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NEWS

RSNA Press Release

Minimally Invasive Treatment Helps Infertile Couples Conceive

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At A Glance

- Embolization of testicular varicose veins in infertile men with healthy partners resulted in pregnancies among 26 percent of the couples within six months after treatment.
- Varicoceles affect 10 percent to 15 percent of adult men.
- Embolization is a minimally invasive outpatient procedure.
- Sperm movement prior to treatment of varicoceles in infertile men is a leading predictor of pregnancy after a successful embolization.

CHICAGO — Couples struggling with infertility face uncertain odds when considering various treatment options. But a new study reveals that embolization, a minimally invasive treatment for arguably the most common cause of infertility in men, can significantly improve a couple's chances for pregnancy. Furthermore, the study identified the level of sperm motility (movement) prior to treatment as a key predictor of a successful pregnancy. The findings were presented today at the annual meeting of the Radiological Society of North America.

"We found that spermatic vein embolization combined with anti-inflammatory treatment improves sperm motility and sperm count in infertile men with varicoceles," said Sebastian Flacke, M.D., assistant professor of radiology at the University of Bonn in Germany. "Six months after treatment, 26 percent of couples had achieved a pregnancy."

Normally, blood flows to the testicles and returns to the heart via a network of tiny veins that have a series of one-way valves to prevent the blood from flowing backward to the testicles. If the valves that regulate the blood flow from these veins become defective, blood does not properly circulate out of the testicles, causing swelling and a network of tangled blood vessels in the scrotum called a varicocele, or varicose vein.

Varicoceles are relatively common, affecting approximately 10 percent to 15 percent of the adult male population in the United States. According to the National Institutes of Health, most cases occur in young men between the ages of 15 and 25. Many varicoceles cause no symptoms and are harmless. But sometimes a varicocele can cause pain, shrinkage or fertility problems.

Varicoceles have long been regarded as key contributors to infertility in men. Common belief held that the warm blood pooling in the varicocele increased scrotum temperature and

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reduced sperm count and motility. However, some recent studies have argued that varicoceles are not a factor and that treating them will not increase male fertility.

The traditional treatment for problematic varicoceles has been open surgery, but recently varicocele embolization has emerged as a minimally invasive outpatient alternative. In the procedure, an interventional radiologist inserts a small catheter through a nick in the skin at the groin and uses x-ray guidance to steer it into the varicocele. A tiny platinum coil and a few milliliters of a sclerosing agent to ensure the occlusion of the gonadic vein are then inserted through the catheter. Recovery time is minimal, and patients typically can return to work the next day.

Dr. Flacke and colleagues set out to identify predictors of pregnancy after embolization of varicoceles in infertile men. The study included 223 infertile men, ages 18-50, with at least one varicocele. All of the men had healthy partners with whom they were trying to achieve a pregnancy.

In the study, 226 of the patients' 228 varicoceles were successfully treated with embolization. Anti-inflammatory treatment and hormone substitution was initiated if required. A semen analysis performed on 173 patients three months after the procedure showed that on average, sperm motility and sperm count had significantly improved. Six months later, 45 couples, or 26 percent, reported a pregnancy. A high level of sperm motility before the procedure was identified as the only significant pre-treatment factor associated with increasing the odds of successful post-treatment pregnancy.

"This study confirms that varicocele repair can significantly improve sperm count and motility," Dr. Flacke said.

Co-authors of the paper are Hans H. Schild, M.D., Attila Kovacs, M.D., Michael Schuster, M.D., Holger M. Strunk, M.D., and Gerhard Haidl, M.D.

Abstract:	• Pre-treatment Sperm Motility Predicts Pregnancy after Embolization of Varicoceles in Infertile Man

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