

Virtual CT Gastroscopy versus Fiberoptic endoscopy in cases of Gastric Carcinoma

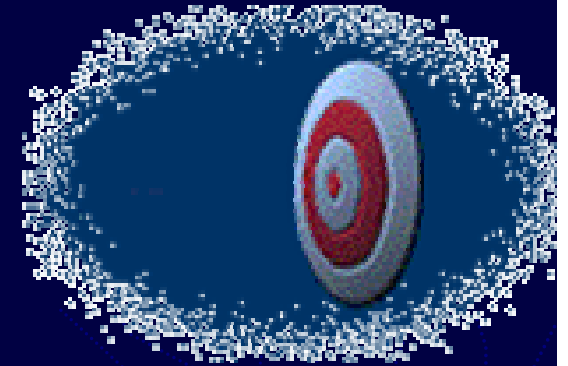
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AIM OF THE WORK



Evaluation of the role of CT based virtual gastroscopy in the diagnosis of gastric carcinoma and comparing its efficacy with that of fiberoptic endoscopy.

■ Accuracy for diagnosis of digestive tract diseases with CT has been highly improved with the introduction of spiral scanning and the multidirectional technologies.

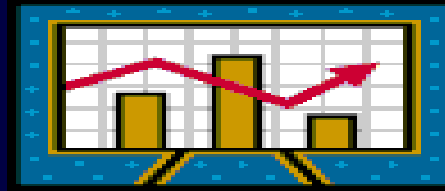
■ CT is able to demonstrate both the intramural and the extramural components of the disease.

PATIENTS AND METHODS:-

▶ Twenty six patients with the clinical assumption of gastric carcinoma were included in this study:

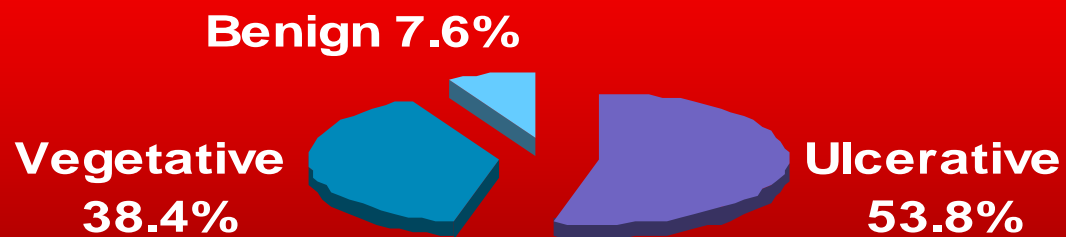
- Upper GI endoscopy were obtained in all patients for confirmation of the diagnosis.
- Post contrast enhanced spiral CT study after gastric distention and IM injection of muscle relaxant.
- A spiral CT volume zoom examination
(120/90 / 1mm / 1 mm / 8 mm /0.5 sec)
(Kv mAS/ slice- coll./ slice- width / feed- roat /rot. time)

RESULTS:-



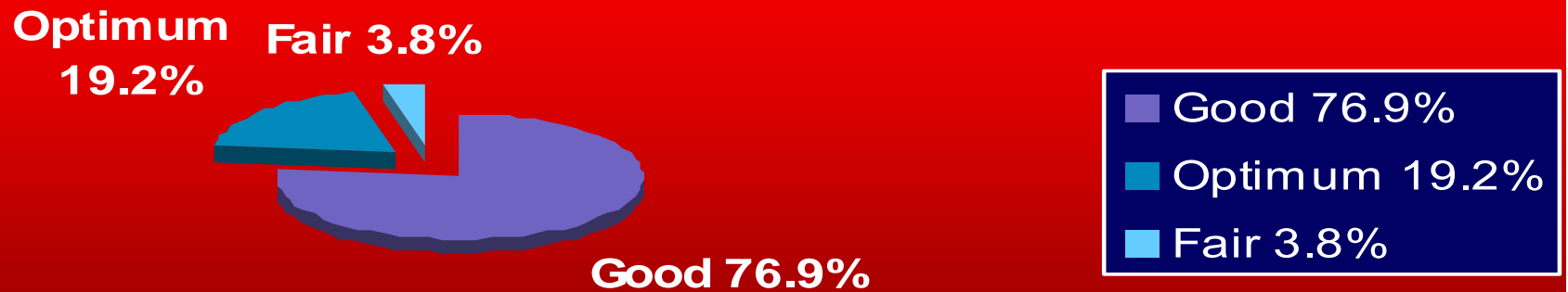
Incidence of different types of gastric lesions as diagnosed by histopathology:

Gross picture type	Number	%
Ulcerative	14	53.8
Vegetative	10	38.4
Benign	2	7.6



Virtual CT image Quality:

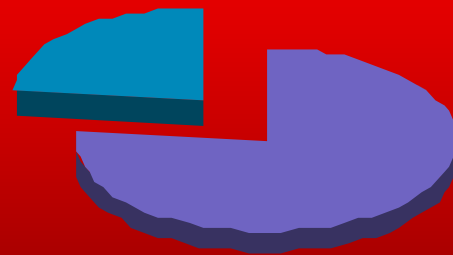
Score	Number	%
Good	20	76.9
Optimum	5	19.2
Fair	1	3.8



Concordance of virtual gastroscopy with fiberoptic endoscopy:

Concordance	20	77%
Discordance	6	23%

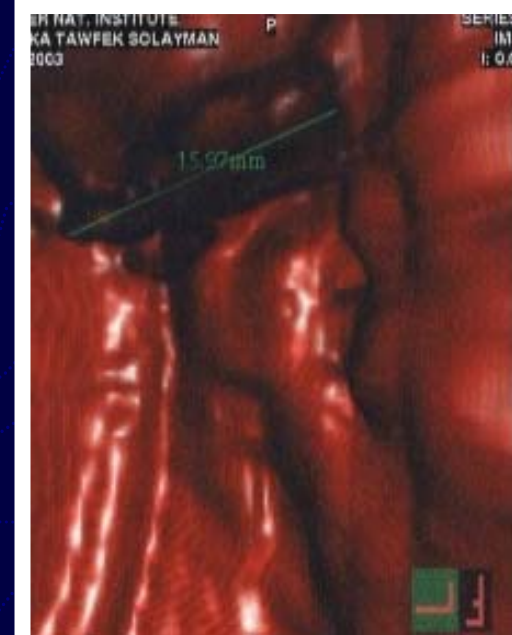
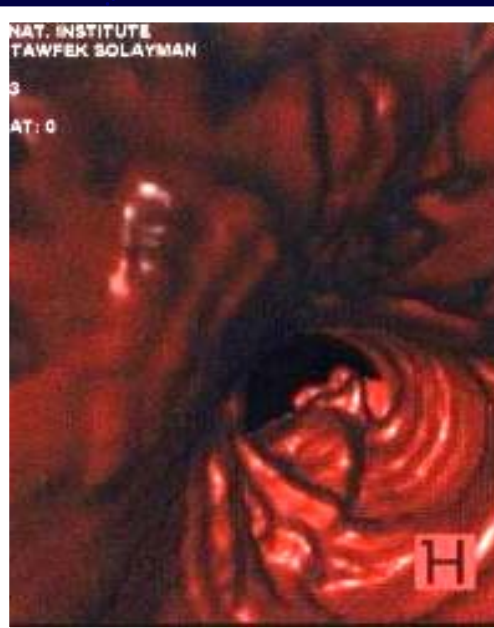
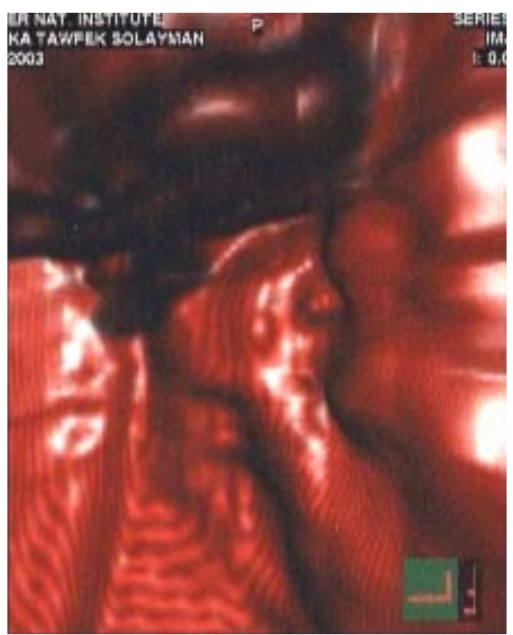
Discordance
23%



Concordance
77%

■ Concordance 77%
■ Discordance 23%

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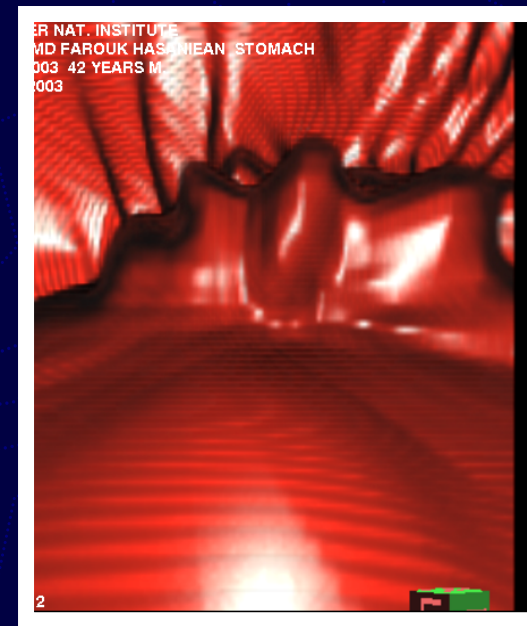
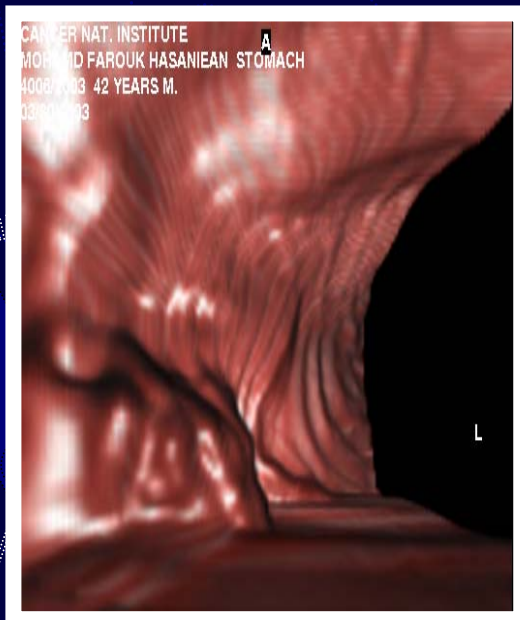
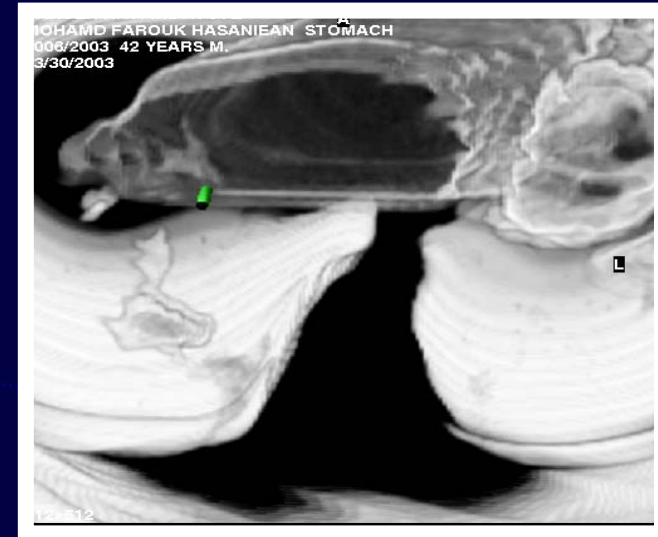
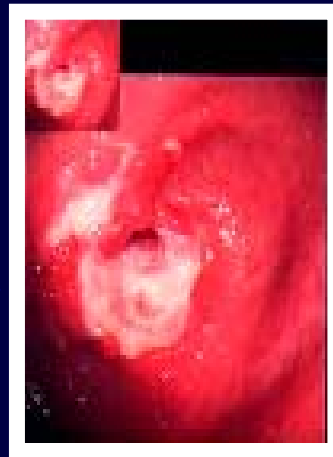
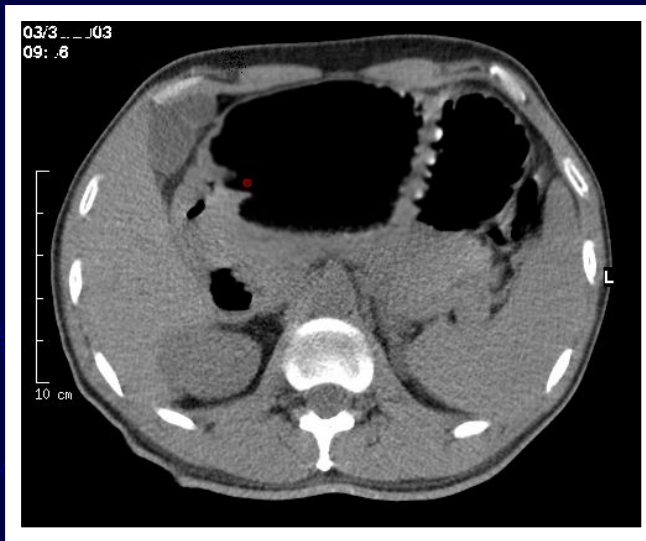


CT Scanogram & axial cuts showing a GO ulcerating mass.

VG Demonstrating cauliflower ulcerating mass & tiny mucosal nodules.

Fiberoptic endocsopy showing the tiny mucosal nodulations.

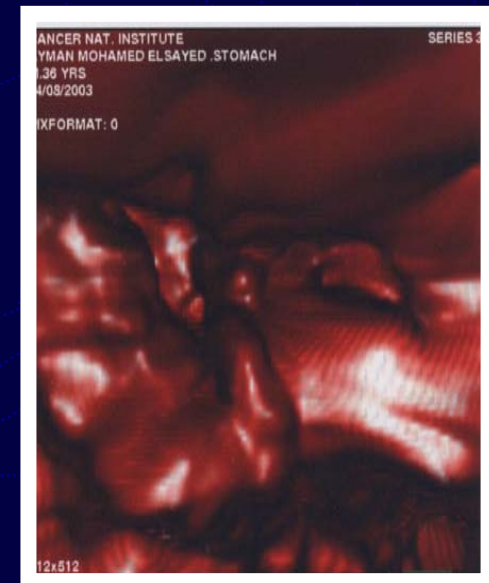
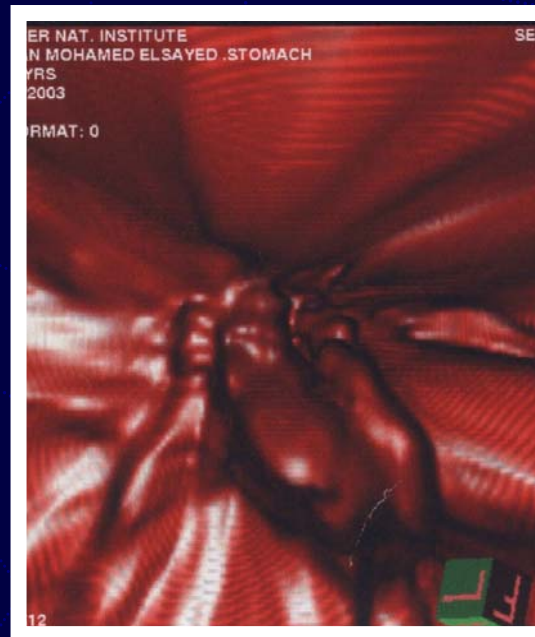
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Axial CT cuts showing Pyloric antral mass.

VG Demonstrating a constricting ulcerating pyloric mass.

Fiberoptic endoscopy showing the pyloric narrowing and ulceration.

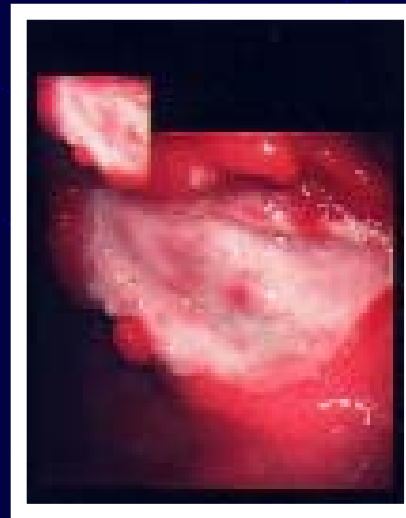
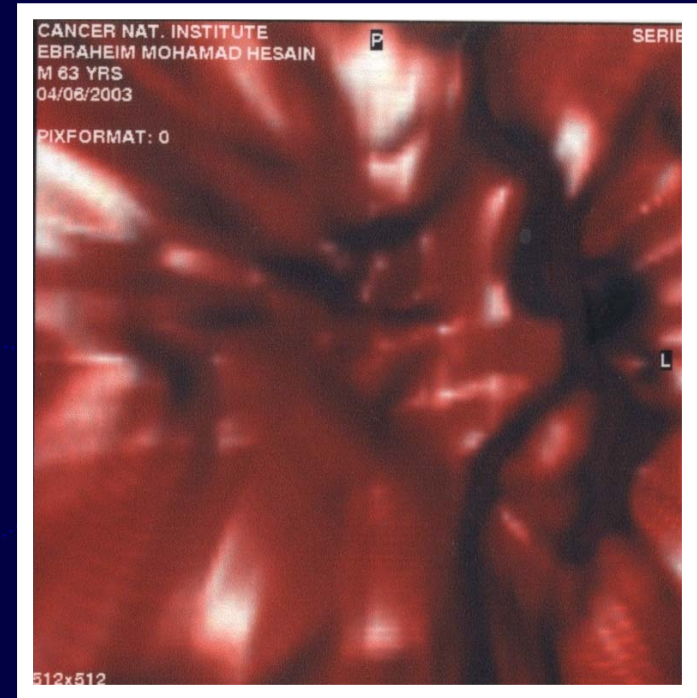
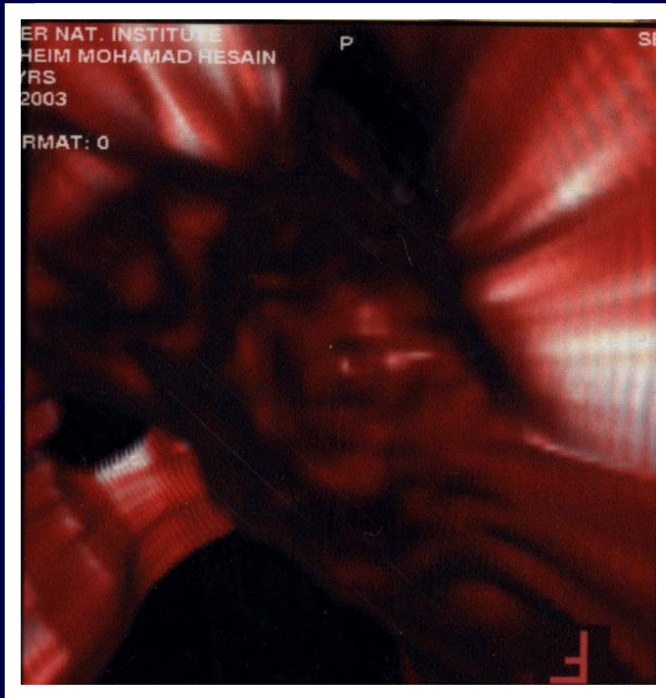


Axial CT cuts showing a lesser curvature mass.

VG Demonstrating an ulcerating lesser curvature mass.

Surface rendering technique with SSDs showing lesser curvature ulcer.

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Axial CT cuts showing a GO & lesser curvature mass.

VG Demonstrating ulcerating lesser curvature & GO mass.

Fiberoptic endocsopy showing the ulcerating mucosal ulcerlation.

DISCUSSION :-




▶ Surface rendering technique with surface shading (SSDs) is employed to obtain an image of the inner surface of the gastric wall in order to diagnose early superficial ulcerations.

▶ This technique uses the natural contrast between the air and the soft tissue interface of the inflated stomach, and it shows the edges of normal tissue and abnormal lesions.

- ▶ Perspective volume rendering offers unique advantages over standard 3D technique.
- ▶ Virtual endoscopy based on volume rendering technique gives the maximum range of the acquired volume data.
- ▶ It allows visualization of extramural soft tissue, other structures and their relations to the surrounding organs.

▶ The results of the included cases showed that fiberoptic endoscopy proved to be superior to virtual CT gastroscopy in early gastric cancer.

▶ In advanced gastric tumor virtual CT gastroscopy helped to evaluate the extra luminal component of the tumor and its relation to the intra luminal component.

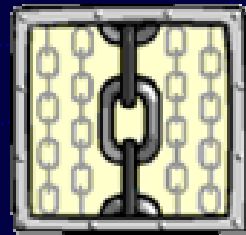


▶ Volume rendering virtual endoscopic images of gastric cancer and benign lesions of our series, were comparable to those obtained by fiberoptic endoscope.

▶ Fine mucosal changes could not be visualized.

Limitations of the virtual CT gastroscopy:

- ▶ Inability to reveal small and superficial mucosal lesions.
- ▶ It needs proper patients preparations (gaseous distension of the stomach).
- ▶ It is time consuming and finally inability to obtain samples for histopathologic assessment.



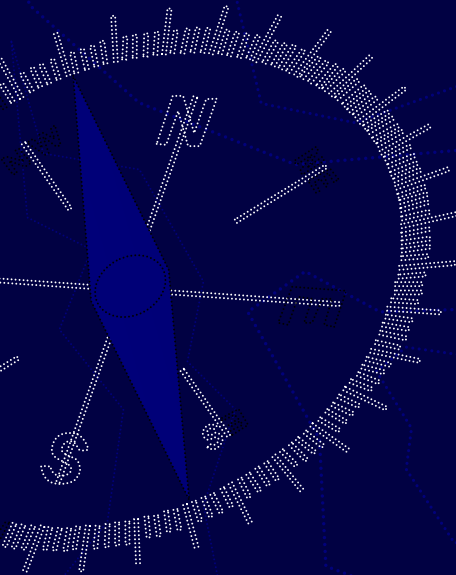
IN CONCLUSION:-



■ Virtual Gastroscopy is a non invasive imaging modality for evaluation of gastric lumen.

■ Preliminary results are promising, although further technical improvement is necessary for evaluating the gastric mucosa.

Thank You



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