

COMPARISON OF THE RESULTS OF MAGNETICALLY CONTROLLED CAPSULE ENDOSCOPY AND HIGH-DEFINITION GASTROSCOPY WITH PROPOFOL SEDATION: A PROSPECTIVE STUDY IN PATIENTS WITH UNINVESTIGATED FUNCTIONAL DYSPEPSIA

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Introduction: Gastric cancer have a high prevalence worldwide, and early diagnosis and management are essential for better oncological outcomes. Conventional gastroscopies have limitations due to possible complications, patient discomfort, poor tolerance and the need for sedation. Magnetic-controlled capsule endoscopy (MCCE) is a painless and non-invasive diagnostic tool that can explore the gastric mucosal abnormalities.

The **aim** of the present prospective single centre study is to compare the diagnostic accuracy and patient satisfaction of MCCE and gastroscopy.

Methods 89 consecutive young patients with dyspeptic symptoms were examined between 2018 August and 2023 April at our endoscopy unit who preferred MCCE as an initial diagnostic test. 80 (90%) patients underwent same-day MCCE and gastroscopy examinations, while the remaining 10% underwent the procedures within a 2-week interval. Gastroscopy was performed using an HD Fujifilm 700 series gastroscope. The urea breath test (UBT) was administered to detect Helicobacter pylori infection in patients who were not receiving proton pump inhibitor (PPI).

After the procedures, we evaluated and compared the capsule endoscopy and gastroscopy reports and videos. After both diagnostic procedures, our patients were asked to accomplish a patient satisfaction questionnaire to evaluate the tolerability of each examination, regarding patient discomfort, pain, and anxiety levels during the procedures.

Lesions	Gastroscopy Patients, n (%)	MCCE Patients, n (%)
Type		
Overall	9 (10,1%)	17 (19,1%)
Foveolar hyperplasia	2 (2,2%)	9 (10,1%)
Hyperplastic polyp	0	1 (1,1%)
Ulcer	3 (3,3%)	3 (3,3%)
Submucosal tumor	1 (1,1%)	1 (1,1%)
MALT lymphoma	1 (1,1%)	1 (1,1%)
Early gastric cancer	2 (2,2%)	2 (2,2%)
Location		
Proximal stomach	2 (22%)	7 (41%)
Distal stomach	7 (73%)	10 (59%)
Size		
<5mm	7 (77,7%)	14 (82,3%)
>5mm	2 (22,3%)	3 (17,7%)

Type	Gastroscopy Patients, n (%)	MCCE Patients, n (%)
Overall	83 (93,2%)	73 (82%)
Proximal	1 (1,1%)	4 (4,5%)
Distal	66 (74,1%)	53 (59,5%)
Pangastritis	16 (18%)	16 (18%)

Table 1: Distribution of found pathologies (focal lesions up; gastritis down) by gastroscopy and MCCE



Fig. 1: Magnetically controlled capsule endoscopy work station (left) and magnetic capsule endoscope (right)

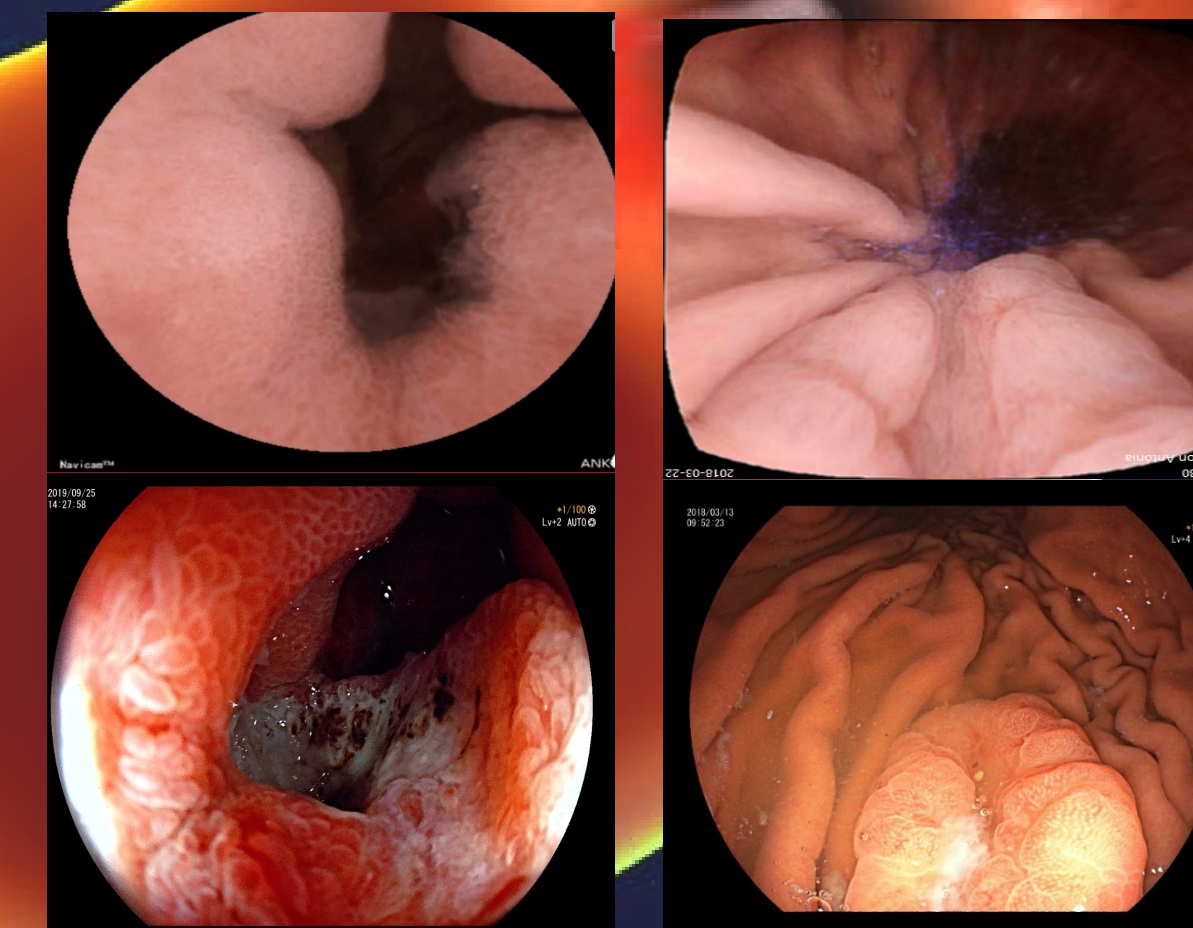


Fig. 2: Pyloric ulcer with bleeding spot (left) and early focal B-cell gastric lymphome (right). MCCE (up) and gastroscopy (down).

Results

A total of 89 patients were examined (53 males, 36 females, mean age 45). Urea breath test was performed in 43 cases: and detected 18 (41.9%) Helicobacter positive results, and the histology was consistent in 35 cases (81.4%).

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MCCE had higher diagnostic yield and accuracy than gastroscopy for detecting minimal foveolar hyperplasia (MCCE 9, gastroscopy 2, $p=0.01$) and upper gastritis (MCCE 4, gastroscopy 1, $p=0.02$), meanwhile gastroscopy was more accurate in the detection of antral gastritis (MCCE 53, gastroscopy 66, $p=0.03$). There were no significant differences between the two tests for detecting polyps, ulcers, submucosal tumours, early gastric cancer, lymphoma and pangastritis.

All the patients reported that MCCE was a more tolerable diagnostic test than gastroscopy with Propofol sedation based on the questionnaire.

Conclusion

In conclusion, both MCCE and gastroscopy are comparably sensitive diagnostic methods for detecting focal and diffuse lesions, with MCCE offering the advantage of higher patient tolerability and acceptance. The study results suggest that MCCE can be a useful alternative to gastroscopy in young patients (under age 50) referred for uninvestigated functional dyspepsia, to select those patients who really needs gastroscopy and biopsy and therefore it can shorten the waiting lists for routine upper GI endoscopy.

All authors have declared no conflict of interest