Pioneering cancer care gives baby chance of fatherhood

Treatment freezes then returns sperm stem cells if chemotherapy leaves boy infertile

EXCLUSIVE

HELEN MCARDLE

A ONE-YEAR-OLD boy has become the youngest person in Scotland to have part of his testicle removed and frozen after chemotherapy threatened to destroy his ability to have children.

The cutting-edge research being spearheaded at Edinburgh University has so far treated seven pre-pubescent boys up to the age of 14 since launching in 2016, but the child is the youngest patient to date.

Scientists hope that advances in technology will enable them to harvest sperm stem cells from the tissue in future and transplant either these, or the whole testicle sample, back into the boy's genitals once he is an adult to restore fertility. A third option could be growing sperm from the stem cells in the laboratory.

The process has been demonstrated successfully in mice, but not yet in humans.

Dr Rod Mitchell, a consultant paediatric endocrinologist who is heading up the research at the Centre for Reproductive Health in Edinburgh, said: "The tissue is being stored for them to use. But at the moment we don't know how we would make that happen. That's what the research is about."

Most of the boys had been diagnosed with cancer, but the procedure is also being offered to patients with other illnesses requiring chemotherapy or radiotherapy. Anything from 10 to 50 per cent of a testicle is removed.

Adult males and older teenage boys can easily provide sperm samples to be frozen, younger boys and infants have only stem cells of sperm, which can be destroyed during chemotherapy and radiotherapy, leaving them infertile.

While the majority of children and young people will suffer no long-term reproductive difficulties, the researchers want to see fertility preservation offered routinely on the NHS to boys and girls undergoing aggressive treatments which put them at higher risk of infertility.

In girls this can mean removing and freezing part of an ovary – a technique pioneered in Edinburgh in 1994 – or in adolescents, using hormones to generate egg production.

Adult cancer patients of reproductive age are already automatically referred to NHS IVF clinics where sperm and egg samples can be taken and stored, but provision for under-18s is patchy throughout the UK.

The situation was highlighted at the first UK Fertility Preservation Annual Meeting in Edinburgh.

Dr Mitchell said awareness of the service among oncologists and clinicians was high in the Lothians region, but poor elsewhere in Scotland.

He said: "There are some places as well where I think they don't realise this treatment is available. That is one of our biggest aims – to let more people know about it."

Professor Richard Anderson, who is chairing a Scottish Government working group examining how to improve fertility preservation for young cancer patients, said there was "no question" it would be extended on NHS Scotland to children and teenagers. He added: "The question is just who gets it and how we fund it."

OPINION

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