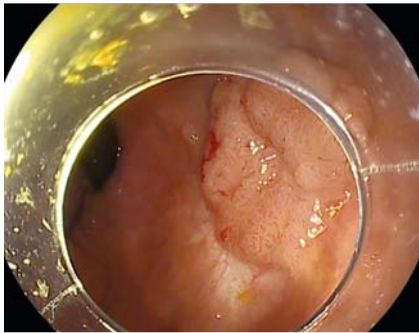


## Endoscopic transmural hydro-dissection as a rescue therapy for rectal fibrotic adenoma

The rectum is considered a feasible and safe area in which to perform endoscopic submucosal dissection (ESD) [1, 2]. Therefore, ESD is a suitable approach for the treatment of high risk rectal adenomas. However, scarred and fibrotic polyps have recently been described as the only preoperative predictor of failed ESD in the rectum [2, 3]. Transanal endoscopic microsurgery (TEM) has been shown to be an effective treatment for lower rectal carcinomas staged as T1 or T2 [4], owing to the depth of the resection.

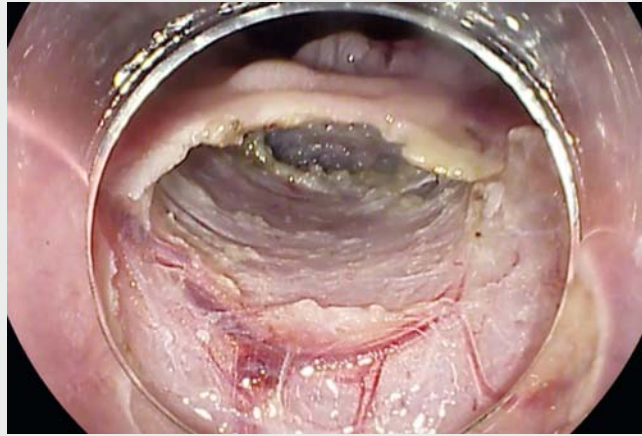


► **Fig. 1** Intensely scarred adenoma located 3 cm away from the dentate line.

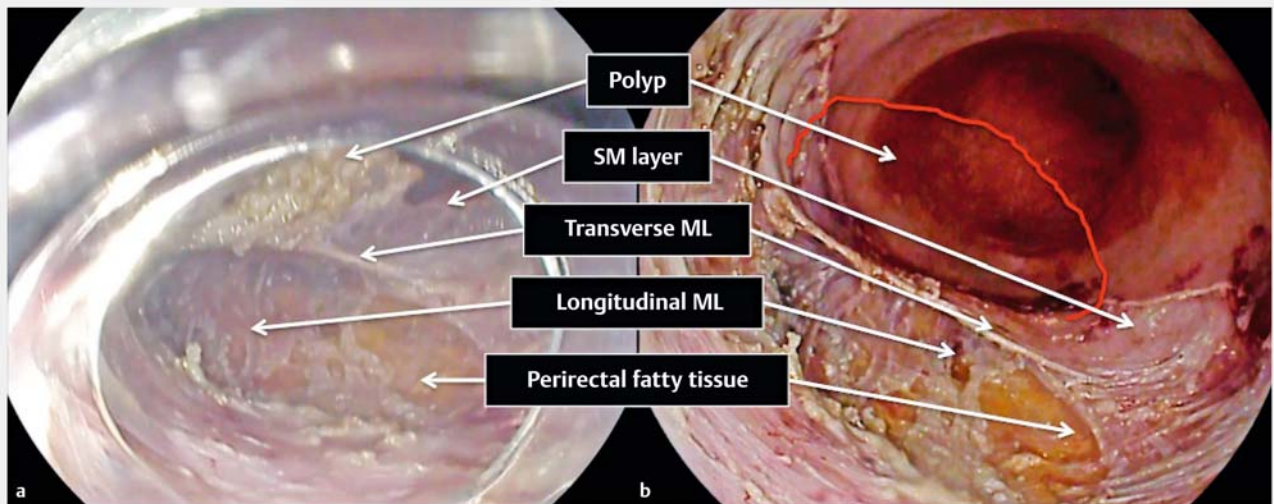
We present the case of a 25 mm 0-Is type adenoma with wide scarred areas caused by two previous failed TEMs, located 3 cm away from the dentate line (► **Fig. 1**), in a 75-year-old man without any relevant medical history.

The pocket creation method was adopted because of the expected submucosal

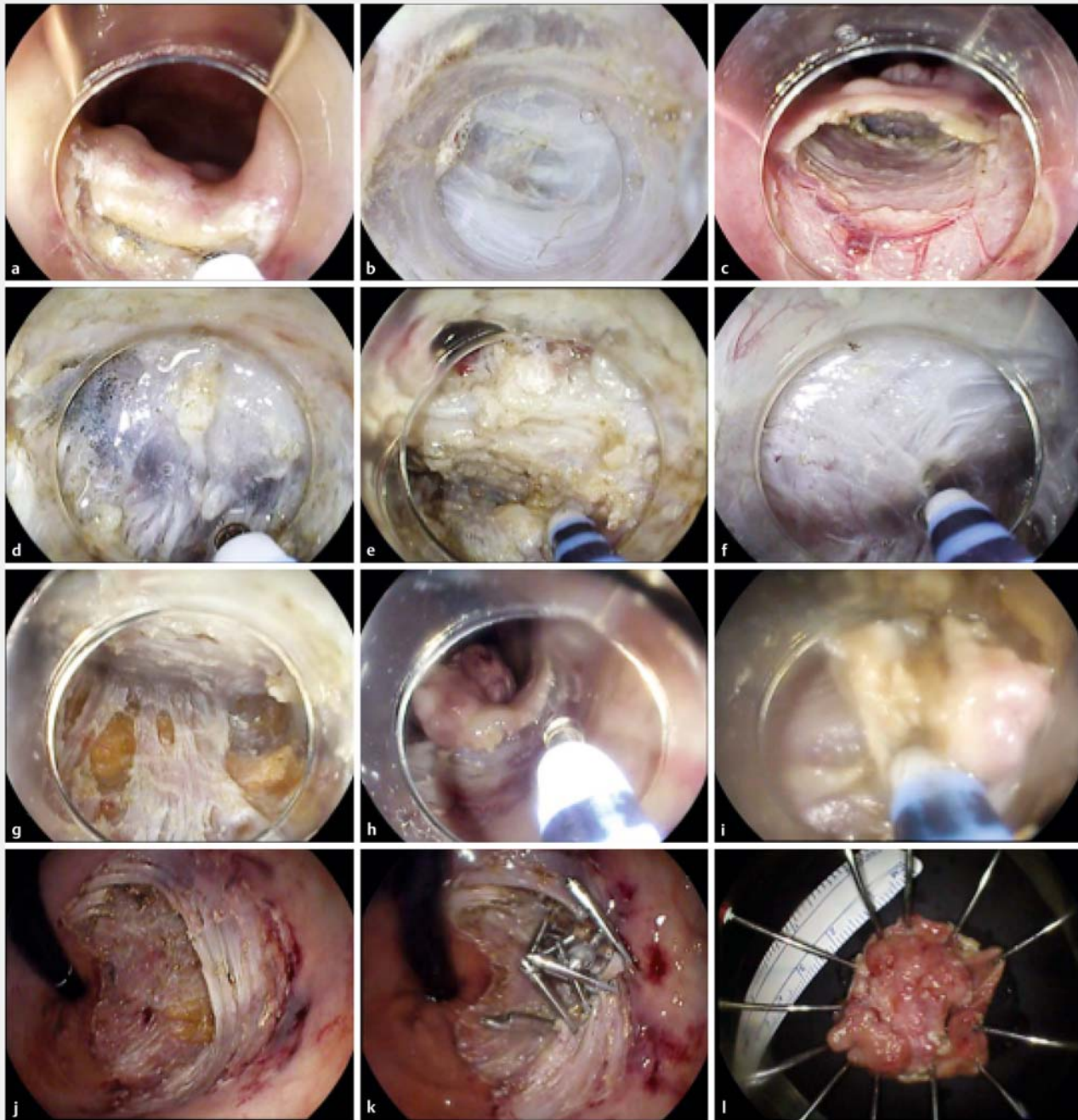
fibrotic tissue [5]. The first stage of the tunnel was created without any drawbacks using an Erbejet-2-HybridKnife (Erbe Elektromedizin GmbH, Tübingen, Germany). However, when the area below the lesion was reached, dramatic fibrotic tissue became visible. This finding made it extremely difficult to identify



► **Video 1** Endoscopic transmural hydro-dissection by pocket creation method of a sessile scarred polyp located in the lower rectum.



► **Fig. 2** Transmural dissection planning diagram. **a** Different layers exposed during the procedure. **b** Final result. Red line indicates the previous location of the adenoma. SM, submucosal layer; ML, muscular layer.



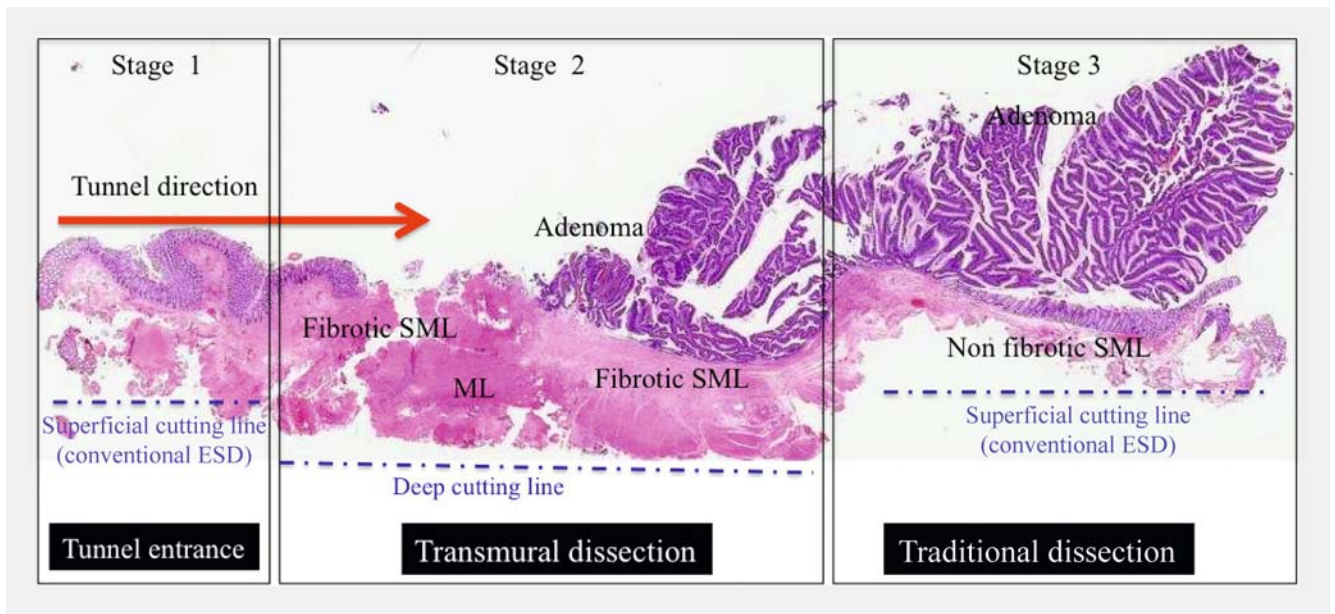
► **Fig. 3** Detailed endoscopic transmural hydro-dissection procedure. **a – c** Initial step: tunnel creation across the submucosal layer. **d** Submucosal and muscular layer fusion without a feasible traditional cutting line. **e** Cutting of transverse and longitudinal muscular layer. **f** Dissection phase between transverse and longitudinal layer. **g** Remaining longitudinal muscular layer and perirectal fatty tissue exposed inside the tunnel. **h** Endoscopic submucosal dissection in retroflex position across the submucosal layer. **i – k** Final dissection steps. **l** Specimen mounted onto cork.

a feasible cutting line between the submucosal and muscular layers. At this point (stage 2), we decided to carry out a transmural dissection between the transverse and longitudinal muscular layers, in order to reach a feasible cutting line inside the submucosal layer (► **Fig. 2**, ► **Fig. 3**, ► **Video 1**). Consequently, we

successfully achieved en bloc resection of the lesion (stage 3). Subsequently, the muscular defect was closed using endoclips (Resolution; Boston Scientific, Marlborough, Massachusetts, USA). The patient was discharged 72 hours after the procedure.

The histopathological analysis revealed a transmural specimen with high grade dysplasia (R0 resection), intense fibrotic submucosal tissue, and superficial muscular propria layer (► **Fig. 4**).

In conclusion, the pocket creation method performed in fibrotic and scarred lesions located in the lower rectum,



► **Fig. 4** Microscopic analysis of the dissected specimen, focusing on the different stages of the procedure. SML, submucosal layer; ML, muscular layer.

allowed a safe and deep dissection across muscular layers. This approach might support ESD as a rescue therapy following failed TEM.

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### Competing interests

None

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