

SCIENCE

Helping patients who lose sight to see through new eyes

Eye prostheses boost their self-confidence and enable them to lead lives normally

Clara Chong

Cheerful, bubbly and with a love for the playground, 10-year-old Claire Lim is like any other child but for one difference – her left “eye” occasionally drops out.

She then takes it home to let her parents pop it back into her eye socket.

Born with microphthalmia, a rare disorder in which one or both eyes are abnormally small and dysfunctional, Claire receives a new eye prosthesis once every

five years.

Claire had a rare condition known as persistent hyperplastic primary vitreous – a sporadic developmental abnormality that typically happens in only one eye, said Dr Gangadhara Sundar, head and senior consultant of Orbit and Oculofacial Surgery in the Department of Ophthalmology at the National University Hospital (NUH), who is one of her doctors.

Claire’s condition was advanced by the time she went to NUH as she was already five, and salvaging her vision was a difficult mission, Dr Sundar said.



National University Hospital ocularist Suriya Abu Waled checking Claire Lim's eye prosthesis at her clinic in the NUH Medical Centre last Friday. Claire, 10, was born with one eye abnormally small and dysfunctional. ST PHOTO: GAVIN FOO

By then, Claire had already experienced retinal detachment, a condition where the retina at the back of the eye pulls away from the layer of blood vessels that provides it with oxygen and nutrients.

Because Claire had an in-turned left eye, doctors offered to fit her with an “artificial eye” to make her look normal, boosting her self-esteem and ensuring social acceptability when she went to school, Dr Sundar added.

Since she did not have her original eye and cornea removed, she

would feel pain and be unable to tolerate a prosthesis as the cornea is sensitive. Hence, doctors had to perform surgery to use Claire’s own tissue to cover her cornea.

Upon recovery, a prosthesis was then fitted comfortably, Dr Sundar said.

Claire had her first prosthesis fitted in 2015, which she took to very well, and her second one this year.

An eye prosthesis typically takes three to four working days to make.

Ms Suriya Abu Waled, the only oc-

ularist in NUH, has made eye prostheses for more than 200 patients in the last 14 years.

Her patients include children who are born without eyes as well as children and adults who have lost their eyes due to cancer, severe injuries and failed surgery.

Each new prosthesis costs around \$2,000 after subsidies and needs to be changed around once every five years.

To make an eye prosthesis, an impression first needs to be taken to determine the capacity of the eye

socket. Then a wax model is made to account for eye movements, such as when the patient is looking right or left.

Armed with a set of acrylic paints, Ms Suriya paints the prosthesis. It has to be left to dry for around two hours.

A transparent layer is then applied to form a coat on top of the prosthesis after the paint has dried.

The prosthesis then undergoes a final polish to ensure that there are no sharp edges before it is given to the patient.

The 49-year-old ocularist, who sees around 15 new patients a year, said: “I love the job because I can help patients regain their confidence and allow them to lead their normal lives.”

Patients who have suffered from eye trauma, diseases and conditions such as retinoblastoma – a rare form of cancer that rapidly develops from the immature cells of a retina – and require enucleation (eye removal) as part of their treatment visit Ms Suriya. They are as young as 18 months or as old as 85.

Other than helping patients look socially acceptable, an eye prosthesis is also important as it helps to hold the structure of the eye and prevent it from shrinking and becoming droopy.

Fitting the prosthesis for the first time was both a painful and uncomfortable experience, Claire told The Straits Times last Friday. “It was pretty painful when Ms Suriya first put the eye in, but a few hours later, the pain faded away,” she said.

These days, Claire barely notices her prosthesis, and apart from needing eye drops three times a day, the energetic girl can continue to do what she loves – cycling, skipping and having fun in the playground.

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