

Doctors in Kochi Reconstruct Breast Bone of Infant Using 3D Printing

 manufactur3dmag.com/doctors-in-kochi-reconstruct-breast-bone-of-infant-using-3d-printing

MANUFACTUR3D

August 14,
2019



Above: Image used for representation purpose only

A team of doctors in Kochi has carried out a rare surgical procedure using 3D printing technology to give new lease of life to an infant who was born without a sternum or breast bone – a rare condition known as complete cleft sternum. The doctors made use of 3D model to perform the complex surgery several times and then used titanium to print the implant that was fixed in place in the body of the infant during the surgery.

The Case

Athmika, a nine-month-old infant was born without a breast bone or sternum which protects the heart, major blood vessels and lungs from injury. Born with this rare condition, the mother of Athmika was scared as she could see her daughter's heart beating.

“With no bone covering the front of the chest, we could see her heart beating. She appeared so fragile that we were scared to even put her down, lest she hurts herself. We were even scared to bathe her,” said Reshmi, the mother of the infant when speaking to the Times of India.

How 3D Printing Helped Doctors Perform the Rare Surgery?

A team of doctors from the Amrita Institute of Medical Sciences (AIMS) developed a virtual 3D model of the child's chest wall and printed the ribs of the exact size of the rib that needed to be fixed in the body. "Before performing the surgery on the child, we performed surgery several times on the 3D model. In the 20-cm chest wall, defect was on a 5-cm area", said Dr. Sundeep Prabhakaran, senior plastic surgeon at AIMS.

The doctors later used titanium to 3D print the implant which was sterilized and fixed in place during the surgery. Speaking about the use of the 3D printing technology in the hospital, Dr. Prabhakaran said, "This is probably the first time that 3D printing was used to perform such a surgery in India".

The complex surgery that involved the use of 3D printing technology was successfully performed on July 25 and was funded with the help of Child Health Foundation and through crowdfunding. The surgery has been highly successful as the condition of Athmika has improved and her mother Reshmi can now hold Athmika freely or without fear of injuring her daughter's heart.
