

Capsule endoscopy in Portugal

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Submitted Mar 31, 2017. Accepted for publication Apr 13, 2017.

doi: 10.21037/atm.2017.04.23

View this article at: <http://dx.doi.org/10.21037/atm.2017.04.23>

Introduction

Capsule endoscopy was introduced in Portugal in 2001, shortly after its approval and global market release. The first examinations were performed in Oporto, by the hand of Miguel Mascarenhas Saraiva, and soon it became widely available in many other gastroenterology units across the country. The first colon capsule (PillCam Colon) was performed in 2007 at Coimbra University Hospital. Currently, most centres performing capsule endoscopy are public inpatient facilities, the costs being covered by the national health system, but in the last few years it has become progressively available in private gastroenterology units as well. Most of the sites use PillCam® (Medtronic) capsules, while other systems currently have relatively less implementation in Portugal.

Formation in capsule endoscopy: current situation

Due to its role as a first line diagnostic examination for many diseases affecting the small bowel, capsule endoscopy is currently recognised as a pivotal component of the competences of Portuguese gastroenterologists. In fact, since 2012, by determination of the College of Gastroenterology of the Portuguese Medical Association, it is mandatory for every trainee to become competent in capsule enteroscopy as part of their core curriculum. As an example, in the Gastroenterology Department of Hospital da Senhora da Oliveira (HSO), Guimarães, which is an approved Training Centre of the European Board of Gastroenterology & Hepatology with a vast clinical, investigational and training experience in the field of capsule endoscopy, training in capsule endoscopy is actually the first step of the endoscopic formation of every new trainee, even before learning conventional upper endoscopy

or colonoscopy. This approach enables highly motivated, yet inexperienced, trainees to smoothly get familiar with the whole new reality of endoscopic imaging at convenient schedules, progressively tailoring learning objectives, without the pressure of invasive training on patients. The training requirements leading to competency have not been validated, although a minimum number of 10 to 20 supervised procedures has been advocated (1). Nonetheless, proficiency should certainly be based on competency rather than a rigid absolute number of procedures, reflecting differences in individual learning curves (2). Portuguese gastroenterology trainees have the opportunity to learn the technique in dedicated training courses which have the scientific endorsement of the Portuguese Society of Gastroenterology (SPG). Currently, there are two training courses specifically dedicated to capsule endoscopy in Portugal, which are held yearly. In 2017, the 15th edition of the “Hands-On” capsule endoscopy course, directed by Miguel Mascarenhas Saraiva, will take place at ManopH clinic, Oporto, and the 2nd edition of the “Capsule Endoscopy Training Program”, directed by José Cotter, Head of Gastroenterology Department of HSO, Guimarães, will be held at the School of Medicine, University of Minho, Braga. The latter was born of a teaching program developed in 2013 and ran over 5 years in the HSO, Guimarães facilities, where over 40 Portuguese and international trainees received an individualized 40 hours training plan adjusted for previous experience in capsule endoscopy, becoming proficient in the technique and able to introduce or develop it on their own institutions. Currently these are 3-day courses targeted to gastroenterology residents and seniors who aim to become competent in capsule endoscopy, covering the fundamentals, technical and clinical aspects of both small bowel and colon capsule endoscopy. They include state of the art lectures addressing the main indications for capsule endoscopy and

an overview of software gadgets and reading techniques, as well as interactive practical sessions for reading full and segmented videos. These courses give the opportunity for updating knowledge on capsule endoscopy for the work-up and management of the gastrointestinal disorders that affect the small bowel, with a strong practical component on individual workstations, so that every trainee has the opportunity to get familiar with the software and put into practice the contents and learning points of each session. Complementarily, the “*Atlas of Capsule Endoscopy*”, edited by Miguel Mascarenhas Saraiva and Juan Manuel Herrerías, is a landmark book for both introductory learning and “on-demand” consultation (3).

Portuguese Small Bowel Study Group (GEPID)

The GEPID was created in 2010 as a specialized section of SPG. Pedro Figueiredo was the first President of this structure, which is currently chaired by Susana Mão de Ferro. Among the activities promoted and developed by the GEPID, the focus lies on regular participation and promotion of scientific meetings, development of opportunities for training, fomentation of scientific communications and contributions for peer-reviewed journals. Every year, the scientific program of the national congress of Gastroenterology (Digestive Week—“Semana Digestiva”) integrates a brief introductory “hands-on” course on capsule endoscopy and enteroscopy, promoted by the GEPID. Also in the same meeting, it has the responsibility to organize a roundtable session, which in 2017 embraces “Management of small bowel Crohn’s Disease from the paediatric age to the adult”. The GEPID recently published a review article on the role of endoscopic scores for evaluation of Crohn’s Disease activity at small bowel capsule endoscopy (4), and a multicenter survey on the use of device-assisted enteroscopy in Portugal (5).

Iberian meeting of capsule endoscopy (RICE)

Since its first editions in Sevilla 2003 and Oporto 2004, the RICE, which was first devised by Juan Manuel Herrerías and Miguel Mascarenhas Saraiva, has become a scientific meeting of reference in the region. It is held yearly, alternately in Portugal and Spain, being a landmark for the update and interchange of knowledge and experiences among colleagues dedicated to capsule endoscopy in both sides of the frontier, with room for conferences, roundtables, and discussion of clinical cases or endoscopic

snapshots. It is a 1-day scientific meeting, being preceded since 2007 by the Iberian Meeting of Enteroscopy (RIE), which particularly dedicates to device-assisted enteroscopy. In 2017 the RICE took place in Pamplona, Spain, and next year the 16th edition will be held in Ponta Delgada, in the island of São Miguel, Azores, Portugal. The fruitful collaboration of Portuguese and Spanish gastroenterologists is reflected in the dynamism of these meetings, and set the bases for multicentre studies and publications (6).

Investigation and publications

Over the last years, Portuguese gastroenterology has been regularly contributing with investigational activity and published papers on the field of capsule endoscopy. The national centre of data registry in gastroenterology (CEREGA), a structure of the Portuguese Gastroenterology Society, is currently recruiting patients for a multicentre prospective evaluation of the efficacy of endoscopic therapy for small bowel angioectasias after detection by small bowel capsule endoscopy. Relevant data on the role of capsule endoscopy in suspected Crohn’s Disease (7-9), IBD-unclassified (10,11) or known Crohn’s Disease (12-15), including for instance the clinical validation of the Lewis Score (16), have contributed to set the ground for clinical practice and current guidelines on the topic of IBD. Recently, a pilot study on the role of pan-endoscopy using the colon capsule for monitoring Crohn’s Disease inflammatory activity and response to therapy has been performed (17). Other lines of investigation have also been conducted in Portuguese centres, including the role of capsule in urgent or elective evaluation of mid GI bleeding (18-25), small bowel tumours (26-29), evaluation of risk factors and management of capsule retention (30), optimization of bowel preparation and use of prokinetic agents (31-36), software features for improving reading such as evaluation of the usefulness of virtual chromoendoscopy (37-39), suspected blood indicator (40), or experimental software development for automatic detection of lesions (41,42). A review article on the current clinical indications for small bowel capsule endoscopy has been published in *Acta Médica Portuguesa*, the official journal of the Portuguese Medical Association (43). Moreover, Portuguese gastroenterologists have been part of international relevant papers and consensus guidelines (6,44-48), highlighting the dynamism and reputation of national clinical and scientific activity in the field of capsule endoscopy.

Conclusions

Capsule endoscopy is steadily established and widely available in Portugal. The future of the technique seems bright, as new gastroenterology trainees are prepared from the beginning of their formation to become competent in capsule endoscopy, supported by qualified training centres and encouraged by scientific societies for clinical and investigational development.

Acknowledgements

None.

Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

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Cite this article as: Rosa B. Capsule endoscopy in Portugal. *Ann Transl Med* 2017;5(9):200. doi: 10.21037/atm.2017.04.23