



# VIDEO ASSISTED THORACOSCOPIC RIGHT ANTERIOR MINI THORACOTOMY FOR CLOSURE OF ATRIAL SEPTAL DEFECT

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Closure of Atrial Septal Defect (ASD) has been performed for the past five decades through conventional midline sternotomy. Since the last two decades, cardiologists have been performing Device closure of ASD with excellent results. If the defect has a good rim, and is of reasonable size, device closure is still the best corrective procedure we can offer to the patients. The only disadvantage is its high cost.

With the advent of minimally invasive cardiac surgery, surgeons have been performing this procedure through thoracotomy - anterior, lateral or posterior, and trying to hide the incision. Though this has produced good results, the postoperative pain due to injury to intercostal nerves has been well documented. Hence we have started using a mini anterior right thoracotomy approach, entering the chest through the fourth intercostal space in the region of costal cartilages. We have performed this on children, and adults- both males and females with excellent results.

## TECHNIQUE

Along a right anterior submammary incision, pleura is entered through the fourth intercostal space and the pericardium is opened. The pericardial stays are cradled in such a way that the heart is pulled to the surface as much as possible.



A femoral arterial cannulation is performed. Separate venacaval cannulation is done. Cardioplegia cannula is inserted into the ascending aorta and normothermic CPB is instituted. Aortic cross clamp is introduced through a stab in the right second intercostal space. RA is opened after warm blood cardioplegic arrest and ASD closure is performed. The patient is weaned off CPB as usual and the chest is closed over two drains and a temporary epicardial ventricular pacing wire. No pericostal sutures need be applied.

## DISCUSSION

Since there are no sutures going through the intercostal spaces and there is no risk of injury to the intercostals nerves, post op pain is negligible in such patients. As the incision is submammary and medial, there is no injury to the breast tissues too and the cosmesis is at its best.



The video assisted thoracoscopy (VAT) device is of help, especially in visualizing the venacavae and the ASD. This procedure is recommended for cosmesis and for fast tracking in cardiac surgery. The patient is mobilized from day one onwards and can be discharged on the fifth postoperative day itself.