

Nine-year-old brain tumour patient has testicular tissue frozen

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NHS and Oxford University medics have carried out an operation on a nine-year-old boy with a brain tumour to preserve some of his testicular tissue. Nathan Crawford has become the first boy in the UK to have the operation, with the hope he can have children later in life.

The nine-year-old from Bude, Cornwall, has had radiotherapy and chemotherapy to shrink an inoperable tumour but the treatment could leave him infertile.

So a team at the John Radcliffe Hospital carried out the new procedure, developed by Oxford University researchers. They removed a wedge of testicular tissue and have frozen it. The aim is to one day re-implant it into Nathan.

If the re-implantation is successful, Nathan will have a good chance of becoming a father.

Nathan has a type of tumour called a glioma, which develops from the glial cells that support the nerve cells of the brain.

His tumour is so close to vital brain tissue that surgeons are unable to remove it without causing serious damage to important brain functions.

Nathan has undergone a course of radiotherapy and is currently having a second round of chemotherapy with the aim of shrinking the tumour.

Before he started chemotherapy, his family, who live in Bude, Cornwall, were offered the chance of testicular tissue freezing thanks to pioneering work in Oxford.

During keyhole surgery, which was carried out under general anaesthetic and lasted 20 to 30 minutes, surgeons removed a wedge of testicular tissue from one of Nathan's testes.

This sample contains sperm stem cells, which remain viable when slow-frozen within the small amount of testicular tissue.

Stepfather Jonathan Alison, 34, said the family first noticed something was wrong with science-mad Nathan in late January: 'Nathan was having more headaches than you would expect and also had blurry vision, which we initially put down to too much time on the games console or possibly problems with his eyesight.

'We took him to the opticians who sent us straight to the doctor. We were then sent up to Bristol Royal Hospital for Children where Nathan underwent an operation within days to remove some of the fluid in his brain.

'He also needed a second procedure to biopsy the tumour. We have been told the tumour is non-cancerous and is grade two. With this type of tumour, as a child gets older it will quite often grow. It could cause damage that could be life-threatening.

'Obviously we had been putting this down to possible problems with his eyesight so to be told it was a tumour was very hard.'

Mr Alison said he and Nathan's mother Donna Hunt, 31, have explained the tumour to Nathan and how the procedure to store testicular tissue might help him in later life.

'Nathan loves children and so we told him this would increase the chances he can have his own children,' he said.

Ms Hunt said: 'Our decision-making process regarding whether Nathan should have chemotherapy was made so much easier thanks to the fact Oxford could offer this storage of Nathan's cells.'

Mr Alison, who has a daughter called Phoebe from a previous relationship and two-year-old son Ned with Ms Hunt, said Nathan is now on his second cycle of chemotherapy: 'He's coped really well and hasn't suffered too much from side-effects, just some jaw ache and a bit of sickness.

'He loves riding his bike and scooter and he's very into science. He loves to see how things are made and loves learning about everything around him.

'He's very much looking forward to Christmas and we couldn't be prouder of the way he has taken it all in his stride.

'Once he'd been up to Oxford to have the testicular tissue removed, he was back home in Cornwall within 48 hours eating fish and chips with us.'

Dr Sheila Lane, a consultant paediatric oncologist at the John Radcliffe who is clinical lead for tissue cryopreservation at the hospital, said the new technique had been shown to work in animal models.

Dr Lane said: 'During the procedure, you take what looks like an orange segment out to divide into small parts, which then get frozen. You are storing the tissue which contains the stem cells.

'What happens when you put this tissue back (at a later date) is that it

generates its own blood supply and starts producing normal hormones, which restores fertility.'

She said Nathan's [tumour](#) was inoperable and chemotherapy and radiotherapy are the only options for shrinking it.

But she added: 'These tumours can possibly be cured with intensive [chemotherapy](#). Patients can have a long and happy life without any problems.'

Provided by University of Oxford

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