

Acute Diverticulitis During Coronavirus Pandemic (COVID-19): Clinical Presentation and CT Findings

N. Hossain, V. Naidu, S. Hosny, M. Khalifa, P. Mathur, M. Al Whouhayb

Department of General Surgery and Department of Radiology, Barnet Hospital

Royal Free London NHS Foundation Trust

Background and Aim

- The novel coronavirus disease 2019 (COVID-19) pandemic has resulted in fewer emergency presentations of many acute medical and surgical conditions.
- The goal of this study was to assess the severity of disease at presentation and quantify the change in number of presentations during this period.

Materials and Methods

- Retrospective study of all patients with acute diverticulitis on abdominopelvic CT between 1st March 2020 to 30th June 2020, the "acute pandemic period", compared to the same period in 2019.
- Follow up scans on the index admission were excluded. Hinchey grade for all CT scans assessed.
- Inflammatory markers and outcome measures including length of stay and mortality were analysed.

Modified Hinchey classification	Description	CT findings
0	Mild clinical diverticulitis	Diverticuli and colonic wall thickening
Ia	Confined pericolic inflammation or phlegmon	Peridiverticular fat stranding with adjacent colonic wall thickening
Ib	Confined pericolic abscess	Ia and peridiverticular abscess <4cm
II	Pelvic, distal intra-abdominal or retroperitoneal abscess	Ia and distant abscess (deep in the pelvis or peridiverticular abscess >4cm)
III	Generalised purulent peritonitis	Free air with localised or generalised ascites and possible peritoneal wall thickening
IV	Generalised faecal peritonitis	Faecal spillage with open communication between bowel lumen and peritoneal cavity through diverticular lesion

Table 1. Modified Hinchey classification based on a system proposed by Wasvary et al¹, and corresponding CT findings proposed by Kim et al².

Results

- Acute diverticulitis was diagnosed in 107 CT scans in the non-pandemic period and 52 CT scans in the acute pandemic period, representing an overall decrease of 51.4% during the COVID-19 pandemic.
- Mean age of presentation did not change between non-pandemic and acute pandemic periods ($p=0.762$).
- The proportion of patients requiring emergency surgical management was significantly higher during the acute pandemic period ($p=0.04$).
- Blood results at presentation for CRP, white cell count and lactate were not significantly altered during the pandemic period.

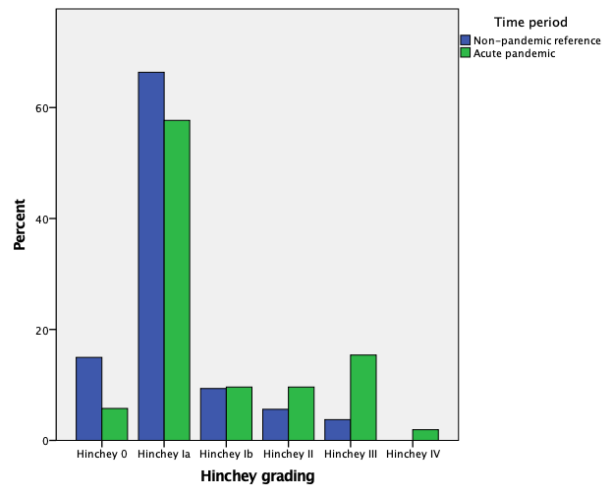


Figure 1. Proportions of diverticulitis grades (%) by time period

- The proportions of Hinchey 0 and Ia were lower in the acute pandemic period.
- The proportions of Hinchey Ib, II, III and IV were greater in the acute pandemic period.

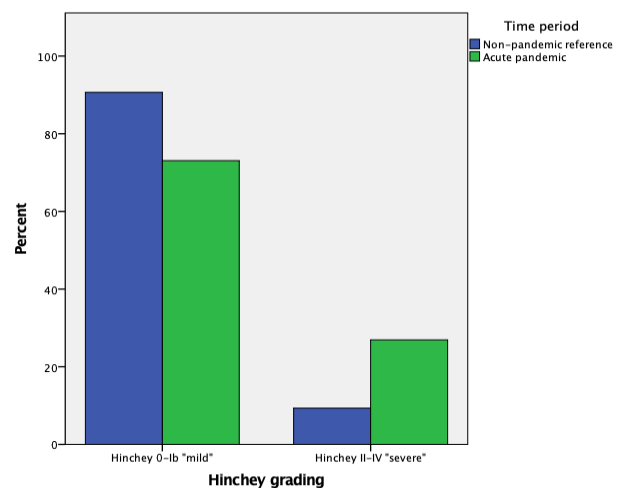


Figure 2. Proportion of "mild" diverticulitis (Hinchey 0-Ib) and "severe" diverticulitis (Hinchey II to IV) between the non-pandemic and acute pandemic periods

- When Hinchey grades are dichotomised as in Fig 2. the difference is statistically significant ($p=0.004$).

Discussion

- Our findings support early surgical and radiological input for patients presenting with symptoms of acute diverticulitis.
- Specialist surgical teams must remain available during any future wave of COVID-19 or other pandemic.