

MRI Image Compatibility: Diagnostic Use

Biophan Technologies is committed to the expansion of MRI for both diagnostic and interventional use, and the improvement of MRI compatibility of all medical devices and implants.

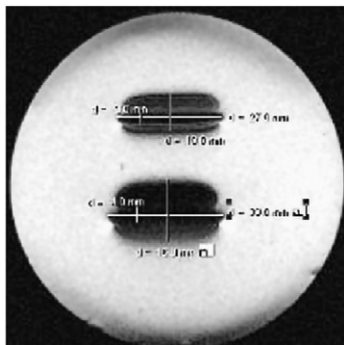
Currently, there are two issues that limit the effectiveness of some medical devices when used with MRI: MRI safety and MRI image compatibility. Biophan has technologies available to address both MRI safety and MRI image compatibility.

Effective Imaging

If a device interferes with an MRI image, it can reduce the effectiveness of performing an MRI to gather diagnostic information. Two significant examples are stents and vena cava filters. Both of these devices are MRI safe, but cannot be effectively imaged using MRI.

Stents

The image below on the left shows two standard vascular stents, imaged under MRI. Both create a significant image artifact, preventing the physician from seeing the critical area in and around the stent.

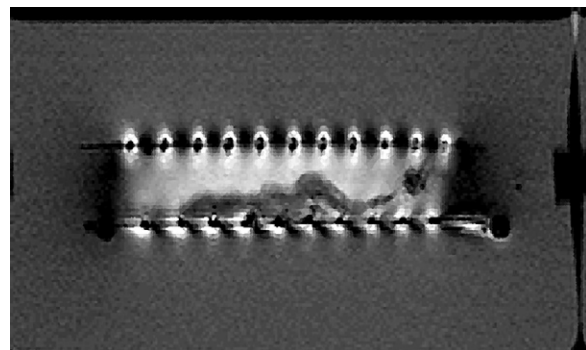


MRI image of standard stents with significant image artifacts.

The image below on the right is an MRI image of a stent incorporating Biophan's aMRIs resonator technology. This technology allows accurate imaging of a blood clot within the stent and could be used to investigate restenosis using a non-invasive MRI procedure.

Currently, accurate measurement of restenosis within a stent requires a complex and invasive catheterization procedure, for angiography or intravenous ultrasound measurement. Both current alternatives are much more costly and dangerous to the patient than a simple, non-invasive MRI scan.

Continued on reverse ▶



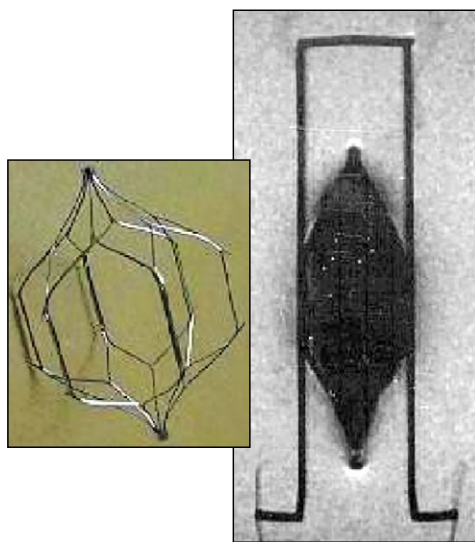
MRI image of Biophan resonator stent with accurate imaging of a blood clot within the stent.

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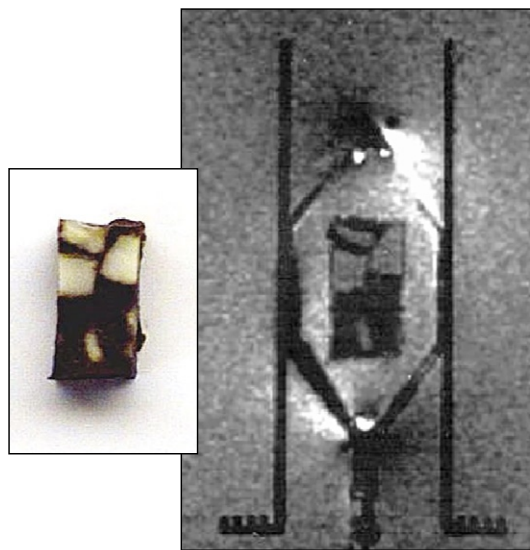
Vena Cava Filter

The image above on the left shows an MRI image of a standard vena cava filter, demonstrating the image disruption seen, and the inability to visualize within the filter. The image on the right shows a vena cava filter incorporating the Biophan aMRIs resonator technology. With the Biophan technology, a phantom with simulated blood

clot material can be effectively imaged within the filter using MRI. The ability to effectively visualize allows for a simple determination of the degree of clotting within the filter, and allows the physician to determine when it is safe to remove the filter. More accurate information will lead to better diagnoses and safer procedures for patients.



Standard Vena Cava Filter



Vena Cava with Biophan Resonant Technology

Intellectual Property

Biophan's internally developed technology and patents, in combination with exclusive license to aMRIs technology (developed at Biophan Europe GmbH) and nanomagnetic technology (developed at Nanoset LLC) provides comprehensive intellectual property coverage for Biophan's MRI image compatibility solutions. Biophan's patent estate, including assigned and licensed patents, stands at 36 issued patents, with more than 75 applications in various stages of prosecution worldwide. ■