ENDOTICS SYSTEM, A NEW WAY TO UNDERGO THE ENDOSCOPIC VALUATION OF LOWER GI TRACT : OUR INITIAL EXPERIENCE.

R.BOZZI, A.INZIRILLO, V.DI MARTINO, M.SANNINO, F.PIANTADOSI, D.CATTANEO.

UOC CHIRURGIA ED ENDOSCOPIA DIGESTIVA - AZIENDA OSPEDALIERA DEI COLLI NAPOLI.

BACKGROUND

Video-colonoscopy is considered the gold-standard for the diagnosis of colonic diseases, and it is included as first line choice in colon-rectum cancer screening program in high-risk populations but this diagnostic technique shows some technical limitations, such as invasiveness and patient discomfort, which limit the adherence to the procedure.

The Endotics System is composed of a disposable probe and a workstation. The probe has a steerable tip, a flexible body and a thin tail. The head hosts both a vision system and channels for water jet and air in order to provide rinsing and suction/insufflation, respectively. The workstation allows the endoscopist to fully control the disposable probe by means of a hand-held console and to visualize on a screen real time images (fig 1). The operator can steer the head of the robotic colonoscope in every direction, elongate the body of the probe in order to move it forward following the shape of the intestine, and control rinsing, insufflation and suction. This technology thanks its extremely flexible and disposable probe is highly safe and painless (fig. 2).

AIM

The acceptability of colonoscopy procedure is limited by several factors, one of these is the patient discomfort. A new robotic colonoscope device, the Endotics System, may be helpful in reducing such and other limits. This study assessed both the acceptability and efficacy and diagnostic capabilities of this new endoscope. The key primary endpoint was to evaluate diagnostic capabilities in a cohort of patients who wouldn't to undergo conventional colonoscopy without sedation; secondary endpoints were to evaluate the painless capabilities scoring a pain index in a scale ranging from 0 to 10, the cecal intubation rate and the cecum reaching time (fig. 3).

METHODS AND RESULTS

A total of eighteen patients participated to the study (9 men, 9 women; mean age 55 years). Three patients were excluded: one because of panic syndrome before procedure occurs and two because of inadequate bowel preparation where procedures were stopped on rectum colon. The cecum was reached in 15 patients (cecal intubation rate 100%).

The mean time to reach the cecum was 55 min (range 48-75) and mean pain score was 2.

Endoscopic findings were: 3 polyps lesions (mean size x 110 mm), whereof one Ca in situ, in 3 people; 7 diverticular disease in 7 people (fig. 4a, 4b). All findings was confirmed by following conventional colonoscopy procedure with sedation and no additional findings were notice (Sensitivity=100%, Sensibility= 100%). No device-related complications were encountered.

Limits of the Endotics System consist on the absence of an instrument channel and procedure time longer than conventional colonoscopy.

CONCLUSION

The Endotics System represents a new painless method to undergo the endoscopic inspection of the lower GI tract, specially, in patients who are not willing to have a conventional colonoscopy procedure without sedation. Endotics System could be useful also for CCR prevention, but the absence of the instrument channel and the longer procedure time represent a limitation for this purpose. Further clinical and comparative studies are warranted.

No disclosure conflict.

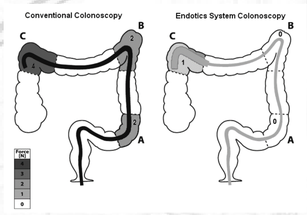

Figure 3

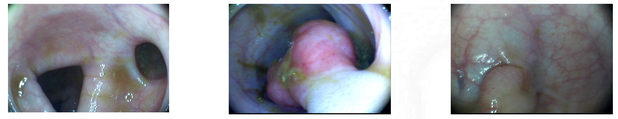

Figure 4a

Figure 1

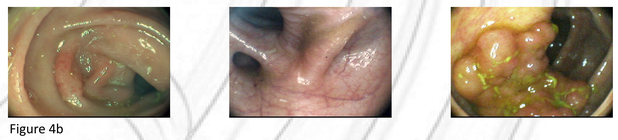

Figure 4b

REFERENCES

Tumino E et al Endotics system vs colonoscopy for detectiofpolyps. World J Gastroenterol 2010 November;16(43):5452-5456

Cosentino F, et al. Functional evaluation of the Endotics System, a new disposable self-propelled robotic colonoscope: in vitro test and clinical trial. Int J Artif Organs 2009;32:517-27.

Lisi D, et al. Participation in colorectal cancer screening with FOBT and colonoscopy: an Italian, multicentre, randomized population study. Dig Liver Dis 2010;42:371-6.

Grattagliano I, et al. Comments to "The intelligent, painless, "germ-free" colonoscopy: A Columbus's egg for increasing population adherence to colorectal cancer screening?" Dig Liver Dis 2011;42:836-7.

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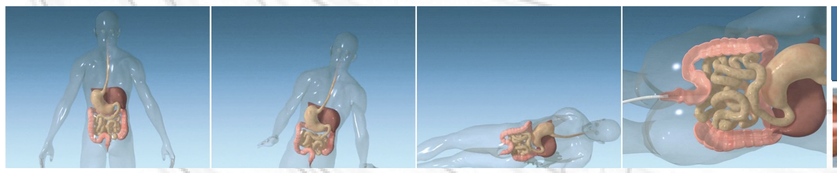

Figure 2