

# Teamwork

*A very rare instance of rhabdomyosarcoma spurred a broad and collaborative head and neck cancer team to produce outstanding results at Macquarie University Hospital*

**A**t the age of 22, Luke Thurbon of Canberra found himself diagnosed with a very rare cancer – rhabdomyosarcoma, a soft tissue cancer, located in the lower left jaw.

“Initially, I thought it was just a toothache,” Mr Thurbon said. “I had swelling in the left mandible, and then pain and numbness around the chin and lip. Eventually, I could feel a lump under the skin.”

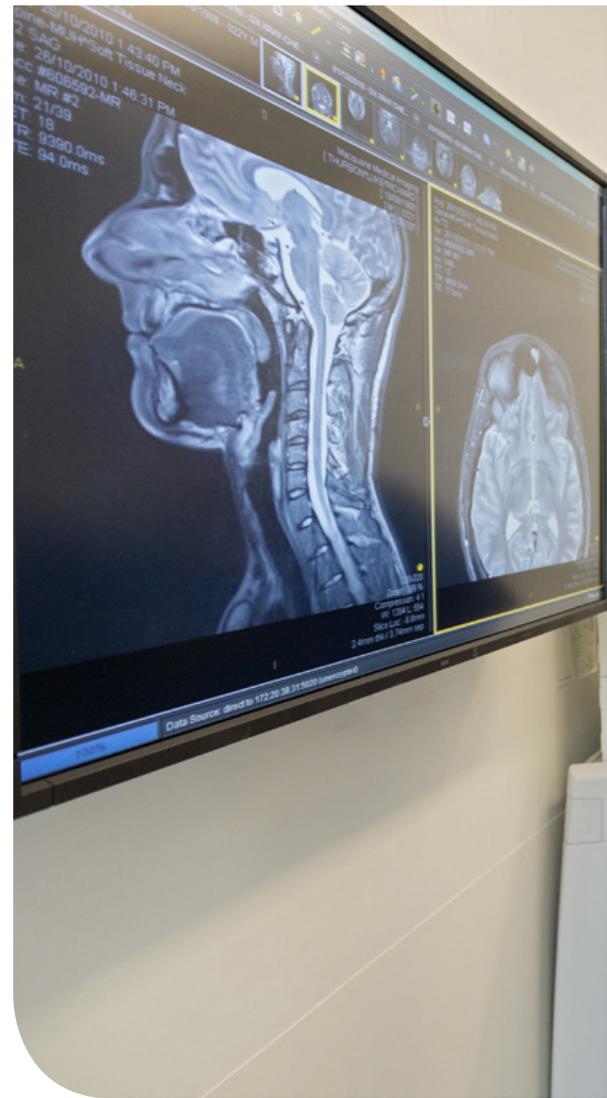
A biopsy, MRI, CT and PET scan confirmed a sarcoma, while further consultation with specialists confirmed it as rhabdomyosarcoma, a fairly rare form of cancer most commonly found in children, and very infrequently found in adults.

Mr Thurbon was ultimately referred to Macquarie University Hospital for the operation to remove the sarcoma. Dr Peter Vickers, head of Oral and Maxillofacial Surgery at Macquarie University Hospital, and Associate Professor Anand Deva, head of the Department of Cosmetic and Plastic Surgery at Macquarie University Hospital, both worked together to perform the procedure.

“Significant planning involving a large team preceded the surgery,” Dr Vickers explained. “Plastic surgeons, ENT specialists and the maxillofacial team collaborated on the best way to proceed.”

Dr Stephen Cooper, radiation oncologist based at Macquarie University Hospital, was also involved. Macquarie Medical Imaging assisted with high-resolution imagery to accurately delineate the sarcoma.

The 12-hour procedure involved a mandibulectomy (a resection of part of the lower jaw) and a radical neck dissection, immediately followed by microsurgical reconstruction of the lower jaw.



“This was major surgery where Luke lost around half of his lower jaw,” Dr Vickers said. “It also required a meticulous dissection of lymph glands of the neck to ensure complete clearance of the rhabdomyosarcoma.”

Assoc Professor Deva used a fibula ‘free-flap’ technique in reconstructing the jaw. After dissecting out the fibula bone from the lower leg – along with attached skin, muscle, arteries and veins – the bone was recontoured to fit in the lower jaw and secured in place with a titanium reconstruction plate and screws. Assoc Professor Deva performed the microsurgery required to re-connect arteries and veins supplying the block of tissue to recipient vessels in the neck.

“The fibula is a suitable bone for this procedure, not only because it’s a ‘spare’ bone in the leg but also because it is similar to the mandibular bone in density and can be recontoured from a straight line into a gentle curve to match the missing jawbone,” Assoc Professor Deva said. “The patient can lose the fibula in the lower limb with no long-term adverse effects on their mobility.”

Mr Thurbon spent three weeks at Macquarie University Hospital, where additional members of his medical team assisted with his care.



Dr Peter Vickers, Associate Professor Anand Deva and Dr Stephen Cooper collaborated to perform intricate head and neck surgery

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Speech pathologists, nursing staff and hospitality staff were all part of his superior comprehensive cancer care at Macquarie University Hospital.

“The large number of staff that assisted me was amazing,” he said. “And the environment at the hospital is such that it doesn’t feel like a hospital. It is quiet, new and comfortable, and I had a room to myself.”

After recovering from the mandibulectomy, Mr Thurbon underwent six weeks of radiation therapy at Macquarie University Hospital in conjunction with an eight-month chemotherapy schedule based in Canberra, where he lives. Less than a year later, Mr Thurbon said he’s just about back to full fitness. In the current secondary phase of his treatment, Mr Thurbon is continuing to have fat transfer surgery at Macquarie University Hospital in a staged filling of the portion of his face to provide an

improved soft tissue contour. Three-staged fat transfer procedures will see fat cells harvested from elsewhere in the body relocated to the jaw, ultimately re-generating soft tissue that has atrophied as a result of his radiation treatment.

“The beauty of this approach using Luke’s own cells is that once the fat takes, it will provide a permanent correction of his soft tissue deficit,” Assoc Professor Deva said. “Fat is becoming increasingly recognised as the ideal soft tissue filler for both reconstructive and aesthetic indications and could potentially be a source of stem cells for wider application.

“Luke will also have teeth replacement, as he lost nine in total. While he will use dentures in the near term, these will eventually be replaced by implants. All in all, it’s a multi-stage process, but one that is showing outstanding results.” PH

*By Dr Andrea Lewis*