Are MR Compatible hemoclips safe after control of hemostasis?

An 82-year-old man with a medical history of hypertension and cerebrovascular disease was referred to our clinic with hema-
temesis. Laboratory findings were: hemo-
globin 8.5 g/dL (normal range 14 – 18 g/dL), white blood cells 16.1 × 10⁹/L (normal range 4 – 10 × 10⁹/L), and platelets 74× 10⁹/L (normal range 150 – 400 × 10⁹/L). He was given a transfusion of two units of packed red blood cells.

He underwent emergency endoscopy, which revealed bright red blood in the esophagus and stomach. Below the upper esophageal sphincter, a long, deep, linear laceration with an adhering blood clot was seen in the proximal esophagus (Fig. 1 a). A hemoclip (Instinct; Cook Medical Inc., Bloomington, Indiana) was applied at both edges of the laceration (Fig. 1 b). He was placed on a proton pump inhibitor infusion and kept nil per os.

His hemoglobin level subsequently stabilized at 11.6 g/dL without further transfusion. Six days later, he noticed decreased strength in his right hand. Brain magnetic resonance imaging (MRI) showed extensive cytotoxic edema within the parietal lobe indicating acute infarction in the left middle cerebral artery territory (Fig. 1 c). During the return to his hospital room, the patient started vomiting blood. Cardiopulmonary arrest occurred as a result of the sudden massive hematemesis, and the patient died. Endoscopic clipping devices have been used to achieve hemostasis of focal gastrointestinal bleeding [1]. Hemoclips will spontaneously slough off in approximate-
ly 3 – 4 weeks, but can also remain at the site of application for up to 1 year [2]. The Instinct hemoclip is a stainless steel clip that can be rotated, closed, reopened, and repositioned. It is “MR Conditional,” a safety term which indicates that the device has been demonstrated to pose no known hazards in a specified MRI environment with specified conditions of use [3]. However, we tested a closed Instinct hemoclip in the MRI scanner and it flew instantly to the magnet (Fig. 1 d).

In conclusion, it would seem from the present case that magnetically induced displacement force, torque, and vibration may cause clip migration, resulting in severe rebleeding with lethal outcome. Therefore, a high level of attention is warranted for entry to the MRI suite, even for patients who have received MR Conditional hemoclips.

Endoscopy_UCTN_Code_CPL_1AH_2AC

Competing interests: None

Mevlut Kurt1, Emrah Posul1, Vildan Tekelioğlu2, Buşten Yılmaz3, Ugur Korkmaz1, Betul Kızıldağ4

1 Department of Gastroenterology, Abant Izzet Baysal University, Faculty of Medicine, Bolu, Turkey
2 Department of Internal Medicine, Abant Izzet Baysal University, Faculty of Medicine, Bolu, Turkey
3 Department of Gastroenterology, Bolu Izzet Baysal State Hospital, Bolu, Turkey
4 Department of Radiology, Abant Izzet Baysal University, Faculty of Medicine, Bolu, Turkey

References
1 Hwang JH, Fisher DA, Ben-Menachem T et al. The role of endoscopy in the management of acute non-variceal upper GI bleeding. Gastrointest Endosc 2012; 75: 1132 – 1138
2 Technology Assessment Committee. Chutta-
i R, Barkan A et al. Endoscopic clip applica-
tion devices. Gastrointest Endoscopie 2006; 63: 746 – 750

Bibliography
DOI http://dx.doi.org/10.1055/s-0034-1377542
Endoscopy 2014; 46: E471
© Georg Thieme Verlag KG Stuttgart · New York
ISSN 0013-726X

Corresponding author
Mevlut Kurt, MD
Department of Gastroenterology
Faculty of Medicine
Abant Izzet Baysal University
PK: 14280, Golkoy
Bolu
Turkey
Fax: +90-374-2534615
dr.mevlukturt@gmail.com