

## Metallic Clips Used for Scleral Buckling: Ex Vivo Evaluation of Ferromagnetism at 1.5 T<sup>1</sup>

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MAGNETIC RESONANCE (MR) IMAGING is contraindicated in patients with certain ferromagnetic implants, devices, and materials, primarily because of the hazards associated with movement or dislodgment (1). This is particularly true for metallic implants located in sensitive areas of the body, such as in or near the eye. Therefore, we tested seven different metallic clips used for scleral buckling for the presence of ferromagnetic qualities. Scleral buckling is used to treat retinal detachment, whereby the metallic clip secures the two ends of a silicone band that is placed to provide apposition of the sclera and detached parts of the retina (2). This permits healing of a retinal tear without surgical entry into the globe (2). The following seven metallic clips were tested: single tantalum clip, double tantalum clip, and double tantalum clip, style 250 (Storz Instruments, St Louis, Mo);

and clip 250, double tantalum clip; clip 50, double tantalum clip; clip 51, single tantalum clip; and clip 52, single tantalum clip (Mira, Waltham, Mass).

The testing procedure involved placing the metallic clips on a millimeter grid in a plastic Petri dish that was positioned at the opening of the magnet bore and at the center of a 1.5-T MR system (3). The metallic clip was then rotated 90° and the procedure repeated three times. None of the clips displayed any ferromagnetism, as shown by a lack of movement during this testing.

The results demonstrate that each of the metallic clips tested is safe for patients undergoing high-field-strength MR imaging. Each of the clips tested was made of tantalum, a metal commonly used for constructing biomedical implants and devices and that has been previously observed to be a nonferromagnetic metal (4). These data effectively expand the list of metallic implants that are safe for high-field-strength MR imaging. ●

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