

Presentation Summary

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Feasibility, completion and detection rate of the new generation of capsule endoscope with a 360° lateral panoramic view - A single center retrospective study.

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Introduction:

A revolution in Capsule Endoscopy began in 2000 for diagnosing small bowel diseases. The first capsule endoscope was M2A® with one camera at one end of the capsule (Given Imaging, Yokneam, Israel). It was the first time that direct visualization of the entire small bowel was possible. We have seen a rising number of examinations and indications for capsule endoscopy. The limitation of the end-viewing capsule is the reduced view - PillCam™ SB 3 (Medtronic, Dublin, Ireland) with 156°, MiroCam® (IntroMedic, Seoul, Korea) with 170°. With the introduction of CapsoCam (CapsoVision, Saratoga, CA, USA) which has a lateral 360° panoramic view, we now have a total view directly on the mucosa and an opportunity for higher detection rate of pathology.

Objective and Methods:

The objective of this single center retrospective study was to compare the different capsule systems used at the KA Rudolfstiftung, Vienna, Austria (CapsoCam, PillCam, MiroCam), in respect to visibility of the papilla of Vater, completion rate, detection rate (defined as pathology identified according to the indication), loss of data because of technical problems, image quality, download and reading time of the 360° lateral panoramic view of CapsoCam and the end-viewing systems including PillCam and MiroCam.

Included are examinations from 2012 to 2018 with the CapsoCam system including three generations of SV-1, SV-2 and CapsoCam Plus: 852 (CapsoCam Plus: 516), and the PillCam SB 2 and SB 3: 803 and MiroCam: 315 - a total of 1,970 examinations.

	Results		
	PillCam	MiroCam	CapsoCam
Visibility of papilla of Vater	9.60%		81.7%
Complete examination:	84%		97.4%
Loss of Data	6%		3.1%
Detection Rate	44.6% p-value: 0.003901		51.3%
Download time	90 minutes	35 minutes	15 Minutes
Reading Time	30-40 minutes		15-20 Minutes

Conclusion:

- CapsoCam showed an excellent visibility of the papilla of Vater at more than 80%
- CapsoCam results in complete examination of the small bowel at more than 97%, and this is the highest published data to date.
- CapsoCam is superior in finding relevant pathologies according to the indication with a p-value of 0.0039
- The main concern of “experts” with CapsoCam is loss of data due to the need to have patient retrieve the excreted capsule. Results show this is not a valid concern. This study shows twice the data loss for the end-viewing capsule group due to problems with the data recorder, SD-card or the sensor belt.
- CapsoCam Plus has the same image quality compared to PillCam SB 3.
- CapsoCam Plus has the fastest download and reading time and has clear benefit compared with the established end-viewing systems.

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