

## Den lille Havfrue for the gut



We read with interest about the safety and feasibility study on a self-propelled capsule endoscopy (SPCE) by Ota et al [1]. The authors, who have committed years of research on the prospect of “mermaid or tadpole” CE, present the latest version of their efforts, including a fenestrated cap with a tail fin made of silicon resin that vibrates under the control of an external magnetic field. It was reassuring to see that fenestrations were added to the resin cap to allow for some imaging input from the second dome of the dual-headed capsule (although the inlet image depicts only the initial version of the cap-fin that entirely covers one of its domes. This is indeed in line with recent research confirming that the use of double-headed CE provides more information with the potential to change clinical diagnosis and, therefore, management [2].

Recently, the use of panenteric capsule endoscopy has been promoted as a feasible technique for complete examination of the gut. However, further structured studies are needed to explore its full potential [3]. However, one of the main obstacles to its wider use is the time required for any passive capsule to travel from the mouth to the anus. Moreover, no passive device can reliably inspect the gastric cavity, limiting it to a small and large bowel modality. Even though with Ota’s SPCE, an assessment of the stomach (based on the technique and skills of the external operator) can be a challenge [1], and certainly not something that one should expect to achieve in 10 minutes (as per the authors’ future objectives), other externally controlled – albeit not self-propelled-capsules [4] – remain the mainstream choice for gastric examination.

There are several issues to be addressed if the technology is to become a primary healthcare modality in the western world, including size (housing the system requires space that may not be available in most practices), regulatory concerns, competition from more advanced ultra-

thin trans-nasal gastroscopy, the system’s accuracy for detection of preneoplastic colon lesions, as well as pricing. Nonetheless, SPCE does precisely what it says on the tin, that is, guide other researchers in developing capsule endoscopes with external control, thus allowing real-time observation by controlling the environment within the gastrointestinal tract with medications and/or other means [5]. In other words, the key here is not the magnet or the capsule but the affordability, automation, and empowerment of healthcare professionals. Last, we do agree with the authors that a recheck of the gut (in a tandem fashion) with another capsule is necessary as their subsequent trial to confirm safety.

### Competing interests

Anastasios Koulaouzidis is the co-founder of AJM Med-i-caps, co-director of iCERV Ltd, has received consultancy fees from Jinshan Ltd, travel support from Jinshan, Aquilant, and Dr. Falk Pharma, research support (grant) from ESGE/Given Imaging Ltd and (material) Intromedic/Synmed, honoraria from Dr. Falk Pharma UK, Ferring and Jinshan. He has attended advisory board meetings for Dr. Falk Pharma UK, Tillots, and ANKON.

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*Endosc Int Open* 2022; 10: E293

DOI 10.1055/a-1785-4672

ISSN 2364-3722

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Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany

