

PECTUS EXCAVATUM: A CASE REPORT OF AN EARLY REPAIR

Cardiothoracic

Dr. Priyadarshan Konar	Department of Cardiothoracic and Vascular surgery, IPGMER and SSKM hospital, Kolkata.
Dr. Subhendu Mahapatra	Department of Cardiothoracic and Vascular surgery, IPGMER and SSKM hospital, Kolkata.
Dr. Jayita Chakrabarti	Department of Cardiothoracic and Vascular surgery, IPGMER and SSKM hospital, Kolkata.
Prof. Dr. Gautam Sengupta*	Department of Cardiothoracic and Vascular surgery, IPGMER and SSKM hospital, Kolkata. *Corresponding Author

ABSTRACT

Introduction: Pectus Excavatum usually recognized during infancy and become worse with growing ages.

Case presentation: We presented a 6 months old male child to our departmental OPD with complaints of indrawing of anterior chest wall. On physical examination revealed a significant Pectus Excavatum deformity. There was no other abnormality except the chest wall deformity. An abnormal chest X-ray and CT scan demonstrated leftward displacement of heart and great vessels.

Conclusion: Surgery for Pectus Excavatum is specialized and can be done in early childhood with better outcome.

KEYWORDS

Pectus Excavatum, deformity, early repair, X-ray and CT scan

INTRODUCTION:

Pectus Excavatum is one of the most common chest wall deformity in childhood. It's incidence is approximately 1 in every 200 live births. In majority of patients it appears soon after birth (85-90%) and Males are more affected than females with 4:1 ratio. Pectus Excavatum usually recognized during infancy and become worse with growing ages. Commonly occurs in children with connective tissue disorders, eg. Marfan disease (60%).

Index Case:

A 6 months old male child presented to our departmental OPD with complaints of indrawing of anterior chest wall. On physical examination revealed a significant Pectus Excavatum deformity. There was no other abnormality except the chest wall deformity. An abnormal chest X-ray and CT scan demonstrated leftward displacement of heart and great vessels. After routine pre-operative work up, patient was taken into operating room for surgical correction. Our procedure consisted lower midline incision with extensive mobilization of costo-chondral and chondro-sternal junction, especially in the region of lower fused elements. A Doyens retractor was used to isolate the costo-chondral and chondro-sternal junction without injuring the underlined pleura. Excision of the abnormally directed and curved chondral elements in the region of costo-chondral junction were made. The sternum was also mobilized upto manubrio-sternal junction without opening the underlined pleura. A wedge shaped anterior osteotomy at the manubrio-sternal junction was done. The sternal body was shifted anteriorly and fixed to the Manubrium with 2 interrupted No.2 stainless steel sutures, keeping a watch on that the sternum does not fall to its original position. A drain was placed in between the sternal body and the separated structures and was closed in layers. Modified Ravitch procedure was performed. Post-operative chest X-ray was satisfactory and shows evidences of reversal of mediastinal and left lung compression. Patient made and uneventful post-operative recovery in the ICU and got discharge on 5th post-operative day. The following photographs exhibits the defects and post-operative recovery.



Figure 1. Pectus Excavatum deformity: Physical examination of the patient demonstrating the Pectus Excavatum.

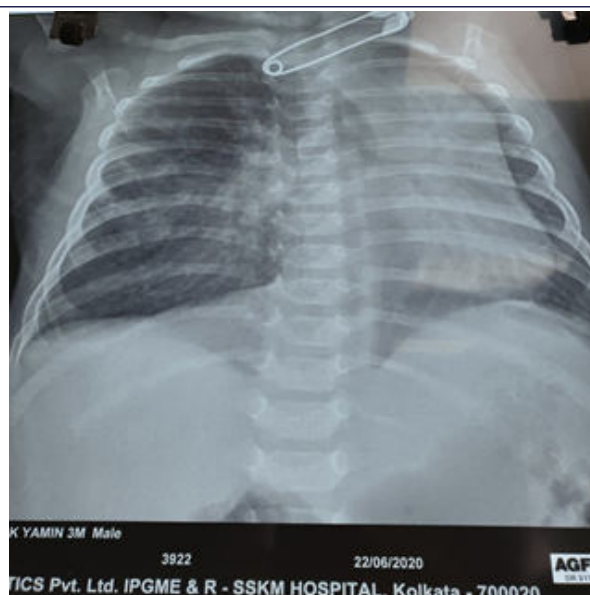


Figure 2. Pre-operative Chest X-ray: showing leftward displacement of heart and great vessels.

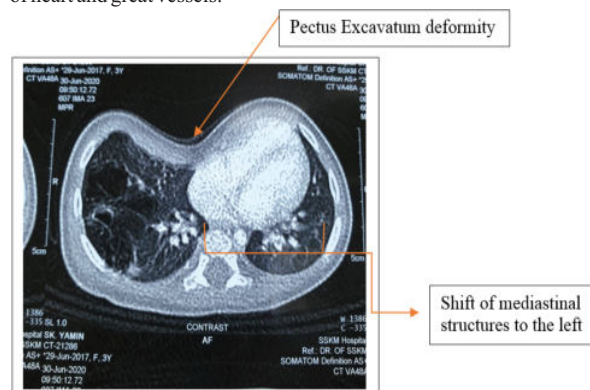


Figure 3. CT scan (Pre-operative): demonstrating the leftward displacement of mediastinal structures secondary to Pectus Excavatum.



Figure 4. Operative photograph: after excision of B/L costal cartilages from 4th to 7th and xiphoid process. Sternum is fixed in between 3rd and 4th ribs.



Figure 5. Post-operative Chest X-ray: showing straight sternal border

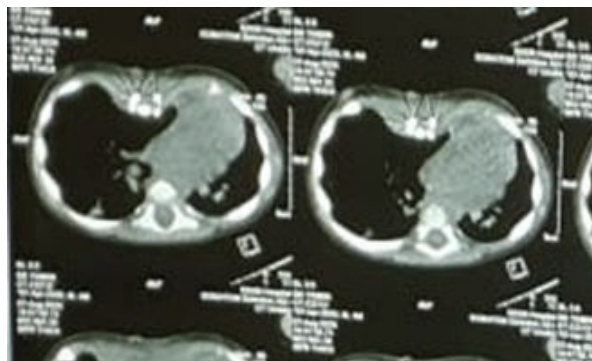


Figure 6. Post-operative CT scan: demonstrating improvement

vessel disorders. Different methods are being used for repair like Nuss procedure, Ravitch procedure, Robicsek procedure, Leonardo procedure etc. In the above mentioned case, we preferred lower midline incision over sternum with excision of costal cartilages from costochondral junction to chondrosternal junction of 3rd to 7th ribs on both side. The xiphoid process is also excised. Transverse wedge resection over sternum done between 2nd and 3rd ribs and the sternum is fixed with steel wires. The patient made an early post-operative recovery. All other previously documented cases are more than 3 years old. The above mentioned case is the youngest patient with Pectus Excavatum repair.

CONCLUSION:

Surgery for Pectus Excavatum is specialized and can be done in early childhood with better outcome.

CONSENT:

Written informed consent obtained from patient's mother for publication of this case report and accompanying images.

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DISCUSSION:

There are several case reports and case studies documented regarding Pectus Excavatum repair alone or along with other cardiac or great