

Commentary

The Journey of Capsule Endoscopy in India

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Capsule endoscopy (CE) is a major breakthrough technology in the field of gastrointestinal (GI) endoscopy. It was introduced to the world in the year 2000. Since then, it has been used all over the world and well established, primarily in the evaluation of obscure GI bleeding. Over the years, there have been several advancements in the technology of CE. To begin with, there was only one CE system developed by given imaging system. Currently, we have several new generation CE systems, which are commercially available for evaluation of not only small bowel but colon and esophagus as well. The workstation has also been improvised. However, the major limitations of CE, such as nontherapeutic capability, are still there. To overcome this challenge, device-assisted enteroscopes (DAE) have been developed. So now, CE and DAE complement each other, and small bowel evaluation is no more a dark tunnel.

In India, we started using CE, the moment it was introduced to the world. Since then, it is widely available all over the country. There are several publications on CE from India. However, the high cost of procedure continues to be a deterrent in our country. In the current issue, Chauhan *et al.*^[1] have published their experience of CE, using Micro Cam Capsule endoscope (Intromedic, Seoul, South Korea), in 102 patients from February 2014 to March 2018. The main indication of the procedure was obscure GI bleeding. The overall positive diagnostic yield of CE was 72.5%. The commonly detected lesions were vascular malformations in 20.5%, nonsteroidal anti-inflammatory drug-induced lesions in 12.7% and small bowel ulcers in 26.4%. Worm infestation was detected in 3.9% along with other miscellaneous causes. CE retention occurred in two patients, which required surgical removal. The results of this study are in concurrence with that of other studies published earlier from different centers. The highlight of this study is the use of Micro Cam CE system, which the authors have used in 108 patients, whereas, the majority of other studies were performed using Given Imaging CE. This

is the first study of CE from India, where Micro Cam CE system has been used in a large cohort of patients. Although there is no head to head comparison, yet there is no difference in the diagnostic yield and safety of two different CE systems. This study reemphasizes the utility of CE in the evaluation of small bowel diseases in general, obscure GI bleeding in particular.

CE is an integral part of GI endoscopy in India. Where do we go from here? Let's see from the Indian perspective. The cost of the procedure is still a major challenge. Can we develop an indigenous CE system, which is less expensive than the currently available CE systems? This is feasible, provided technology industry and health-care professionals work together. Another challenge is reading time of CE without compromising the quality of the report. Artificial intelligence technology-based solutions may be applied to mitigate this challenge. The development of therapeutic capsule endoscope is a work in progress. India is a major technology hub and may contribute a lot in developing and designing new generation CE system. So far, CE is an important diagnostic modality in the evaluation of obscure GI bleeding. It helps not only in the diagnosis of obscure GI bleeding, but also it acts as a guide to device-assisted enteroscopy for further therapy. The cost of CE still continues to be a limiting factor in India. However, the optimum use of CE with or without DAE is not only a cost-effective but efficacious strategy in evaluation and therapy of small bowel diseases.

The journey of CE in India is progressing at a steady pace.

REFERENCE

1. Chauhan V, Goel V, Jain M, Gupta G, Pokharna R, Sharma SS, *et al.* Capsule endoscopy for obscure gastrointestinal bleeding: A single center experience. *J Dig Endosc* 2018;9:168-75.

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Access this article online	
Quick Response Code: 	Website: www.jdeonline.in
	DOI: 10.4103/jde.JDE_78_18

How to cite this article: Gupta R. The journey of capsule endoscopy in India. *J Dig Endosc* 2018;9:183.