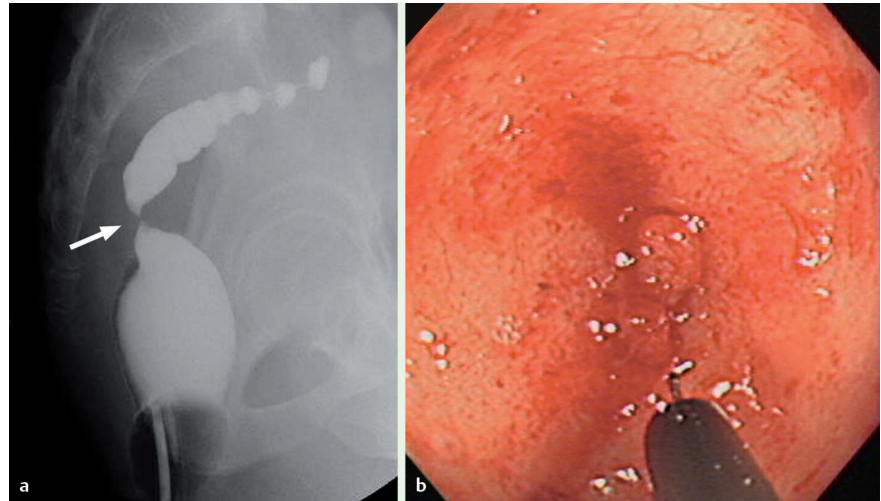


## Endoscopic hook knife cutting before balloon dilatation of a severe anastomotic stricture after rectal cancer resection

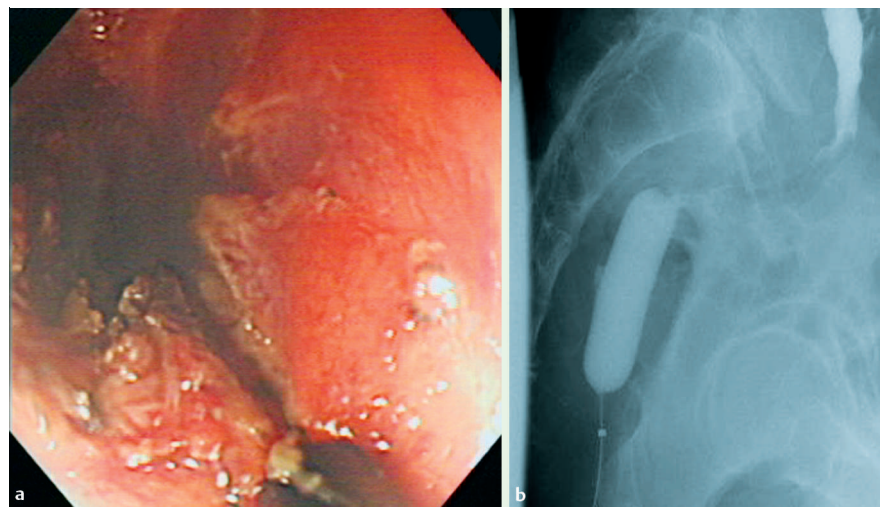
Anastomotic stricture associated with suture failure develops in 5%–10% of patients after resection of rectal cancer [1]. Direct digital dilatation or transrectal surgical treatment is possible if the anastomosis is located in the lower rectum. Endoscopic balloon dilatation is the best method for all the remaining patients in whom these procedures for the lower rectum cannot be done [2]. However, double stapling of the rectal anastomosis may induce intractable and severe re-stenosis, so a procedure that includes endoscopic incision with a papillotomy knife has been reported [3,4].

In this patient, severe anastomotic stricture was identified before stoma closure at 1 year after the creation of a right transverse colon loop colostomy for anastomotic leakage following resection of advanced rectal cancer. Balloon dilatation had already been performed once. Because this was a male patient with a narrow pelvis and a high body mass index, laparotomy/re-anastomosis was considered to be very difficult after the improvement of pelvic floor peritonitis, and endoscopic treatment was considered to be the best option. Follow-up gastrografen enema showed severe re-stenosis at the rectal anastomosis, although the passage of gastrografen was very good (● Fig. 1 a). Colonoscopy revealed old inflammatory granulation tissue in the rectum with a pin-hole-like lumen in the center (● Fig. 1 b).

It was therefore decided to perform balloon dilatation after making an incision at the severe stenosis with a hook knife (KD-620LR disposable high-frequency knife; Olympus Medical Systems Corp., Tokyo, Japan), which is generally used for endoscopic submucosal dissection. This high-frequency knife has a hooked part that can be freely rotated through 360 degrees. The length of the knife is 4.5 mm, the hook length (depth) is 1.3 mm, and the largest outer diameter is 2.6 mm. Operability in the direction of the long axis of the rectum is easy, unlike the conventional papillotomy knife or pre-cutting needle knife, and the operator can directly feel with the right hand the sensation of incising the rectal wall at the stenosis to a depth



**Fig. 1** Follow-up gastrografen enema shows severe re-stenosis at the rectal anastomosis, although passage of gastrografen to the anal side is good. **b** Colonoscopy shows that the rectum contains old inflammatory granulation tissue with a slight pin-hole-like lumen in the center.

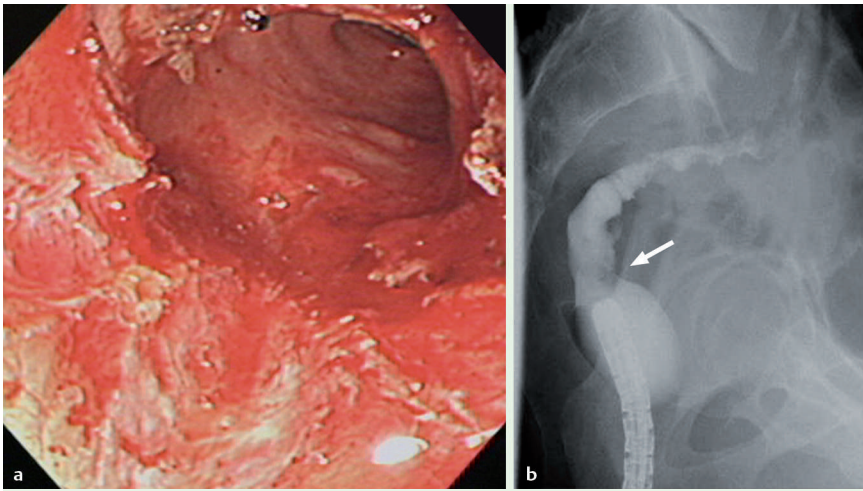


**Fig. 2** This high-frequency knife is a hook knife and the hooked part can be freely rotated through 360 degrees. The length of the knife is 4.5 mm, the hook is 1.3 mm long, and its largest outer diameter is 2.6 mm. **a** Operability in the direction of the long axis of the rectum is very good. **b** Balloon dilatation was performed after incising the stenosis by safely pulling the colonoscope from the oral side to the anal side without causing perforation.

of 1.3 mm while monitoring the performance of electrocautery (● Fig. 2a) [4,5]. Accordingly, balloon dilatation was performed at the maximum pressure after incising the stenosis at a total of eight sites. The colonoscope was pulled back from the oral to the anal side without creating complications after confirming the absence of leakage/perforation by colonog-

raphy (● Fig. 2b). As a result, a balloon 20 mm in diameter could be easily passed through the anastomosis (● Fig. 3a,b). Stoma closure is now scheduled because re-stenosis has not been observed by 1 month after the procedure.

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**Fig. 3** a, b A balloon of 20 mm in diameter was easily passed through the anastomosis and no re-stenosis has been observed at 1 month after treatment.

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