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Cancer Advances: Technique Enables Previously Sterile Adult Survivors of Childhood Cancer to Father Children

Posted online March 14, 2011 on www.jco.org [1].

A new study has shown that a surgical technique can effectively locate and extract viable sperm in more than one-third of adult survivors of childhood cancer, who were previously considered sterile due to prior chemotherapy. Many of these men were subsequently able to have children with the help of in vitro fertilization, and the results offer a proven option for many male cancer survivors who want to be fathers but were thought infertile.

Chemotherapy treatment during childhood or adolescence has traditionally been assumed to cause infertility among males. While some adult male survivors of childhood cancer will eventually regain their fertility several years later, as many as two-thirds will be permanently left with very low sperm counts.

In this study, a procedure called microdissection testicular sperm extraction was performed between 1995 and 2009 on 892 men with such extremely low sperm counts, including 73 cancer patients who had undergone chemotherapy an average of 19 years earlier. This procedure can identify small areas within the testicles where sperm are produced, even in testicles that have been severely damaged by chemotherapy.

The researchers retrieved sperm in 37 percent of the male cancer survivors in the study; they found that the ability to find viable sperm differed according to the type of chemotherapy the men had received years earlier. The procedure was more successful in men treated with platinum chemotherapy drugs (which are used to treat diseases like testicular cancer) than in those treated with alkylating agents (often used to treat diseases like lymphoma and sarcoma). The investigators subsequently used an in vitro fertilization technique to fertilize an egg with a single sperm. This process resulted in slightly more than a 57 percent fertilization rate, a pregnancy rate of 50 percent, and the births of 20 healthy children.

The authors believe this is the largest study to date on microdissection and in vitro fertilization procedures among male survivors of childhood cancer who were previously treated with chemotherapy.

Although sperm banking - freezing and preserving sperm prior to chemotherapy for later use -remains a good choice for many adolescents and men who wish to father children later in life, it is underused. The investigators recommend that doctors suggest sperm banking to all men before starting cancer treatment. In addition, male cancer survivors who have had chemotherapy may also become fathers through adoption and the use of sperm donors.

What This Means for Patients

Researchers have shown that infertility treatments, including surgery to find and remove sperm, can help restore fertility to many male childhood and adolescent cancer survivors who were thought to be unable to have children due to prior chemotherapy.The findings provide another potential option - in addition to using banked sperm, sperm donors and adoption - for many men who wish to experience parenthood.

Helpful Links

Late Effects of Childhood Cancer [2]

Fertility and Cancer Treatment [3]

What to Know: ASCO's Guideline on Fertility Preservation [4]

Links:
[1] http://www.jco.org/
[2] http://www.cancer.net/patient/All+About+Cancer/Cancer.Net+Feature+Articles/After+Treatment+and+Survivorship/Late+Effects+of+Childhood+Cancer
[3] http://www.cancer.net/patient/Coping/Emotional+and+Physical+Matters/Sexual+and+Reproductive+Health/Fertility+and+Cancer+Treatment
[4] http://www.cancer.net/patient/Publications+and+Resources/What+to+Know%3A+ASCO%27s+Guidelines/What+to+Know%3A+ASCO%27s+Guideline+on+Fertility+Preservation