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Mahmoud Mustafa Abdlmonem Mustafa

Radio diagnosis department, Faculty of Medicine, Al-Azhar University, Egypt, midoradio6000@gmail.com

Mohamed Salah EL-din Abd EL-baky Mustafa

Radio diagnosis department, Faculty of Medicine, Al-Azhar University, Egypt

Ahmed Abd-Elfattah Mahmoud Abou-Rashed

Radio diagnosis department, Faculty of Medicine, Al-Azhar University, Egypt

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CASE SERIES

Evaluation of Early Gastric Cancer at Multidetector CT with Multiplanar Reformation and Virtual Endoscopy

Ahmed Abd-Elfattah Mahmoud Abou-Rash*,
Mohamed Salah El-Din Abd El-Baky Mustafa, Mahmoud Mustafa Abdlmonem Mustafa

Department of Radiodiagnosis, Faculty of Medicine, Al-Azhar University, Cairo, Egypt

Abstract

Background: The fourth most common cancer in the world, stomach cancer, is typically treated surgically. The 5-year survival rate for patients with advanced gastric cancer (AGC) ranges from 7 to 27%.

Aim and objectives: to evaluate the use of multi-detector CT (MDCT) for the identification, localization, and assessment of morphologic features of early gastric cancer using MPR and virtual endoscopy.

Subjects and methods: The study included fifty (50) patients (30 men and 20 women) at a referral Department of Diagnostic and Interventional Radiology, Al-Azhar University Hospitals in Cairo, between August 2020 and April 2022.

Results: The sensitivity of T1 was 81.8%, specificity of 96.6%, and total accuracy of 89.2%, and the sensitivity of T2 was 60.0%, specificity of 90.2%, and total accuracy of 75.1%, and the sensitivity of T3 was 66.7%, specificity of 93.8%, and total accuracy of 80.2%, and the sensitivity of T4 was 77.8%, specificity of 99.2%, and total accuracy of 88.5%. T1 was the most sensitive and T4 was the most specific.

Conclusion: Faster, easier, and more accurate stomach imaging has been made possible by CT 3D imaging software with several detectors and more reasonably priced data storage. The constraints of two-dimensional axial CT are overcome by multi-detector CT with MPR, and virtual endoscopy offers images that are comparable to traditional endoscopic imaging for the assessment of EGC. For the development of successful therapies, such as endoscopic mucosal resection or stomach resection, the precise preoperative staging of EGC and the early diagnosis of the illness are necessary.

Keywords: Endoscopy, CT, Multiplanar reconstruction, Early gastric cancer

1. Introduction

The fourth most common cancer in the world, stomach cancer, is typically treated surgically. The 5-year survival rate for patients with advanced gastric cancer (AGC) ranges from 7 to 27%, while the rate for those with early gastric cancer (EGC) ranges from 85 to 100%.¹ (see [Tables 1–4](#), [Figs. 1–3](#))

Stomach cancer, which was formerly the second most prevalent cancer in the world, is now ranked fourth, behind malignancies of the lung, breast, colon, and rectum. However, stomach cancer

continues to be the third most prevalent cancer-related cause of death. Regarding incidence and fatalities from cancer, Egypt ranks 12th. About 65% of patients have locally progressed or metastatic disease at presentation, with 5-year survival rates of 30% and 5%, respectively.²

According to the World Health Organization, 723,000 people died from stomach cancer in 2017.³

In Western countries, treating stomach cancer is still difficult, in part because most patients already have advanced disease. The third most common cancer-related death worldwide is gastric cancer.⁴

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* Corresponding author at: Department of Radiodiagnosis, Faculty of Medicine, Al-Azhar University, Cairo, 11731, Egypt.
E-mail address: midoradio6000@gmail.com (A.A.-E. Mahmoud Abou-Rash).

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Table 1. Distribution of the studied cases according to Duration from MDCT to treatment and Duration from endoscopy to treatment.

| | No. = 50 | |
|--------------------------------------|----------------|----------|
| | Mean ± SD | Range |
| Duration from MDCT to treatment | 392.42 ± 56.69 | 38.2–462 |
| Duration from endoscopy to treatment | 29.47 ± 10.13 | 8.3–44.3 |

Table 2. Distribution of the studied cases according to Tumor size and Tumor location.

| N = 50 | |
|------------------------|---------------|
| Mean ± SD | 38.37 ± 15.98 |
| Tumor size | |
| Range | 10.5–65.4 |
| Tumor location [n (%)] | |
| Middle third | 25 (50.0) |
| Lower third | 15 (30.0) |
| Upper third | 8 (16.0) |
| Whole stomach | 2 (4.0) |

Table 3. Distribution of the studied cases according to Pathologic Stage and MDCT.

| | | No. | % |
|------------------|----|-----|-------|
| Pathologic Stage | T1 | 33 | 66.0% |
| | T2 | 5 | 10.0% |
| | T3 | 3 | 6.0% |
| | T4 | 9 | 18.0% |
| | T1 | 27 | 54.0% |
| MDCT | T2 | 8 | 16.0% |
| | T3 | 5 | 10.0% |
| | T4 | 10 | 20.0% |

The fifth most common cancer in the US right now is stomach cancer.⁵

Mucosa, submucosa, muscularis mucosa, subserosa, and serosa are the five layers that make up the stomach. The outlook is worse the deeper the malignancy spreads. Additionally, the stomach is connected to a vast lymphatic system. A worse prognosis exists for cancer that has progressed to the lymphatics in the area.⁶

There are different types of gastric cancers: gastric adenocarcinoma, gastrointestinal stromal tumor, gastrointestinal leiomyosarcoma, and gastrointestinal lymphoma. Adenocarcinoma is the most common type.⁷

Table 4. ROC curve Between Pathologic Stage and MDCT.

| MDCT | Pathologic Stage | | | | Diagnostic Performance | | |
|------|------------------|--------------|--------------|--------------|------------------------|-----------------|-----------------|
| | T1 (no. = 33) | T2 (no. = 5) | T3 (no. = 3) | T4 (no. = 9) | Accuracy (%) | Sensitivity (%) | Specificity (%) |
| T1 | 27 (81.8%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 89.2% | 81.8% | 96.6% |
| T2 | 4 (12.1%) | 3 (60.0%) | 0 (0.0%) | 1 (11.1%) | 75.1% | 60.0% | 90.2% |
| T3 | 1 (3.0%) | 1 (20.0%) | 2 (66.7%) | 1 (11.1%) | 80.2% | 66.7% | 93.8% |
| T4 | 1 (3.0%) | 1 (20.0%) | 1 (33.3%) | 7 (77.8%) | 88.5% | 77.8% | 99.2% |

The diagnosis of tiny lesions early in the course of the disease is made possible by the diagnostic improvements in endoscopy and double-contrast barium exams nowadays.

However, neither modality could determine the degree of tumour invasion or the existence or absence of metastases. Patients with esophageal and gastric cancer are often diagnosed and staged using computed tomography in a routine clinical setting.⁸

Computed tomography using a multidetector row, especially those devices, provides quick submillimeter section capture, The method's local staging accuracy is increased by isotropic multiplanar reconstruction and post-processing alternatives like virtual endoscopy.⁹ Additionally, lymph nodes can be evaluated using computed tomography.¹⁰

MSCT can improve the diagnosis and staging of both early and advanced gastric neoplasms and offer useful supplementary information. High diagnostic fidelity is provided by MSCT in the detection of cancers, the staging of lymph node metastases, and the provision of very trustworthy information regarding secondary malignancies. MSCT is a useful detecting tool, staging, surveillance, and posttreatment evaluation of gastric neoplasm.⁷

According to the most recent international consensus, the most accurate staging method is multidetector-row computed tomography, which exhibits accuracy that is on par T-staging can be accomplished with or better than endoscopic ultrasonography, while N- and M-staging can be accomplished with or better than other techniques. This consensus also supported the need for preoperative TNM staging.¹¹ In order to choose between palliative or radical surgical treatment, it is essential to distinguish between benign and malignant stomach neoplasms and to establish the stage and gastric dissemination of gastric cancer. MDCT is also used to track a patient's reaction to therapy. Furthermore, evaluation and estimation of tumour invasion depth following multi-planer reconstruction have demonstrated that it is a crucial prognostic factor in patients with gastric cancer (MPR).¹²

A potential technique for the identification, the three methods of localization, Virtual endoscopy,

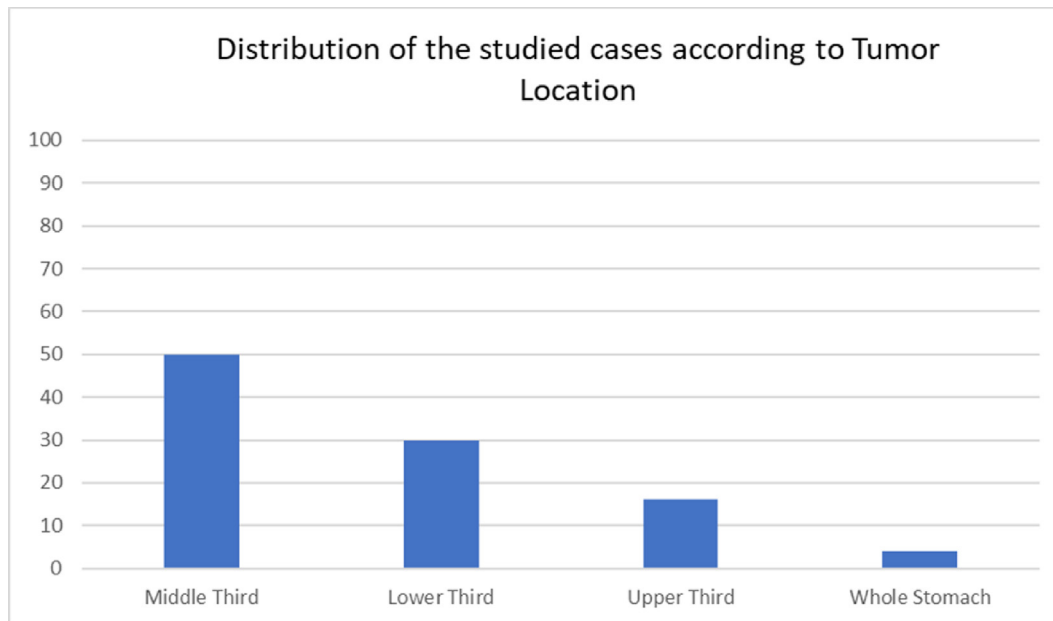


Fig. 1. Percentage Distribution of the studied cases according to Tumor location.

and multidetector CT with MPR are used to evaluate the morphologic traits of early stomach cancer. Regardless of the presence of lymph nodes or distant metastases, early gastric cancer (EGC) is a kind of carcinoma that can develop in the stomach. exclusively infiltrates the mucosa and submucosa of the stomach. Recent developments have made multidetector computed tomography (CT) with multiplanar reformation an effective technique for determining the extent of gastric cancer in the perigastric area and the invasion of the stomach wall (MPR). The assessment of the stomach wall's intraluminal and extraluminal processes, as well as the examination of further-off locations like the

paraortic lymph nodes and other abdominal organs, are all facilitated by MPR pictures. Virtual endoscopy used following air distention of the stomach can help in determining the amount of EGC and the aspects of the gastric endoluminal morphology. Virtual endoscopy also aids in distinguishing submucosal lesions from subtle mucosal changes, much like traditional endoscopy does. Because retrospective image reformation is an option, there are no "blind spots" in virtual endoscopy, which has a wider field of vision than traditional endoscopy for displaying aberrant endoluminal lesions," which is helpful for preoperative mapping. With the aid of virtual endoscopy, a powerful,

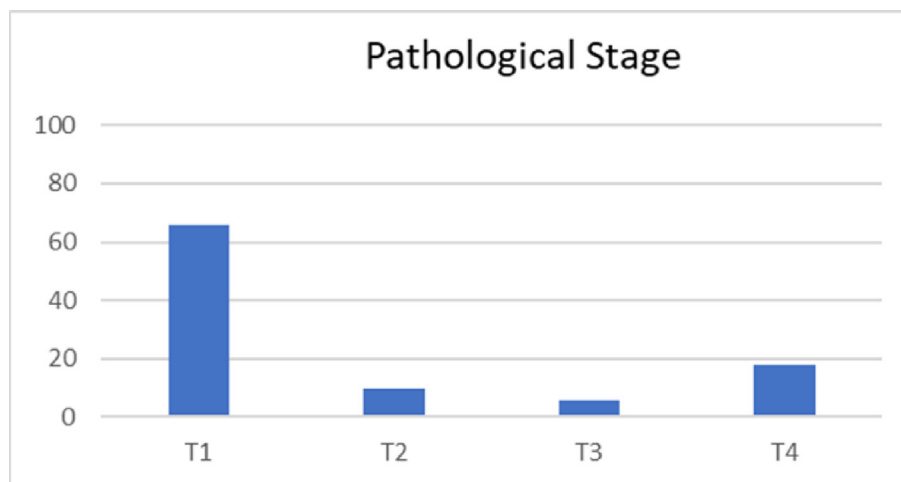


Fig. 2. Percentage Distribution of the studied cases according to pathological stage.

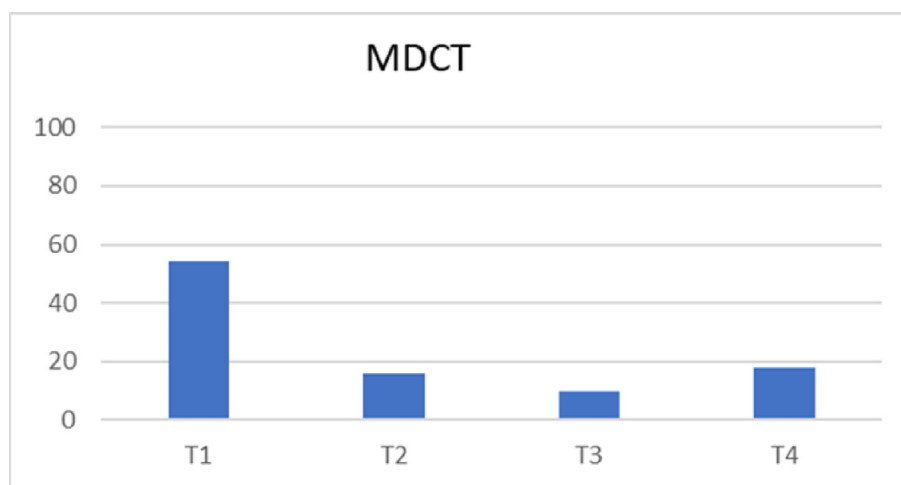


Fig. 3. Percentage Distribution of the studied cases according to pathological stage.

noninvasive approach, multidetector CT with MPR, and early detection and perfect preoperative staging of EGC can be achieved.

To accurately gauge the thickness of the gastric wall and distinguish the stomach lumen and walls from nearby structures, the gastric study requires an acceptable distension, which can be achieved by utilising endoluminal contrast agents. The study's objective was to assess the effectiveness of using multi detector CT (MDCT) for the detection, localization, and analysis of morphologic characteristics of early stomach cancer using MPR and virtual endoscopy (EGC).

2. Patients and methods

A referral Department of Diagnostic and Interventional Radiology's MDCT with a stomach procedure was performed on fifty (50) participants in the study. Ages of the patients ranged from 33 to 85, with a mean of 66.3 years. and complained of symptoms of gastric cancer, Al-Azhar University Hospitals in Cairo, between August 2020 and April 2022. The fifty (50) patients referred to the healing facility utilizing 160-MDCT (Toshiba Aquilion), The surgical material was always subjected to a standard histological analysis, which included determining the TNM classification, the depth of the lesion within the layers of the stomach, the lymph node involvement, and the degree of tumour penetration into the perigastric peritoneum wall. The comparison between the final pathological stage and the T and N staging by MDCT utilising a stomach protocol was done to assess the procedure's sensitivity, specificity, and accuracy.

Additionally, formal consent from the subject that has been fully informed was obtained. All patient data's privacy and confidentiality were ensured. All

information provided was watched over and utilised strictly for research.

Ethical consideration: The regional institutional research and ethical committee accepted the study protocol. Patients who were involved in the study provided written informed consent. All the steps of this study were explained to all participants and each one has the right to leave at any time without any reasons.

Inclusion criteria: Patients with gastric cancer, known cases of stomach mass on follow-up following surgery, chemotherapy (CTH), or radiotherapy, and both sexes (RTH), patients with symptoms and patients accidentally discovered during examination.

2.1. Methods

All the participants were subjected to the following: Full history taking (age, sex, family history, medical history), comprehensive clinical examination and laboratory tests: whole blood count, liver, kidney, and other organ functioning.

Patient preparation and position: Prior to the CT scan, patients were required to fast for at least 6–8 h. Before administering the IV contrast, each time, serum creatinine was checked to make sure it was within acceptable limits. MDCT was performed after the patient was given one packet of effervescent granules and a small amount of water by mouth to enlarge their stomachs. Patients received either three quarters of a litre of plain water (1 cup every 1/4 h) or 500 ml of juice with 10 cm of gastrografine added 15 min before the trial. Just before the scan, another 250 mL is given. Patients were in the supine position until further prone scans were needed to rule out the presence

of an antral or pyloric lesion. A routine histological study of the surgical specimen was always performed, which included identifying the TNM classification, the depth of the lesion within the layers of the stomach wall, the lymph node involvement, and the degree of invasion of the tumour into the perigastric peritoneum. To evaluate the sensitivity, specificity, and accuracy of the method, the end pathological stage and the T and N staging by MDCT were compared using a stomach operation. The CT scans were carried out on a Toshiba Aquilion 160-channel multi-detector scanner using an axial plane volumetric acquisition and 1.25 mm collimation. A stomach operation might make it possible to assess the gastric wall more precisely. A 10-min intravenous injection of an antispasmodic medication, an 8-h fast, and the consumption of two effervescent salt packets dissolved in 10 mL of water soon before picture taking were all prerequisites for using Patients and Methods. Following the acquisition of a pre-contrast image of the upper abdomen, a dynamic study was carried out using the following parameters: intravenous injection of nonionic iodinated contrast at a volume of 85–100 mL (depending on the patient's weight) and a flow velocity of 2.5–3.0 mL/s; imaging of the upper abdomen in the arterial phase; imaging of the upper abdomen and pelvis in the portal phase; and acquisition of imaging of the upper abdomen and pelvis. In order to capture the lesion's location in the stomach during the equilibrium period, photos should be taken

with the subject supine (dorsal, right oblique, or left oblique).

CT Gastric Malignancy features.

Gastric adenocarcinoma a concentrated thickening of the wall widely infiltrating (linitis plastica) a hefty or inflamed mass illness that is intraluminal, exophytic, or mixed excessive perigastric fat lymphadenopathy localised Along the peritoneal ligaments, seeding metastases stomach lymphoma.

Wall Sickening of the wall that is greater than 1 cm wide and diffuse in nature participation of the majority of the stomach circumferentially stomach segmental infiltration uniform wall thickening while preserving the rugae on top localised polypoid lesions that are infected or have ulcers lymph nodes are present on either side of the mesenteric vessels (the sandwich sign).

Large, heterogeneous tumours that protrude past the stomach wall are known as malignant GISTs.

Central liquefaction and necrosis massive ulcers

Calcifications

*GIST = gastrointestinal stromal tumor.

2.2. Statistical analysis

The data was gathered, examined, coded, and entered using IBM SPSS version 20—Statistical Package for Social Science. When a distribution was discovered to be parametric, while qualitative data were presented as percentages and figures, quantitative data were presented as means, standard deviations, and ranges.

Techniques for Examining the Stomach with CT

| Phase of Examination | Aspect of Technique | Parameters |
|-------------------------------------|--|---|
| Patient preparation and positioning | Fasting | No solid food for at least 6 h |
| | Oral contrast material | 1000–1500 mL of water or a flavored methylcellulose preparation |
| | Hypotonia | 20 mg of intravenous scopolamine |
| | Patient position | Prone if there is a known lesion in the antrum or pyloric wall; supine for all other lesions |
| Scanning | Section collimation | 0.75–1.25 mm (four-, eight-, and 16-row scanners) |
| | Pitch | >1.0 (eg, 6:4 on most four-row scanners) |
| | Volume CT dose index | 15 mGy (10–30 mGy according to patient size) |
| | Reconstruction section thickness | 1.0–1.5 mm for the secondary raw data set for volumetric reconstruction |
| Image processing | Reconstruction increment | 0.7 mm |
| | MPR* imaging planes | Axial, coronal, and sagittal |
| | MPR section thickness | 4 mm (3–6 mm according to image noise) |
| Contrast material injection | Volume of contrast material | 120 mL (or 1.5 mL/kg of body weight) |
| | Volume of saline solution for flushing | 60 mL |
| | Flow rate | 4 mL/s (or 30-sec duration of contrast material injection) |
| | Scanning delay from start of injection | Arterial phase: 30 s (or 10 s after aortic arrival for bolus tracking) for tumor staging. Portal venous phase: 60 s (or 40 s after aortic arrival for bolus tracking) for evaluation of the stomach |

*MPR = multiplanar reformation. Interactive MPR is optional (for cases with equivocal results and difficult cases).

The acceptable margin of error was set at 5%, while the confidence interval was set at 95%. Therefore, the following p-value was considered significant: Non-significant if $P > 0.05$ (NS). Significant at $P 0.05$ (S).

3. Results

Receiver operating characteristic curve (ROC) shows that the sensitivity of T1 was 81.8%, specificity of 96.6%, and total accuracy of 89.2%, and the sensitivity of T2 was 60.0%, specificity of 90.2%, and total accuracy of 75.1%, and the sensitivity of T3 was 66.7%, specificity of 93.8%, and total accuracy of 80.2%, and the sensitivity of T4 was 77.8%, specificity of 99.2%, and total accuracy of 88.5%.

3.1. Case (1)

A 28 - years old male patient presented with an irrelevant history of the stomach.

MDCT Findings (Fig. 4A–E): Post contrast study of the stomach showing the normal CT appearance of the stomach.

3.2. Case (2)

A 72 year old female patient presented with loss of appetite, nausea, vomiting, abdominal pain, colics and rapid weight loss 3 months ago.

MDCT Findings (Fig. 5A–E): Post contrast venous phase axial, sagittal, and coronal images revealed circumferential wall thickening of the stomach with large heterogeneously enhanced fungating mass (long arrow) seen at the lesser curvature measured about (10 × 8.5 cm), the mass extends to the left hepatic lobe and seen inseparable from the pancreatic neck, another smaller mass with the same density is seen at the antrum and pyloric region measures about (6 × 3cm). Multiple enlarged lymph nodes (short arrow) (gastrohepatic, portahepatic, peripancreatic, pericaval, para-aortic and mesenteric) are detected. Associated small enhancing hypodense hepatic metastatic nodule seen at left hepatic lobe measured about (3 × 1 cm).

MDCT Diagnosis: Gastric carcinoma stage IV.

Histopathological Diagnosis: Poorly differentiated adenocarcinoma stage IV.

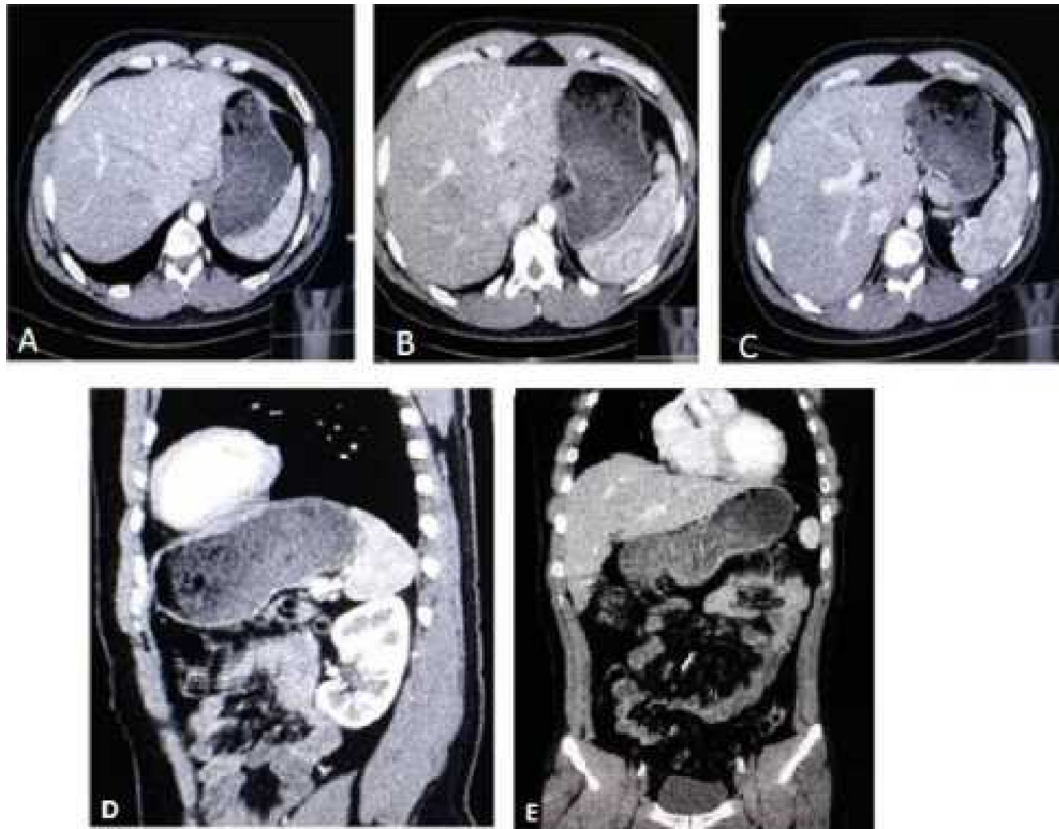


Fig. 4. A, B, C) Axial views of the stomach at different levels D) sagittal reformatted Image E) Coronal reformatted Image.

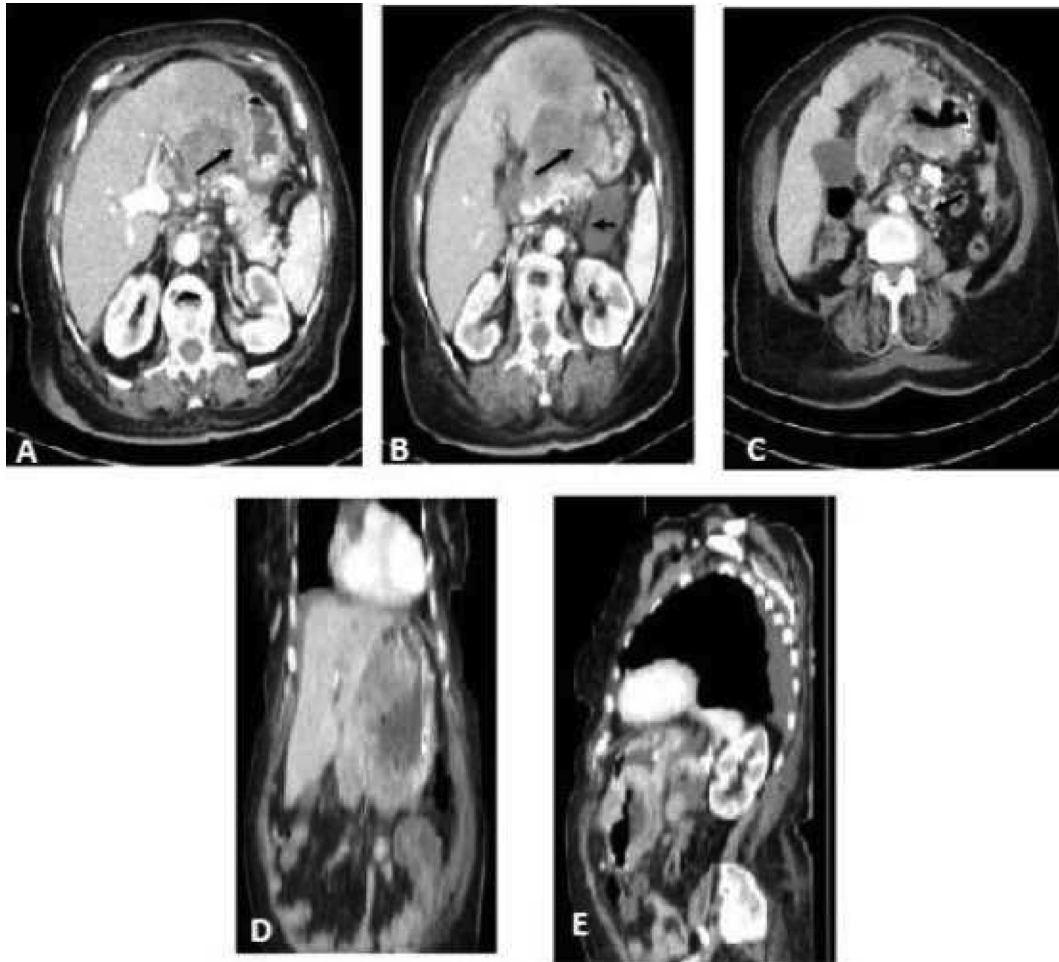


Fig. 5. A, B and C) Axial views of the stomach at different levels D) Coronal reformatted Image E) Sagittal reformatted Image.

3.3. Case (3)

A 66-years-old female patient presented with marked weight loss and abdominal pain for 6 months.

MDCT Findings (Fig. 6A–D): Post contrast axial, sagittal and coronal CT scans of the abdomen and pelvis revealed diffuse irregular mural thickening of the stomach more at the fundus and body (large arrow) reaching about 3 cm in its maximal thickness with loss of fat planes between the stomach and pancreas. With enlarged para-aortic LN (black arrow). Mild ascites.

MDCT Diagnosis: Gastric carcinoma stage III.

Histopathological Diagnosis: Round cell malignancy grade IV.

3.4. Case (4)

A 58-years-old female patient presented with nausea, epigastric pain and dysphagia for 2 months.

MDCT Findings (Fig. 7A–D): Post contrast axial, sagittal and coronal CT scans of the abdomen reveals diffuse mural thickening of the stomach (long arrow) reaching about 1.5 cm in its maximal thickness. No evidence of extragastric spread, No associated lymphadenopathies or distant metastasis could be noted.

MDCT Diagnosis.

Gastric carcinoma stage I.

Histopathological Diagnosis.

Moderately differentiated adenocarcinoma grade III.

3.5. Case (5)

A 63 years-old male patient presented with dyspepsia and upper abdominal discomfort for 6 months.

MDCT Findings (Fig. 8A–D): Post contrast axial, sagittal and coronal CT scans of the abdomen and pelvis revealed focal gastric mural thickening

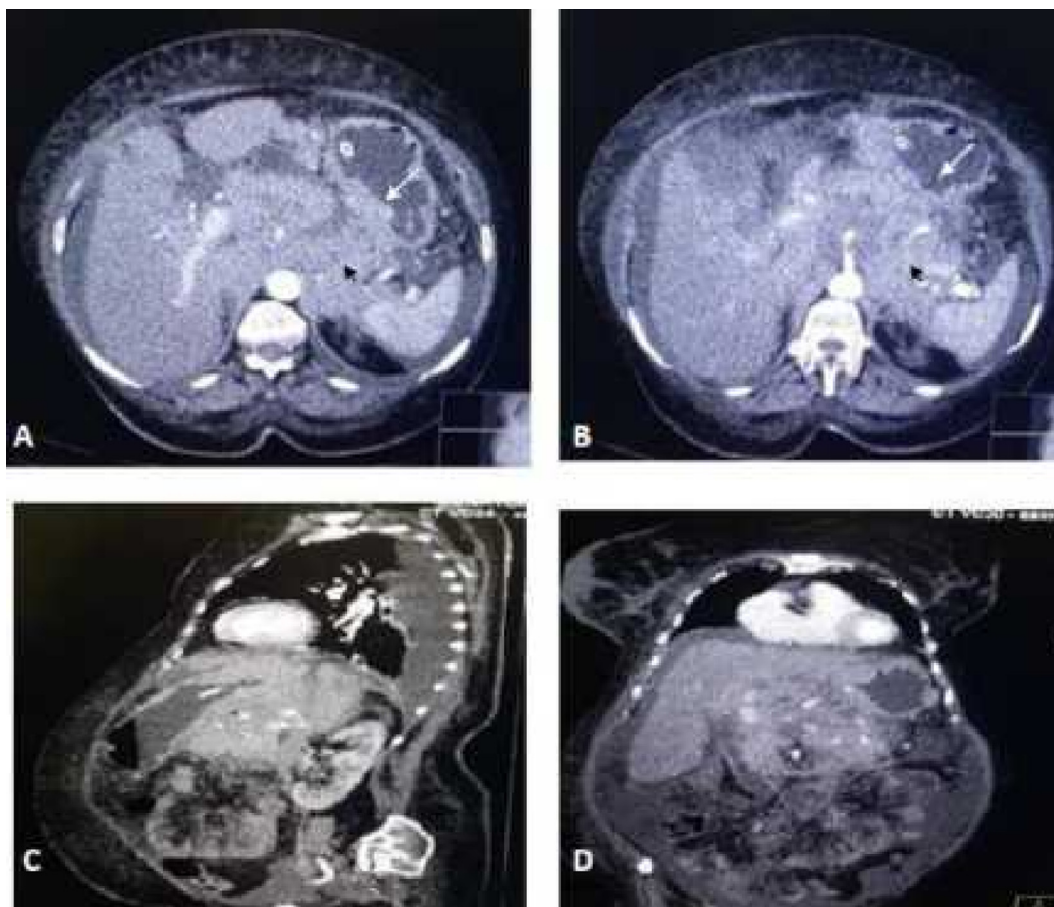


Fig. 6. A and B) Axial views C) sagittal reformatted Image D) Coronalreformatted Image.

evident at the lesser curvature (short arrow) region reaching about 4 cm in its maximal dimensions with stranding of fat planes adjacent to it.

Left hepatic lobe cystic enhancing metastatic lesion (long arrow) measured about (5.5 × 3.5 cm) with mild to moderate amount of ascites.

MDCT Diagnosis.

Gastric carcinoma stage IV.

Histopathological Diagnosis:

Invasive gastric adenocarcinoma grade IV.

4. Discussion

According to previous reports, in comparison to two-dimensional (2D) CT imaging, three-dimensional (3D) CTG can increase the detection of EGC. By giving a view within the stomach lumen, the surface volume-rendering method used to create VE images simulates a conventional endoscope. Like single-contrast and double-contrast barium tests are the SSD and TTP images, can show the whole stomach as well as the precise site of a gastric lesion.¹³

Our study was a prospective study that was conducted on 50 patients who were complaining of symptoms of gastric cancer, when one packet of effervescent granules was given orally along with a modest amount of water to dilate the patient's stomach, MDCT was then carried out.

Our study showed that the mean age was 50.82 ± 13.87 with range 32–86 years, with high prevalence in males (76.0%) comparing to females (24.0%). that undergoes with Macdonald et al.¹⁴ who discovered that male patients with stomach cancer have a higher mortality rate than female ones. Our research demonstrates that one of the most trustworthy methods for the T staging of gastric cancer is virtual gastroscopy using MPR pictures. In the present study, endoscopic ultrasound and virtual gastroscopy using MPR images both exhibited comparable T staging accuracy. when it came to the diagnosis of invasion depth (82.2 percent vs. 83.7 percent; $p = 0.850$).¹⁵ The accuracy of T staging between CT and endoscopic ultrasonography has been

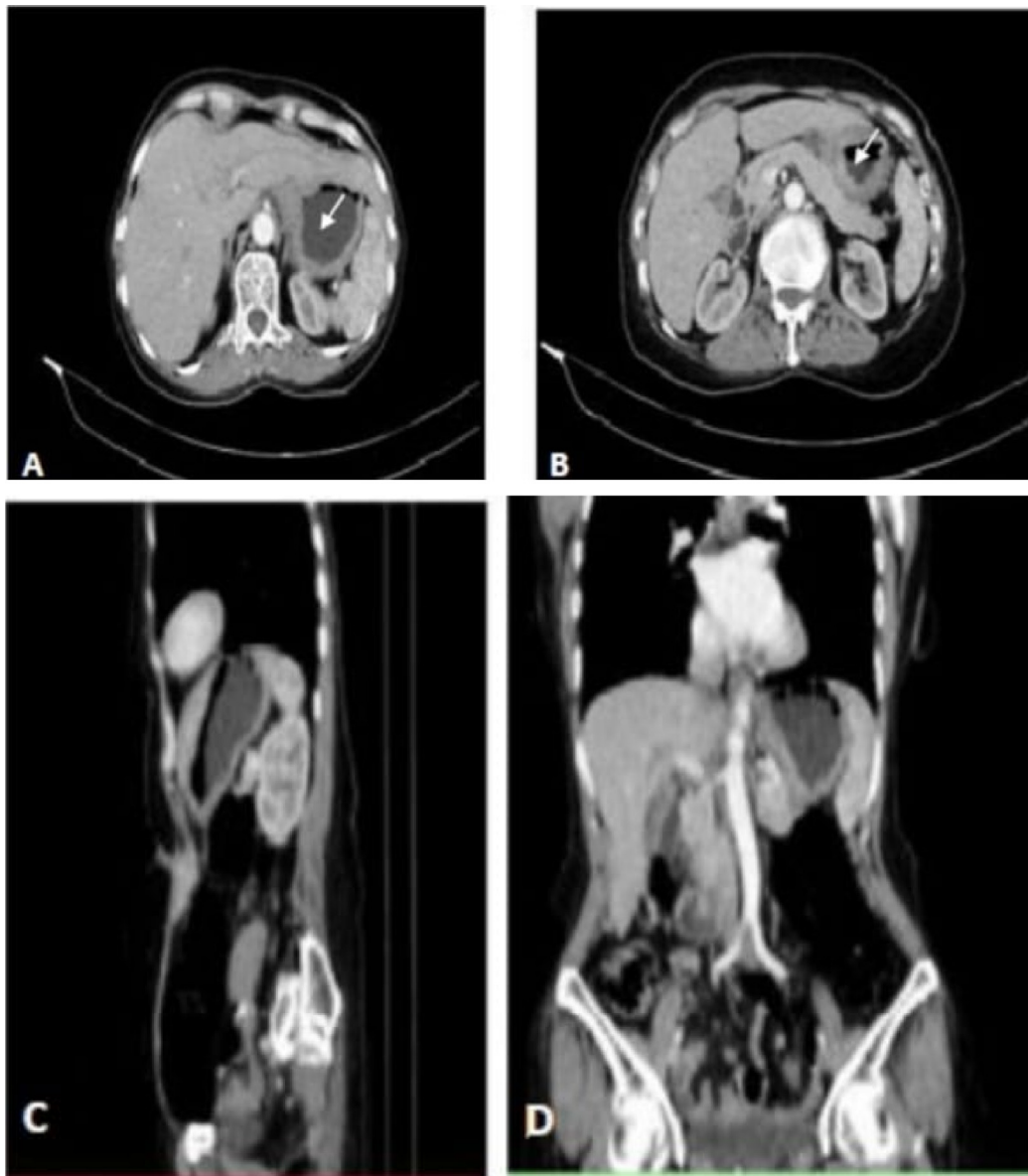


Fig. 7. A and B) Axial views C) sagittal reformatted Image D) Coronal reformatted Image.

examined in some earlier research. Previous research utilising helical CT revealed comparable T staging accuracies (76 percent for CT vs. 86 percent for endoscopic ultrasound), but additional research employing endoscopic ultrasound revealed noticeably better outcomes (42–44 percent vs 63–91 percent, respectively).¹⁶ A thorough analysis of gastric cancer imaging diagnosis revealed comparable T staging accuracy for MDCT and endoscopic ultrasound (77.1–88.9 percent vs 65–92.1 percent).¹⁷

Our study's findings agreed with those from these investigations. This demonstrates that MDCT's T staging performance is on par with endoscopic

ultrasound. Like our findings, according to a study, MDCT is advised for T1b lesions with extensive submucosal invasion, T2/3 lesions with perigastric infiltration and vascular and lymphatic congestion, and T4 tumours with little perigastric adipose tissue involvement.¹⁸

Lesions with and without ulcerative modifications did not significantly differ in terms of MDCT accuracy, even though Hwang et al.¹⁹ observed that ulcerative alterations considerably affected endoscopic ultrasound accuracy. These conclusions contradict the research's findings. MDCT is currently a key technique for the preoperative

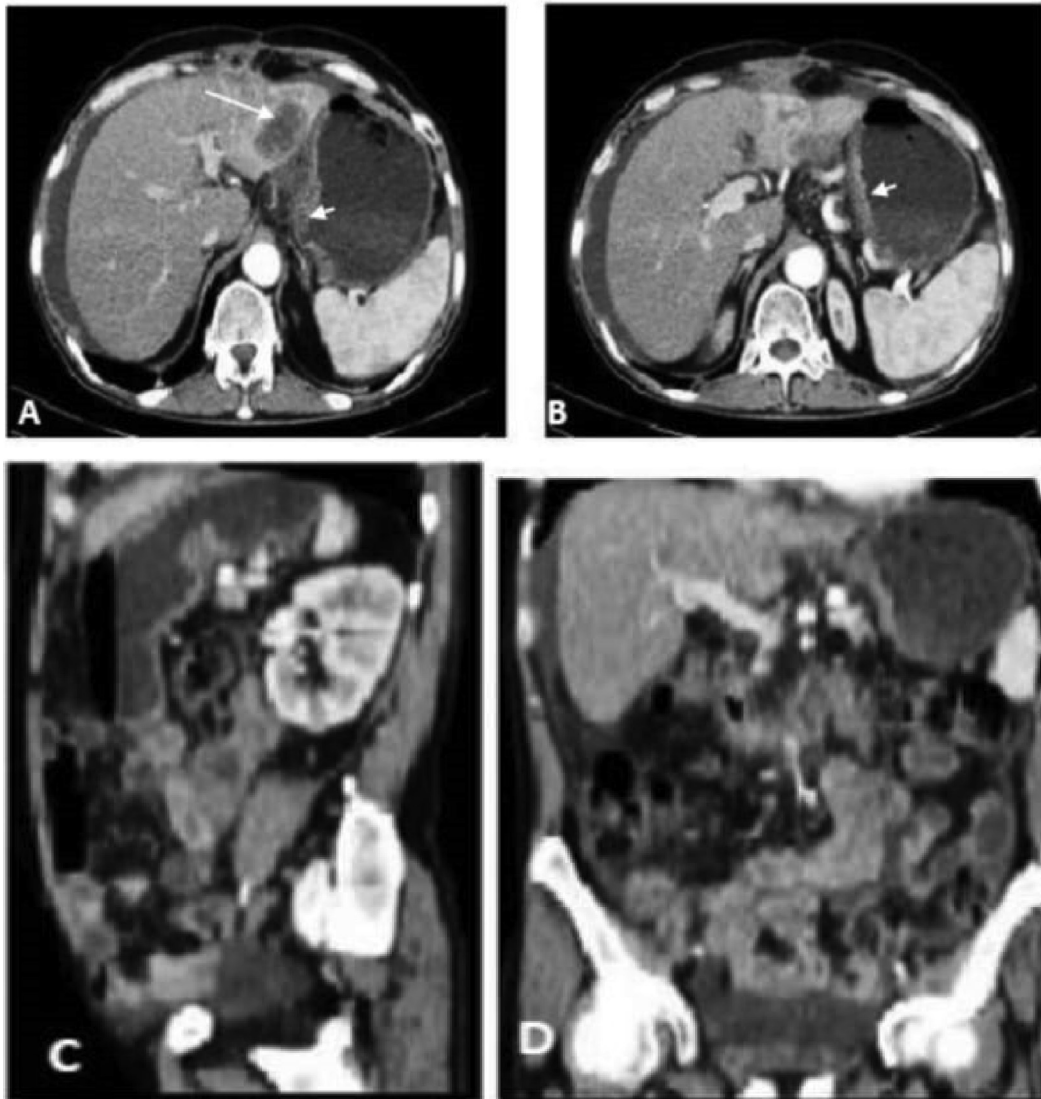


Fig. 8. A and B) Axial views C) sagittal reformatted Image D) Coronal reformatted Image.

staging of stomach cancer. Additionally, the MDCT performed similarly to endoscopic ultrasound in terms of T staging. In many lesions, the depth of invasion can be precisely assessed using simply virtual gastroscopy and MPR pictures. 2020 (Haren Varia) Because endoscopic ultrasound is the only technique that enables direct differentiation between T1a and T1b lesions These findings do not imply that endoscopic ultrasound will be replaced by other diagnostic methods soon. Instead, by conceptualising the stomach wall as having five levels, it enables assessment of the degree of invasion. On the other hand, despite being greater (20–56%) than in trials utilising a single-detector helical CT scanner, the percentage of early cancer identification by MDCT is still poor in terms of its

diagnostic capabilities. Additionally, the figures differ considerably in earlier studies.²⁰

Our findings and those of earlier study suggest that the stage of the disease at the time of diagnosis influences the prognosis and course of treatment for gastric carcinoma, and that the first difficulty for doctors to overcome is determining the size of the tumour. Additionally, multi-detector row CT with coupled water and air distension can be used to more precisely stage stomach cancer prior to surgery.²¹

Our findings were consistent with other research showing a substantial difference between T1a and T1b lesions in terms of the detection rate and depth of tumour invasion (15.9–62.8 percent for T1a vs 68.8–83.3 percent for T1b). in Gaillard (F2022)

On the basis of these findings, those authors came to the following conclusions: Early malignancies with lymph node metastasis that are not identifiable as original lesions are limited to T1a or T1b with sub mucosal sparse invasion, as opposed to T1b with sub mucosal large invasion or deeper. T1a cancer is more likely to develop early than T1b cancer if it is not visualised.¹⁸

Results from the current study are in line with those from other investigations (37.8% for T1a vs. 75.0% for T1b; $p < 0.001$). Fold convergence toward the tumour, an internal ulcer scar, or peptic ulceration are frequently present in the early stages of depression cancer. When under endoscopic inspection, these findings frequently result in the tumor's discovery. The year 2022 (Gaillard)

These results were more common in the current study's depressed T1a lesions, which were detected via virtual gastroscopy. Fold convergence in the tumor's orientation points to submucosal or deeper degrees of fibrosis. 2020 The Haren Varia It is challenging to visualise lesions using MDCT unless tumour expansion or fibrosis affects These findings and the substantial disparity in detection rates between T1a and T1b lesions indicate that, the sub-mucosal layer or deeper, even with virtual gastroscopy. In contrast, undetectable lesions are most likely T1a lesions without fibrosis. 2020 (Haren Varia)

In the current investigation, the histopathological findings served as the gold standard for documenting the MDCT's sensitivity in identifying and evaluating stomach tumours. With a specificity of between 93 and 97 percent and an accuracy of between 9 and 92.5 percent, thin-slice axial CT was found to be reliable for identifying all stages of gastric cancer. This study demonstrated a substantial link between pathology and CT staging. 2020 (Haren Varia) The current study shown that, in stage T1, MDCT has the maximum sensitivity (86.0 percent), but the lowest sensitivity in stages T2 and T3. This is consistent with the findings of Kumano et al.²² who found that MDCT has sensitivities between 68.8 and 96.2 percent for the diagnosis of stomach malignancies. According to our most recent data, the accuracy and sensitivity of T3 are 70% and 100%, respectively, while those of T4 are 70% and 44%. (Gaillard, F2022)

5. Conclusion

Faster, easier, and more accurate stomach imaging has been made possible by multi-detector CT 3D imaging software and more affordable data

storage capacity. The constraints of two-dimensional axial CT are overcome Virtual endoscopy and multi-for the evaluation of EGC, detector CT with MPR offers images that are comparable to traditional endoscopic imaging. The correct preoperative staging of EGC and the early detection of the disorder are prerequisites for the development of effective therapies, such as stomach removal or endoscopic mucosal excision. One promising noninvasive method for these Applications include virtual endoscopy and multi-detector CT with MPR.

Conflict of interest

No conflicts of interest.

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