
RSNA Press Release

MRI Improves Treatment of Deforming Birthmarks

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OAK BROOK, Ill. - Magnetic resonance (MR) guidance may improve the long-term success of treatment for low-flow vascular malformations, according to a study published in the November issue of the journal *Radiology*.

A low-flow vascular malformation is a deforming birthmark or growth consisting of enlarged veins. While the majority of vascular malformations remain stable throughout a patient's life, others worsen over time and result in disfigurement, bleeding or functional impairment. The condition can be difficult to treat because the veins are poorly defined and send small extensions into neighboring tissues that may be overlooked during standard therapy.

"Under MR imaging they're as bright as light bulbs," said study co-author Jonathan S. Lewin, M.D., formerly with the University Hospitals of Cleveland, now a professor of radiology and radiology department chair at Johns Hopkins School of Medicine in Baltimore. "Detecting and delineating these malformed veins becomes extremely simple."

The common method for treating low-flow vascular malformations is percutaneous sclerotherapy, a minimally invasive treatment in which radiologists inject a sclerosing agent into the malformation, causing the swollen veins to constrict.

While MR imaging has previously been used to diagnose vascular malformations and conduct follow-up examinations after sclerotherapy, this study demonstrated that it can be safely and effectively used during the procedure.

"We can use MR guidance to place the needle, to determine how much therapeutic mixture is needed to fill the malformation, and to monitor the therapeutic agent as it is injected," Dr. Lewin said. "The real benefit for the patient is the ability to ensure that the entire malformation is being treated."

At A Glance

- Magnetic resonance (MR) guidance improves the treatment of low-flow vascular malformations, which are birthmarks or growths consisting of enlarged veins.
- Some vascular malformations worsen over time, resulting in disfigurement, bleeding or functional impairment.
- MR-guidance allows radiologists to precisely place a needle and inject the proper amount of constricting agent into the veins to ensure that the entire malformation has been treated.

Dr. Lewin and colleagues performed MR-guided percutaneous sclerotherapy on 15 patients with low-flow vascular malformations who had been unsuccessfully treated in the past. With MR-guidance, the researchers successfully treated all predominant symptoms without complications. At follow-up, the targeted areas continued to exhibit significant shrinkage.

"Marrying the unique advantages of interventional MR imaging to current minimally invasive therapy has tremendous potential advantages in a broad array of procedures," Dr. Lewin said.

For interviews, photos or the complete study, contact RSNA Media Relations at (630) 590-7754.

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"Low-Flow Vascular Malformations: MR-guided Percutaneous Sclerotherapy in Qualitative and Quantitative Assessment of Therapy and Outcome." Collaborating with Dr. Lewin on this paper were Daniel T. Boll, M.D., and Elmar M. Merkle, M.D., of University Hospitals of Cleveland.

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