The way to remove an over-the-scope-clip (with video)

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To the Editor:
We read with great interest the article by Neumann et al[1] on the technique for removing the over-the-scope-clip (OTSC) in an ex vivo porcine model.
As correctly stated, a potential indication for removal of an OTSC could be its misplacement. In this regard, it is reported that a second OTSC beside the first one is not always easy to deploy and could therefore be unsuccessful. By removing the first clip, one can realistically think that it is possible to correctly deploy a further clip.[2]
Our objection is in regard to the technique. The technique proposed seems in fact not always applicable (80% of the proposed series, even in an inanimate model) because of the need to visualize the oval hole of the clip. In any case, it seems relatively complex because only two thirds of the feasible cases resulted in success. Finally, the report raises some concerns about safety because retraction of the OTSC in a closed position suggests a realistic possibility that the tissue within the jaws could get entrapped and torn, reopening the closed defect.
It is probably not well known that a characteristic of a superalloy such as nitinol is the change in stiffness at varying temperatures. Cooling nitinol below 10°C would result in an extremely weak force of the material, whatever shape still remains. At this low temperature, the material changes to its martensitic grid structure with no dimensional change but is then easily pseudo-plastic deformable, which means that one can easily change the shape while applying a low force. Application of heat again will cause the clip to automatically take up its original shape, generating the high force. Thanks to this precious characteristic, we were able to remove a misplaced OTSC in a human being with a large rectal chronic fistula (Fig. 1). As shown in the video (video 1), by submerging the clip for 1 minute with saline solution previously kept in the refrigerator at 4°C (Fig. 2), we could easily grasp a visible part of the clip frame with a conventional foreign body grasper (Fig. 3). The OTSC then offered minimal resistance, and once the previous site of deployment was inspected (Fig. 4), we could hardly see the signs of its presence by minimal tissue tears. The patient had an uneventful recovery.

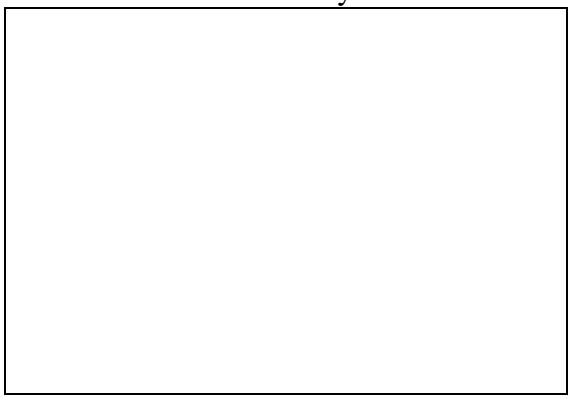

Figure 1.
Endoscopic view of the deployed over-the-scope-clip on one margin of a chronic rectal fistula.

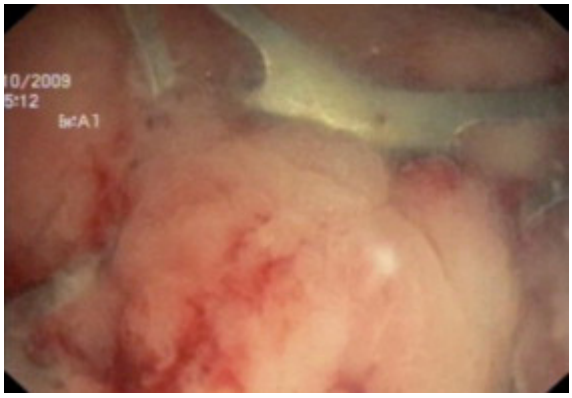

Figure 2.
Over-the-scope-clip submerged by cold saline.

Figure 3.
A visible part of the frame of the over-the-scope-clip caught with a conventional foreign body grasper.

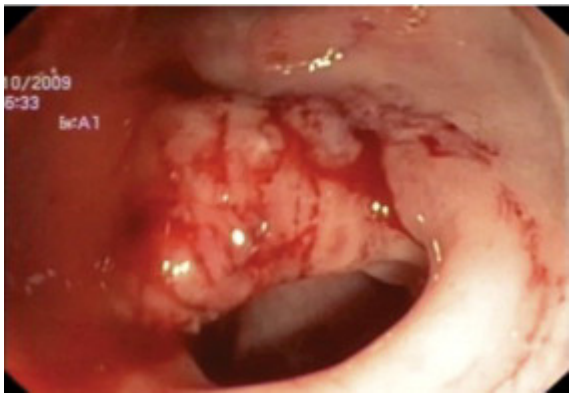

Figure 4.
Endoscopic view of the deployment site after removal of the clip, showing signs of its presence by minimal tissue tears.

The technique is therefore very simple, and although we cannot demonstrate a series, we believe it is always reproducible. In fact, just after deployment, at least one part of the OTSC is always visible to be caught by a foreign body grasper.
We believe this report may represent a useful message to all centers currently using the OTSC, and we hope it can be of some help in critical situations.

References

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2.

- 2
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