

# HEALTHY HEART

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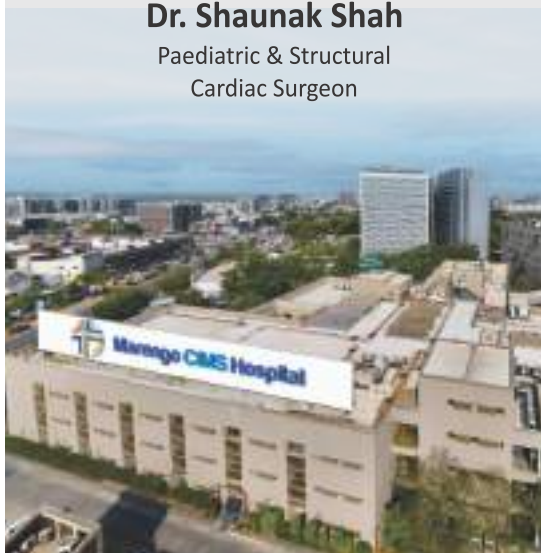


### Honorary Editor :



**Dr. Shaunak Shah**

Paediatric & Structural  
Cardiac Surgeon



## Vertical Right Axillary Thoracotomy - A Different Window to Heart

One of the frequent question asked when you explain the need of surgery to parents of child with congenital Heart Disease (CHD) is: Sir, are you going to do it with Laser? Or Computer?

Traditionally, Open Heart Surgery needs a proper front incision, known as Median Sternotomy. Of late, however, Minimally Invasive Cardiac Surgery (MICS) has become an alternative approach for Coronary Artery Bypass Grafting (CABG), Valve replacement & Simple CHD Surgery like Atrial Septal Defect (ASD) closure. With new technology, instruments & cannulae, MICS has become commonplace with use of peripheral cannulation for conduct of Cardiopulmonary Bypass (CPB).

But what about a 4-5 year old Child with weight of 10 to 20 kg? As a rule of thumb, the chances of complication of peripheral cannulation increase if the patient weight is less, Of course, the new generation cannula have reduced

incidence of complications but these cannulae are very expensive & increase the cost of cardiac surgery manifold, the complications are not completely absent.

An alternative, cosmetically appealing approach is Vertical Right Axillary Thoracotomy (VRAT). The advantages of the approach are:

1. No incision in front of chest & possible ugly scarring in future
2. Psychological advantage
3. No requirement of fancy cannulae & equipment
4. Safe & reproducible
5. The scar is hidden in axillary fold on standing
6. No additional cut the groin or in the neck.

In this communication, we wish to share our early experience of this approach for surgical correction of Atrial Septal Defect (ASD) in children at Marengo CIMS Hospital, Ahmedabad.

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24), 5 children with Ostium Secundum ASD, with absent margins underwent Open Heart Surgery with patch closure of ASD at our hospital, using this approach. The age range was 3 to 8 years & weight was 15-38 kg.

After anesthesia & invasive lines insertion, the child was put in modified left lateral decubitus position with right arm elevated. The incisions were marked with the patient in supine position only. A 6 cm vertical incision was put in the right axilla.



Subcutaneous tissue was dissected. Chest was entered through the 4th intercostal space. Pericardium was opened 2 cm anterior to phrenic nerve & stays were placed. Retraction suture on Right atrial appendage helps in retracting aorta.

After heparinization, cardiopulmonary bypass was instituted with routine aortic & bicaval cannulation. Aorta was cross clamped & cold blood cardioplegia was run through aorta the right atrium was opened & stays were placed. With patch, ASD closure was done. RA closure was done. Weaning from cardiopulmonary bypass was done with Trans Esophageal Echo Cardiography (TEE) guidance. Decannulation was done protamine was given. Pericardium was loosely approximated & thoracotomy wound closure was done.

### Result:-

All Patients were extubated within 4 hours of operation. None required re-exploration or blood transfusion. Average ICU stay was 1 day & average hospital stay was 4 days. Photographs here shows the incision at time of discharge. (Permission taken from relatives)

### The advantages of V.R.A.T (Fig. 2 & 3)

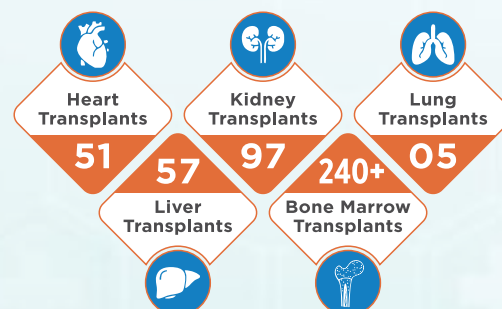
1. Cosmetically superior incision.
2. No need for any extra instruments or Cannulae
3. No chance of injury to femoral vessels because entire cannulation is central.

### Conclusion

Vertical Right Axillary Thoracotomy for closure of right sided congenital heart disease is an attractive, reproducible method. With more experience, we should be able to offer it for more cases.

Acknowledgment: I thank Dr. Amit Chandan for technical help.

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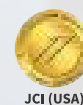
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