

## Endoscopic closure of a rectovaginal fistula combining *N*-2-butyl-cyanoacrylate (Histoacryl) and Resolution clips

Rectovaginal fistulas (RVFs) are abnormal communications between the anterior wall of the rectum and the posterior vaginal wall. The incidence of RVFs is relatively low; most of them are related to obstetric injury [1]. Patients complain of uncontrollable passage of gas or feces from the vagina. RVFs may be managed both medically and surgically. Endoscopic approaches with endoclip closure of gastrointestinal fistula and injection of tissue adhesive have been proposed [2], but a combined approach using both methods has not been described. We present a case of a RVF successfully treated endoscopically with *N*-2-butyl-cyanoacrylate (Histoacryl; B. Braun, Melsungen, Germany) and Resolution clips (Microvasive Endoscopy, Boston Scientific Corp., Natick, Massachusetts, USA).

A 78-year-old woman with a diagnosis of acute myeloid leukemia complained of passing stool and gas from the vagina. Having rejected surgery, she was referred to our unit, where sigmoidoscopy showed a 6-mm orifice in the anterior wall of the rectum (▶ Fig. 1).

Three Resolution clips were placed in order to appose the margins (▶ Fig. 2), and a 1 : 1 mixture (2 ml) of Histoacryl and lipiodol was injected into the internal opening and fistulous tract (▶ Figs. 3 and 4).

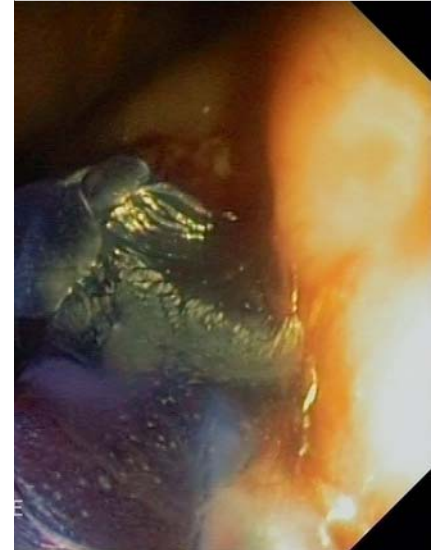
The patient had early relief of her complaints and remained asymptomatic 2 months after the procedure.

Cyanoacrylates are a class of synthetic glues that rapidly solidify upon contact with body fluids. Histoacryl is the most commonly used cyanoacrylate glue for gastrointestinal applications. It has shown to be successful in the closure of pancreatic [3], biliary [4], and gastrointestinal fistulas [5] in patients in whom conservative treatment has failed as well as in surgically high-risk patients. Mixing Histoacryl with lipiodol retards polymerization.

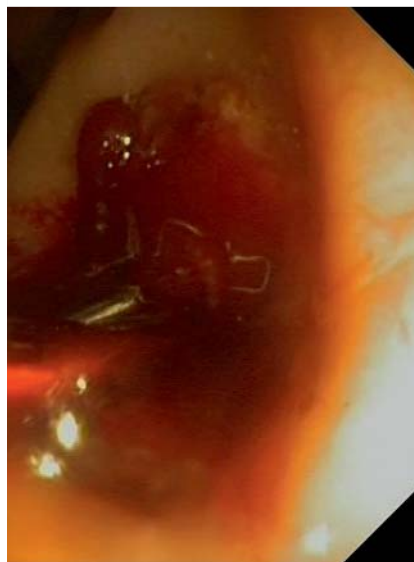
In our experience, a combined approach using Resolution clips and Histoacryl may improve the rate of technical success in the endoscopic treatment of RVFs, since clips not only work in apposing the margins, but act as a scaffold for the glue.



**Fig. 1** A 6-mm orifice in the anterior wall of the rectum.



**Fig. 3** A 1 : 1 (2 ml) mixture of Histoacryl and lipiodol was injected into the internal opening and fistulous tract.



**Fig. 2** Three Resolution clips placed in order to appose the margins of the orifice.



**Fig. 4** Appearance after injection.

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**Competing interests:** None

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## Bibliography

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