

MULTIDETECTOR COMPUTED TOMOGRAPHY IN ASSESSING ILEOCECAL VALVE CONTINENCE UPON SEVERITY OF LARGE BOWEL OBSTRUCTION DUE TO COLONIC CANCER

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Introduction

Colorectal carcinomas are the most common cause of large bowel obstruction. Approximately 8% to 30% of colorectal cancer patients have an obstruction. Perforation is the ultimate risk of obstructive colonic cancer, maybe local or diastatic secondary to the colonic distension. Evaluation of ileocecal valve condition is of clinical significance as incompetent ileocecal valve allows decompression of intestinal contents to the small bowel while maintenance of the continence mechanism produces a condition close to closed loop obstruction; with increased risk of large bowel perforation. Computed tomography (CT) is the reference exam for obstructive colonic cancer, providing both positive and severity diagnoses and has a strong impact on management.

Aim of the work

The aim of current study was to evaluate the role of MDCT in assessing the impact of ileocecal valve continence upon the severity of large bowel obstruction due to colonic cancer.

Patients and Methods

PATIENTS: The study included fifty three adult patients who presented to the emergency department of Alexandria Main University Hospital with symptoms and signs of large bowel obstruction and MDCT imaging revealed large bowel obstruction due to colon cancer.

METHODS:

- 1- Full history taking
- 2- Full clinical examination
- 3- Laboratory investigations
- 4-MDCT; pre and post contrast examination.

Imaging analysis:

- Patients had been divided in two groups according to the condition of ileocecal valve:
- An incompetent ileocecal valve was defined by colonic dilatation of more than 6 cm and the distal ileal bowel loops measuring 25 mm or more.

-Continent ileocecal valve was defined by the colon was 6 cm and the cecum was 8–9 cm and the distal ileal bowel loop was empty (provided there was no perforation).

Imaging findings (CT signs of severity) used as a variable were taken from the literature and analysed for each patient as follows:

- Cecal diameter; measured at its widest point.
- Defects in the bowel wall.
- Absence of contrast enhancement of the large bowel wall.
- Intestinal pneumatosis.
- Free pneumoperitoneum.
- Abscess.
- Ascites.

Results

Analysis of the cecal diameter:

After exclusion of the cases with free pneumoperitoneum (as indicator of unchecked perforation), statistical significance difference was found between the mean cecal diameter in both groups. This means that cases with a competent cecal valve are at higher risk for perforation due to higher cecal diameter.

Table 1: Comparison between the two studied groups according to cecal diameter with exclusion of the cases of the free pneumoperitoneum (which was considered as sign of non-localized perforation):

Cecal diameter	Competent ileocecal (n=9)	Incompetent ileocecal (n=40)	P	Total (n=49)
Min. – Max.	7.30 – 12.50	3.80 – 11.30	0.004*	3.80 – 12.50
Mean ± SD.	10.21 ± 1.93	8.32 ± 1.66		8.66 ± 1.85
Median (IQR)	11.0 (8.50–11.50)	8.30 (7.30–9.25)		8.50 (7.30–9.50)

Table 2: Comparison between the two studied groups according to the different parameters:

	Competent ileocecal (n=13)		Incompetent ileocecal (n=40)		FE _p	Total (n=53)	
	No.	%	No.	%		No.	%
Pneumatosis intestinalis	3	5.7	2	3.7	0.088	5	9.4
Free pneumoperitoneum	4	7.5	0	0.0	0.002*	4	7.5
Defect on the bowel wall	4	7.5	3	5.7	0.053	7	13.2
Abscess formation	4	7.5	4	7.5	0.090	8	15.1
Loss of enhancement	(n=11)		(n=40)		0.114	(n=51)	
	2	18.2	1	2.5		3	5.7

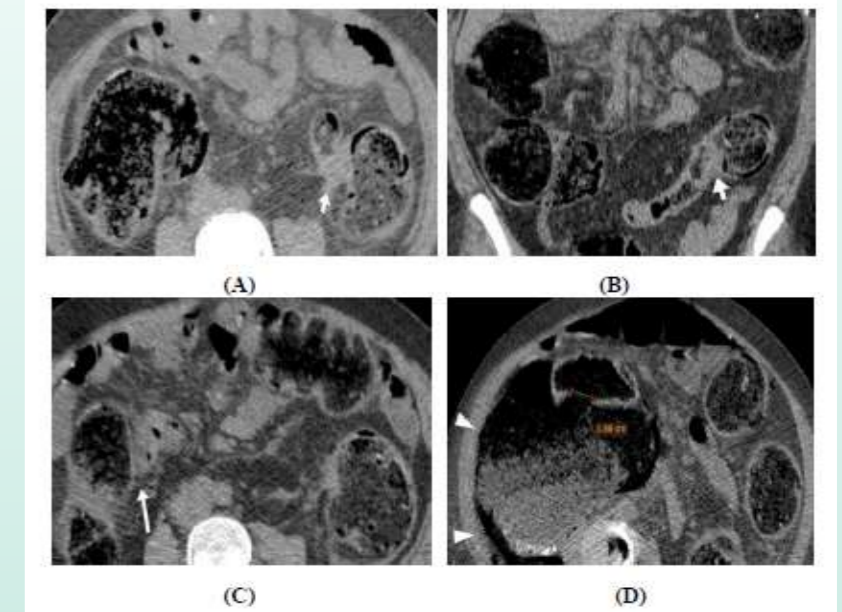


Figure: 65-year-old female patient presented with abdominal pain (A) Axial and (B) coronal NCCT images showed a concentric mural thickening of the sigmoid (short arrows) with proximal large bowel dilatation. (C) Axial image of the ileocecal region; the ileocecal valve was considered competent. (D). An axial image showed a mural defect at the cecum with a related sizable abscess (arrowheads).

Conclusion

- Patients with a continent ileocecal valve are at a higher risk of diastatic cecal perforation due to higher cecal diameter.
- Diastatic perforation has a high mortality rate due to the high possibility of faecal peritonitis and septic shock.
- Continent ileocecal valve can be considered as a risk factor for deterioration of a patient's clinical condition.