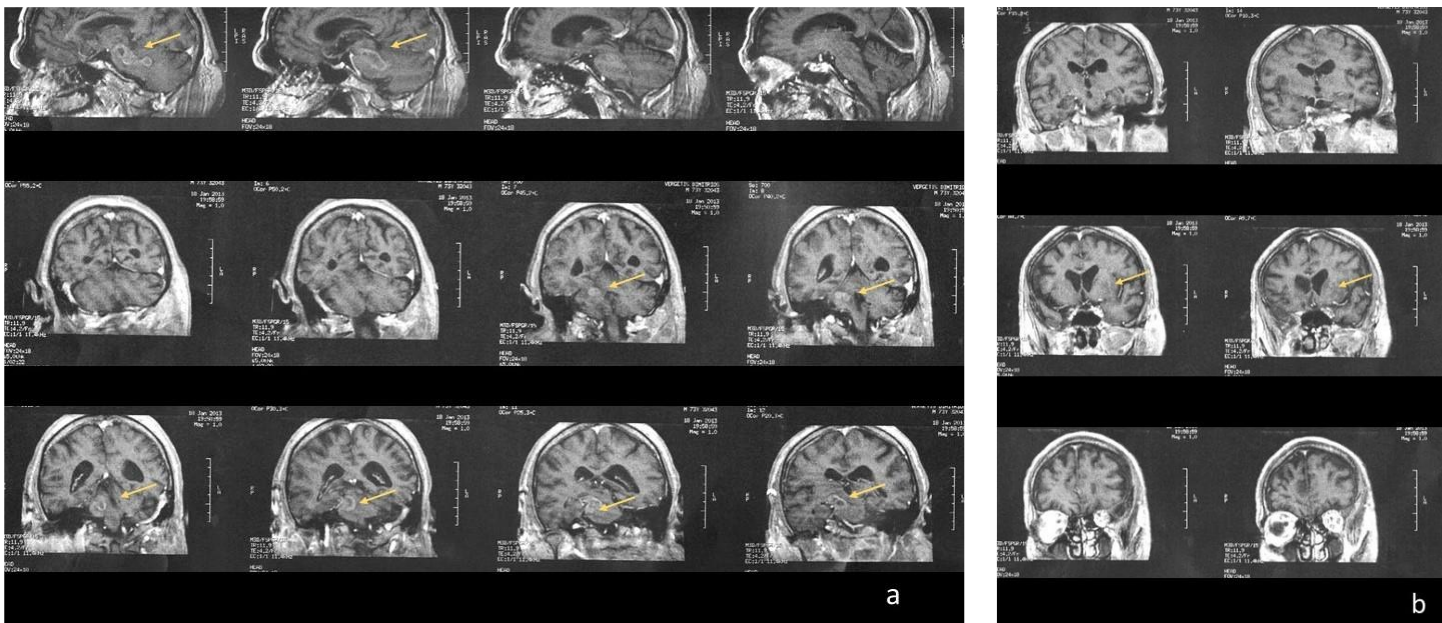


Figure 1. Computed tomography demonstrated **a)** two brain metastases (depicted by yellow arrows) at the level of midbrain and **b)** two brain metastases (depicted by yellow arrows) at the basal ganglia.

influences. We herein present a case of patient on corticosteroid therapy who presented with sigmoid diverticulae perforation.

CASE PRESENTATION

A 73-year-old male patient presented to the surgical emergency department of our institution with a two-day history of constipation, diffuse abdominal pain and progressively increasing abdominal distention, without nausea or vomiting and no fever. His past medical history revealed a stage IV fascial melanoma treated by local wide excision a year ago and two brain metastases, at the basal ganglia and at the level of midbrain (Figure 1), managed with chemo-radiotherapy.

He had an associated left sided hemiparesis, and he was currently on

methylprednisolone 10 mg b.i.d. Past medical history also included hypertension, insulin-independent diabetes mellitus and left colon diverticulosis, which was incidentally found on the staging process for, his melanoma. He was oriented per three and his physical examination revealed a rigid abdomen with diffuse tenderness on palpation, rebound tenderness and absence of bowel sounds on auscultation. His WBC count was within normal limits. Plain abdominal x-rays, decubitus and upright, showed infra-diaphragmatic free peritoneal air (Figure 2).

Subsequent abdominal computed tomography with oral and intravenous contrast demonstrated wall thickening of the sigmoid and descending colon, inflammation of the pericolic fat with associated extraluminal air and free peritoneal fluid in the pelvis (Figure 3). With the presumptive diagnosis of perforated colonic diverticulae

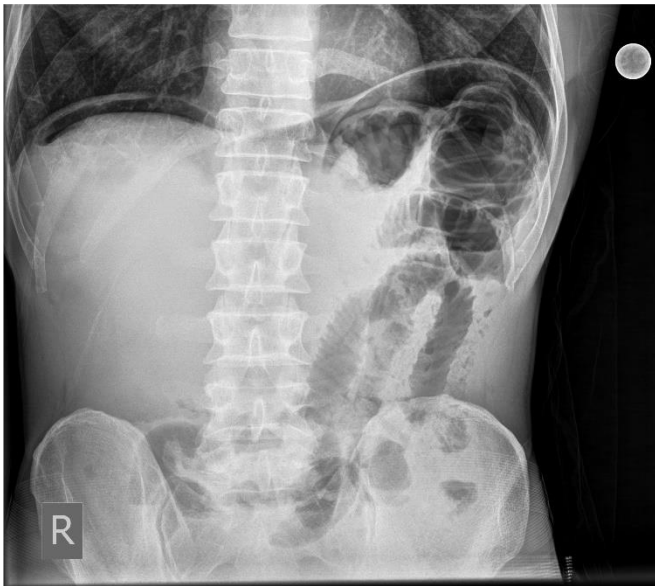


Figure 2. Plain abdominal x-ray in the upright position showing infra-diaphragmatic free air.

the patient was admitted to the operative room. At laparotomy, a large amount of fecal material was present in the peritoneal cavity and perforations of multiple diverticulae of the sigmoid and descending colon were found (Hinchey stage D). A meticulous peritoneal lavage was undertaken and resection of the sigmoid and descending colon with an end colostomy and stapled closure of the rectal stump (Hartmann's procedure) was performed. Postoperative course was complicated by progressive worsening of the level of consciousness, atrial fibrillation associated tachyarrhythmia and acute respiratory distress (all manifestations in the context of sepsis) and, finally, the patient died on the 13th postoperative day.

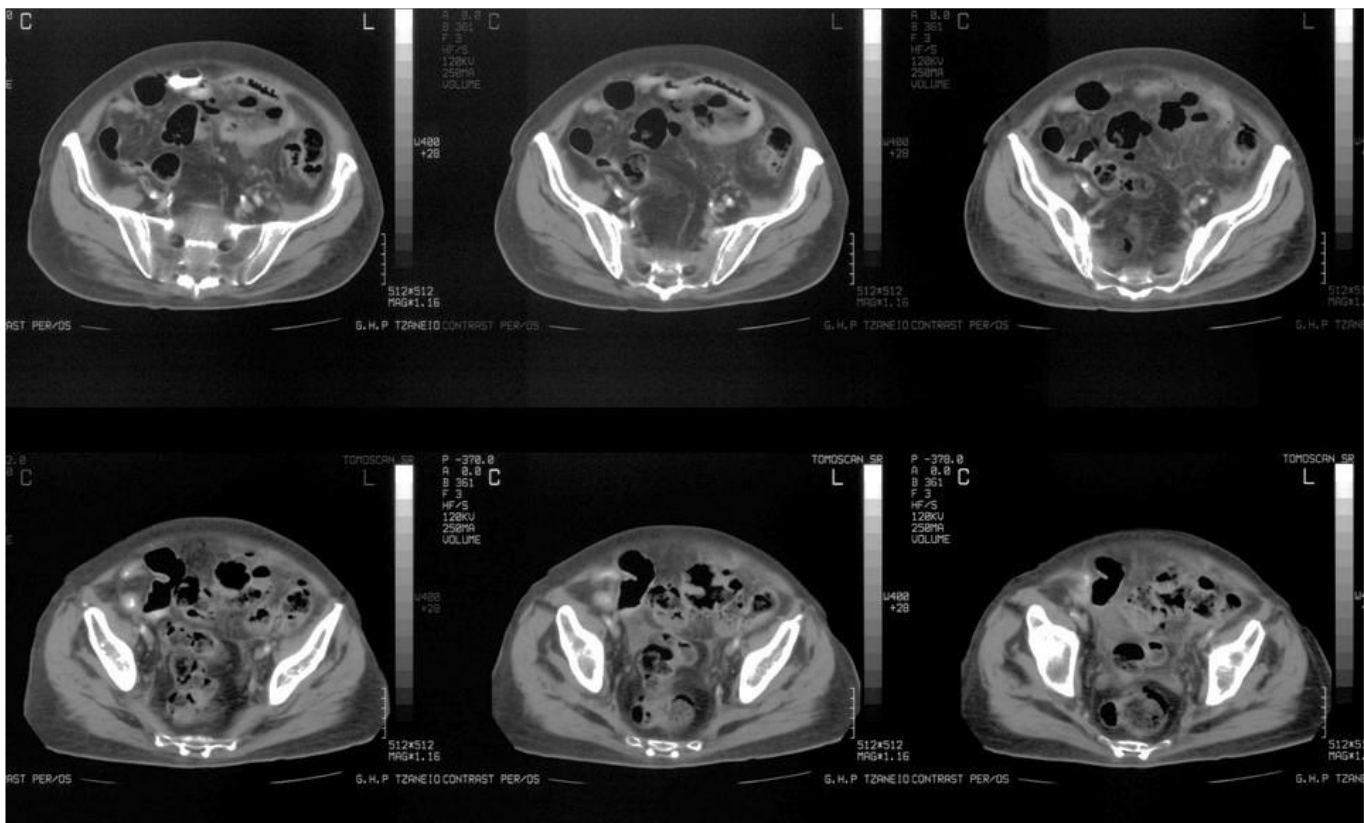


Figure 3. Abdominal computed tomography demonstrated wall thickening of the sigmoid and descending colon, inflammation of the pericolic fat with associated extraluminal air and free peritoneal fluid in the pelvis.

DISCUSSION

The etiology of diverticular perforation remains unknown, but it is thought to be a result of an excessive increase in intra-diverticular pressure and focal necrosis of the protruding bowel mucosa [3]. This local perforation may form pericolic phlegmons and pus collections (Hinchey I), may progress further developing localized abscesses between loops of small bowel or in the pelvic peritoneum (Hinchey II) and if the perforation is not contained, the abdominal peritoneum becomes freely contaminated, producing either generalized purulent peritonitis (Hinchey III) or fecal peritonitis (Hinchey IV).

In general, patients with diverticular disease show raised intracolonic pressures, especially in the sigmoid colon. As almost all diverticular perforations occur in the sigmoid colon, these pressure changes are considered an important etiological factor. Furthermore, the properties of the colonic wall are likely important because diverticula consist predominately of mucosa lacking a smooth muscle layer. The mucosa layer is vulnerable and may be impaired by various exogenous factors, such as the use of nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids or opiate analgesics, smoking and alcohol consumption.

Corticosteroids play a key role in the treatment of neurosurgical patients, especially those with brain tumors. One of their known complications are the GI tract perforation, especially the upper GI. Since the routine use of histamine Type 2 blockers these have become less common. Colonic perforation due to diverticuli is not very common even in patients receiving corticosteroids. In the neurosurgical literature there is a review from Weiner HL et al analyzing diverticulae perforation in neurosurgical patients on corticosteroids [4]. From a total of 719 patients receiving corticosteroids only 5 experienced colonic perforation. One of them died. The diverticulae perforation in patients on corticosteroid treatment is not very common but is a serious complication with high morbidity and mortality. The fact that the patient receive corticoid can mask the perforation and delay the proper diagnosis and treatment.

CONCLUSIONS

When a patient experiences abdominal discomfort and he is on corticosteroid medication we should always be alert and look for colonic perforation, especially in those with known history of diverticulae.

ΒΙΒΛΙΟΓΡΑΦΙΑ

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ΠΑΡΟΥΣΙΑΣΗ ΠΕΡΙΣΤΑΤΙΚΟΥ

Διάτρηση εκκολπωμάτων σιγμοειδούς λόγω λήψης κορτικοειδών: παρουσίαση περιστατικού ασθενή με εγκεφαλικές μεταστάσεις από μελάνωμα προσώπου

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ΠΕΡΙΛΗΨΗ

Τα εκκολπώματα του παχέος εντέρου ρήγνυνται από αυξημένη ενδοαυλική πίεση σε συνδυασμό με άλλους παράγοντες, όπως η λήψη κορτικοειδών ή μη-στεροειδών αντιφλεγμονωδών φαρμάκων, το κάπνισμα και η καταναλώση αλκοόλ. Η κορτιζόνη θεωρείται ότι είναι γνωστός παράγοντας κινδύνου για διάτρηση εκκολπωμάτων σε νευροχειρουργικούς ασθενείς. Παρουσιάζουμε περίπτωση άνδρα ασθενή 73 ετών, με παλαιότερο ιστορικό μελανώματος προσώπου που είχε αντιμετωπισθεί με ευρεία εκτομή, ενώ είχε παρουσιάσει δυο μεταστατικές εστίες στον εγκέφαλο που είχαν αντιμετωπισθεί με λήψη μεθυλπρεδνιζολόνης, ο οποίος προσήλθε στο ΤΕΠ με κλινική και ακτινολογική εικόνα ρήξης εκκολπωμάτων σιγμοειδούς. Στην ερευνητική λαπαροτομία αναγνωρίστηκε κοπρανώδης περιτονίτιδα και ρήξη πολλαπλών εκκολπωμάτων του κατιόντος και σιγμοειδούς κόλου (Hinchey stage D). Ο ασθενής υποβλήθηκε σε AP κολεκτομή, σύγκλιση του κολοβώματος του ορθού και τελική κολοστομία κατά Hartmann, αλλά δυστυχώς κατέληξε την 13η μετεγχειρητική ημέρα λόγω σηπτικών επιπλοκών.

Λέξεις-ερευρηρίου: εκκολπώματα παχέος, κορτικοειδή, μελάνωμα προσώπου, εγκεφαλικές μεταστάσεις

Α. Μαρίνης, Σ. Δρακοπούλου, Ι. Κορνέζος, Σ. Βεδεράκη, Ε. Μπουρμπουτέλη, Α. Τσιάκα, Ν. Ζαμπίτης, Ν. Βλαχάκος. Διάτρηση εκκολπωμάτων σιγμοειδούς λόγω λήψης κορτικοειδών: παρουσίαση περιστατικού ασθενή με εγκεφαλικές μεταστάσεις από μελάνωμα προσώπου. Επιστημονικά Χρονικά 2022; 27(2): 352-356
