

## Management of deep looping when failing to progress at double-balloon enteroscopy

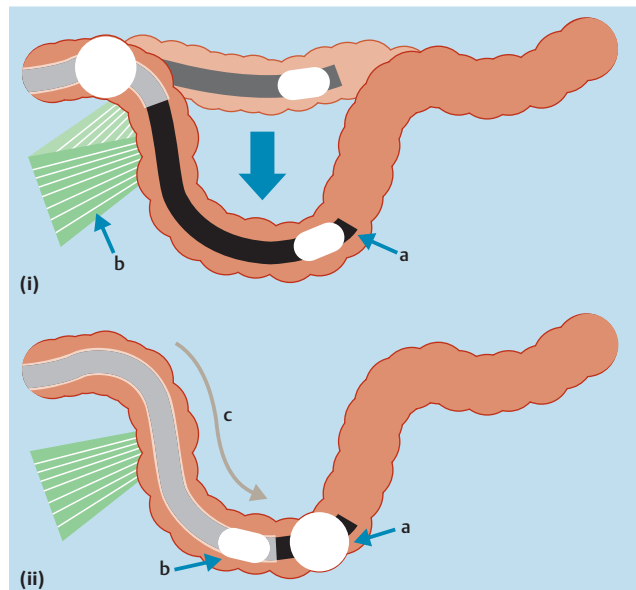
Deep intubation of the small bowel during double-balloon enteroscopy (DBE), as described by Yamamoto et al. [1–3], relies on the principles of minimal small-bowel stretching and loop reduction. This is achieved by simultaneous traction provided by the enteroscope and overtube balloons, combined with a “pull-back” maneuver that allows loop resolution and straightening of the free and untethered small bowel [1]. In our experience and that of others [4], this insertion method may be unsuccessful, for example when small-bowel tethering due to intra-abdominal adhesions occurs in patients, because deep loops are formed that are difficult to reduce when the enteroscope is advanced. The result is a decreased insertion depth and a higher rate of failure for the procedure. We describe an adaptation of the conventional insertion method that may be useful when deep looping occurs during DBE.

**Step 1:** Progress is hindered (e.g. because of a fixed mesentery or small-bowel tethering) resulting in the formation of a deep loop on enteroscope advancement (● Fig. 1 i). The loop is stabilised by the inflated enteroscope balloon as the overtube is advanced with its balloon deflated (● Fig. 1 ii).

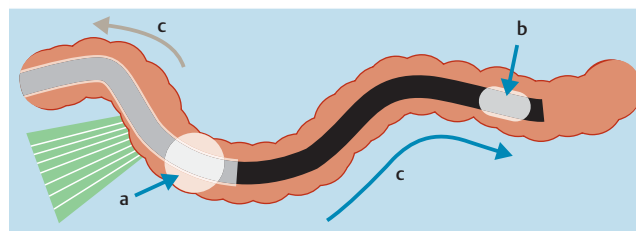
**Step 2:** The overtube balloon is inflated and the overtube is pulled back as the enteroscope is advanced through the loop with its balloon deflated (● Fig. 2).

**Step 3:** The enteroscope is pulled back with its balloon inflated as the overtube is advanced with its balloon deflated. This step is key to the success of this variation in insertion method and relies on the use of the enteroscope balloon alone (which is not available in other deep enteroscopy techniques such as single-balloon or spiral enteroscopy) (● Fig. 3).

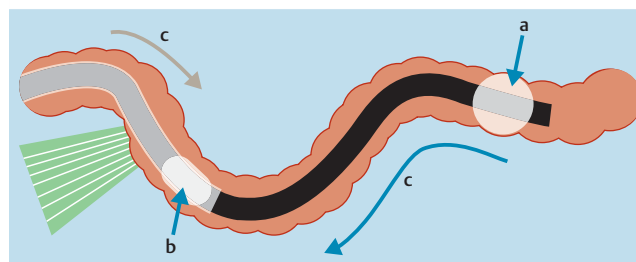
**Step 4:** The overtube balloon is inflated and the enteroscope with its balloon deflated is advanced through the partially reduced deep loop as the overtube is pulled back (● Fig. 4).



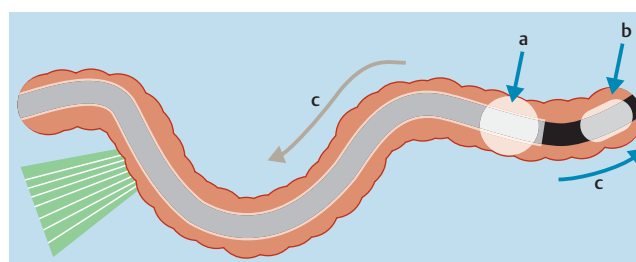
**Fig. 1** (i) Failure to progress with the enteroscope (a) as fixed mesentery forms a deep loop (b). (ii) The enteroscope balloon is inflated (a), the overtube balloon is deflated (b), and the overtube is advanced (c).



**Fig. 2** The overtube balloon is inflated (a), the enteroscope balloon is deflated (b), and the enteroscope is advanced as the overtube is pulled back (c).



**Fig. 3** The enteroscope balloon is inflated (a), the overtube balloon is deflated (b), and the overtube is advanced as the enteroscope is pulled back (c).



**Fig. 4** The overtube balloon is inflated (a), the enteroscope balloon is deflated (b), and the enteroscope is advanced as the overtube is pulled back (c).

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**Bibliography**

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