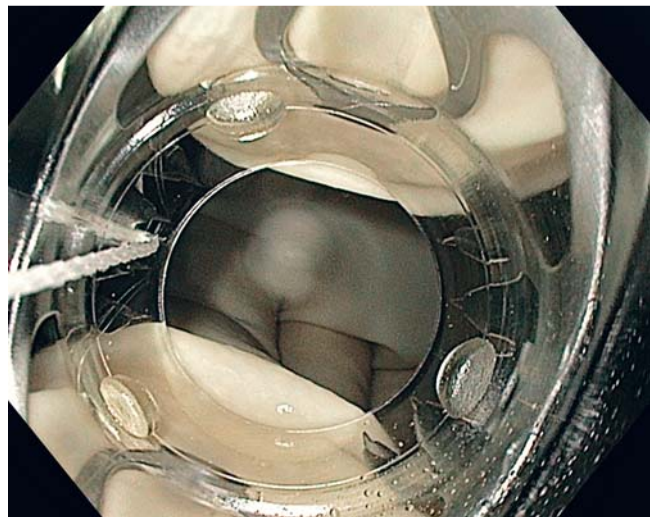


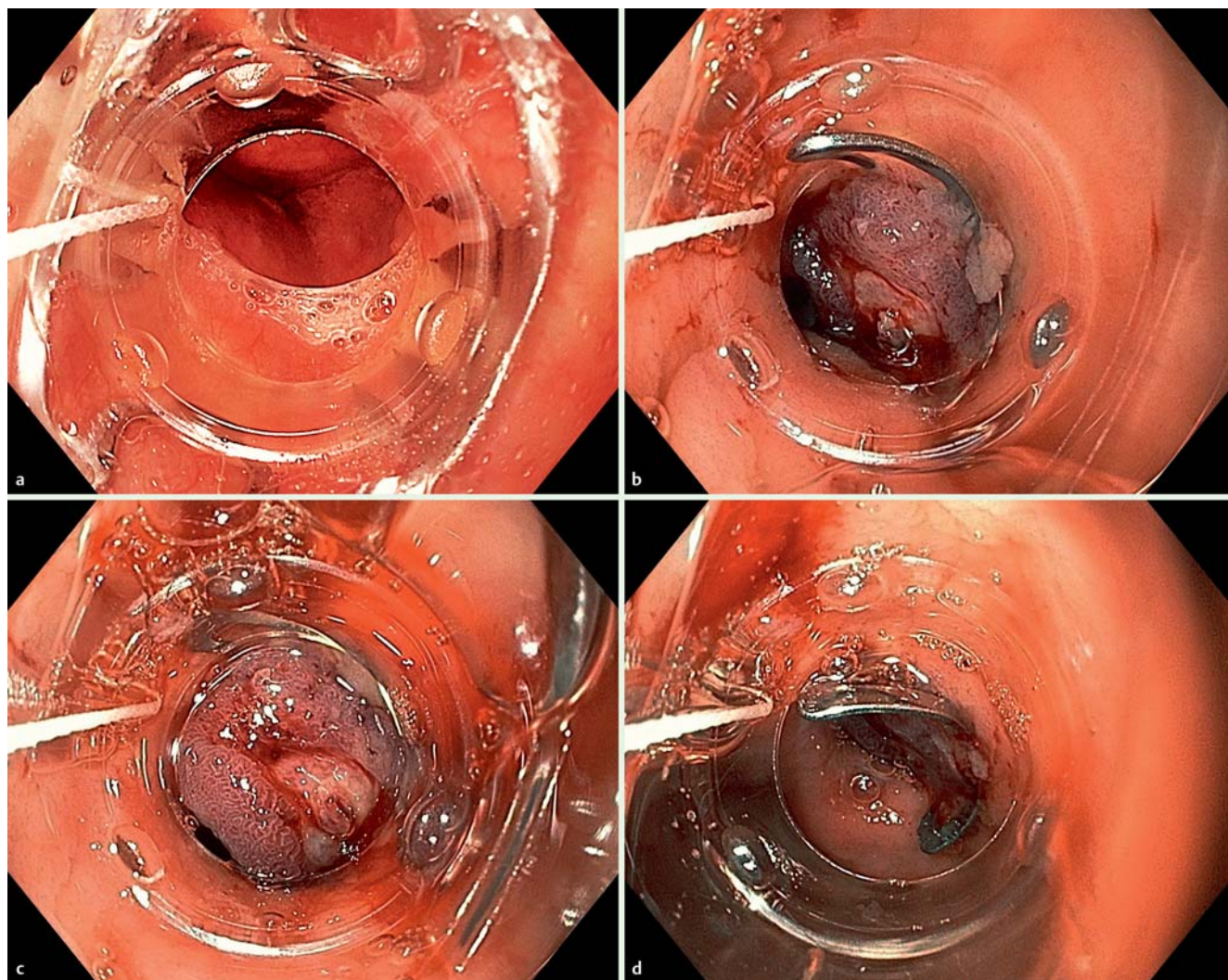
## Utility of the “bear claw”, or over-the-scope clip (OTSC) system, to provide endoscopic hemostasis for bleeding posterior duodenal ulcers



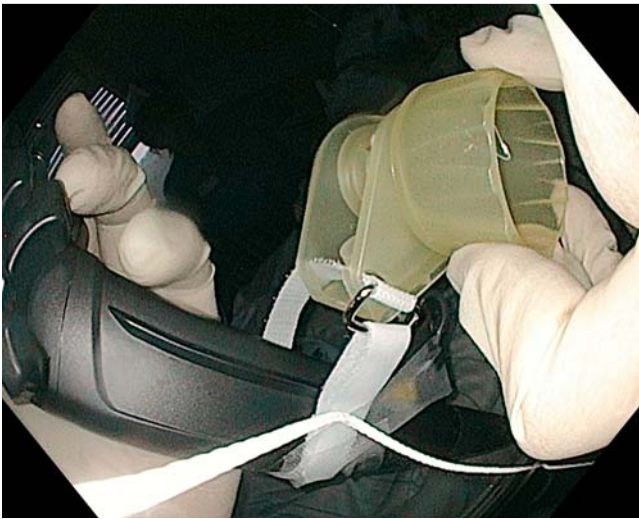
**Fig. 1** The cap with the over-the-scope clip (OTSC) is loaded onto the tip of the scope, similarly to the esophageal banding device.

The “bear claw”, or over-the-scope clip (OTSC) system (Ovesco Endoscopy, Tübingen, Germany), is an innovative clipping device made of superelastic biocompatible nitinol [1–3]. This device was developed to close wall defects of the luminal gastrointestinal tract, such as perforations, anastomotic leaks, and fistulas [1, 2]. The use of the “bear claw” in humans is still limited, but due to the excellent capabilities of the “bear claw” to close large mucosal defects, more reports on its efficacy are being published [2,3]. Here we present the use of the “bear claw” to provide hemostasis of large ulcers of the posterior duodenal wall.

Four patients (three women and one man, ages 82–90, mean age 84.5) presented with massive gastrointestinal bleeding. All of the patients had hypotension upon presentation. The patients’ hemoglobin ranged from 6 to 12 g/dL, with a mean of 9 g/dL (normal 12–18 g/dL). All patients



**Fig. 2** **a** The loaded over-the-scope clip (OTSC) system passes easily through the esophagus. **b** Location of the bleeding vessel through the cap of the OTSC. **c** An ulcer with a visible vessel is sucked into the cap with a loaded OTSC. **d** The deployed OTSC.



**Fig. 3** The handle of the scope with the over-the-scope clip (OTSC) release system.

underwent emergent esophagogastroduodenoscopy after initial fluid resuscitation. The ulcers were located in the posterior bulb and were actively oozing blood. All patients received initial therapy with injection of epinephrine–saline solution and clip placement. Despite therapy, all patients started bleeding again within 48 hours. Thus a decision was taken to place the OTSC.

The scope was removed and the OTSC system was attached, similarly to a variceal ligation device (● Fig. 1). The endoscope loaded with the OTSC cap was easily advanced through the hypopharynx and esophagus into the stomach (● Fig. 2a). The bleeding lesion was located (● Fig. 2b). The bleeding vessel was positioned in the center of the cap and constant suction was applied. This maneuver allowed for the vessel and enough tissue to be engulfed by the cap (● Fig. 2c). Once this was accomplished, the “bear claw” (OTSC) was released by turning the handle attached to the entrance to the working channel of the scope (● Fig. 3). The OTSC clip clinched enough tissue, including the visible vessel. Hemostasis was thus successfully achieved (● Fig. 2d). All patients were discharged in a stable condition.

These cases are interesting for various reasons. First, we add to the growing clinical experience using this novel device. The OTSC system is an innovative clipping device made of superelastic biocompati-

ble nitinol, which allows for the entrapment of a large amount of tissue, allowing closure of fistula holes and, as shown in these cases, achieving hemostasis [1–3]. Second, we show that the OTSC is effective for obliterating ulcers with bleeding vessels located in a difficult position (in the posterior duodenum). It is well known that these ulcers are at a higher risk and also more difficult to treat because of their awkward position [4]. In a previous study, we demonstrated that using the colonoscope allowed for targeted endoscopic therapy of these lesions, as the working channel is on the right side. Most gastroscopes have working channels on the left side, making it difficult to apply endoscopic hemostasis [4]. In addition, standard clips often fall off these lesions and induce more bleeding by lacerating the vessel. Although using a heater probe is a proven method to treat lesions similar to those presented in this case, this modality is mainly available in the USA and some Asian countries, but not in most European countries. However, using a heater probe can result in perforation [5]. Finally, we show that the placement of such a clip is very easy, resulting in potentially life-saving hemostasis.

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**Competing interests:** None

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