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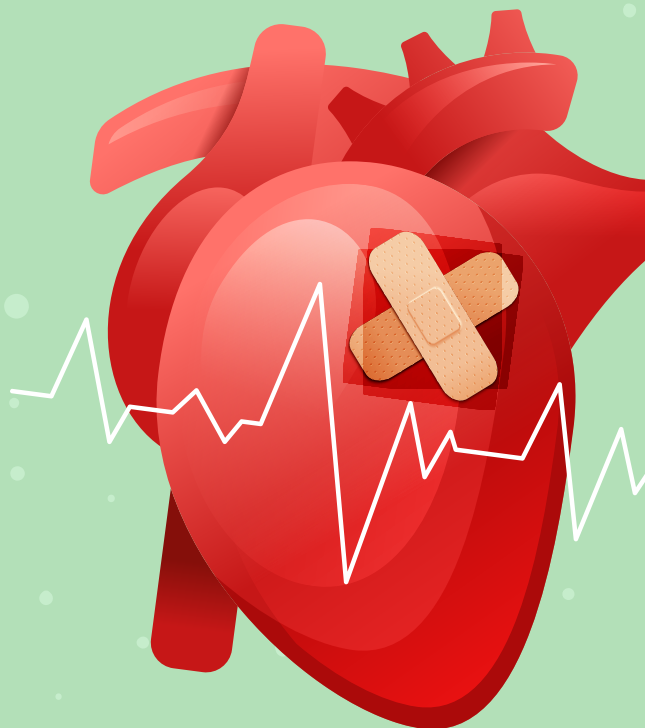
The Steady Hands *of Surgery*

Correcting Complicated Heart Defects

How complex is it to perform cardiac surgery on both children and adults?

My team and I have carried out operations on newborn children as early as their first day of life, and geriatric patients who have recently been diagnosed with congenital heart defects (CHD). Depending on the complexity of the defect or how weak and malnourished the patient may be, or if it was a newborn baby with a severe defect, our team will resort to palliative care to help improve the patient's condition.

We use palliative procedures to temporarily make their condition more livable. This applies to patients of any age, who want to live without pain and fear of fatality. This would happen if the child has nutritional issues, the defect is too severe to operate on now, or the child displays other co-morbidities. Once they are old enough to undergo corrective surgery, we minimise the risk of repeating any invasive procedures in order to adapt to the child's growing body.



How do you prepare yourself for such a complicated surgery, both mentally and emotionally?

Carrying out complex operations on congenital heart lesions is a team effort. It is not one person at the center, but many. Of course the surgeon must take the lead but the overall management of the patient is a combined skill and effort by the cardiologist, the anaesthetist and the perfusionist who runs the cardio pulmonary bypass machine. It is a tool that helps carry out the function of the heart and lungs for the patient while we are performing open-heart surgery on the patient.

They are our closest ally, as we need to constantly discuss what we need to do to minimise risk for the patient, like what kind of blood flow or heart temperature needs to be maintained for the patient's health during the procedure. Additionally, the follow-up care after a complicated corrective surgery is crucial for the patient's long-term health. The services and medical decisions are carried out by our intensivist, a critical care physician as well as a number of staffs who administrate patient care. It is not one, but an entire team working on a single patient.

What are the risks involved in complex paediatric cardiac surgery, and how do you circumvent them?

We develop risk scores for different surgeries by examining a number of patients with similar key clinical and lifestyle indicators and validate this against family history data, which could help predict future outcomes. In other words, this means that patients are divided into different risk categories based on their clinical and lifestyle traits.

That is why we are constantly re-examining the patient's diagnosis and all our available options and facilities for treatment, before we begin correcting any complex congenital heart lesion. Everything is brought to the drawing table, where we meet with the cardiologist, surgeon and intensivist to ascertain what exactly the child is going through and what the optimum surgical procedure must be. Once the decision is made and the child is brought in for surgery, we reconfirm the patient's diagnosis and debrief the team on the procedure that will be carried out. We always prepare a plan on what we can expect after the child comes off anaesthesia and the sort of support they would require.

95% of the time all surgeries go according to plan. There may be surprises the other 5% of the time but they are often quite minor and we can avoid that with this process of reconfirming our diagnosis and equipment. It is the best thing to do when a team needs to be certain and minimise all risks.

Where a sick child might not have survived a surgery in the past, patients can now be assured that their heart function will stay supported by these machines. We not only support their condition, but improve them so that the congenital heart defect does not adversely affect them over time