Chest Wall Tumour Excision with Reconstruction of Defect by Mesh and Muscle Flap in Six Year Child

Nagre SW*, Bhosle KN, Khatod A

Cardiovascular & Thoracic Surgery, Grant Medical College, Mumbai, India

*** Corresponding author:** Cardiovascular & Thoracic Surgery, Grant Medical College, Mumbai, India, Tel: 9967795303; E-mail: surajnagre@yahoo.com

Clinical Presentation

Chest wall tumour in children is very rare and provides diagnostic as well as therapeutic challenge for surgeons. We described a chest wall tumour in 6 year old male child. Local control is the most important prognostic factor.

Six year male child got admitted in our hospital with complaint of gradually increasing chest wall mass since one year. Last six month the mass has increased rapidly. The mass was painless to start but now slightly painful along with patchy erosions of overlying skin. The mass size was 15 cm by 12 cm and it is fixed to anterior chest wall (Figure 1). Skin overlying the mass shows patchy erosions. Chest radiograph shown soft tissue shadow on right side of chest wall along with right side moderate pleural effusion. CECT and MRI 3D reconstructed images shown enhansing median and right paramedian anterior chest wall mass 13 cm by 8 cm by 12cm extending into the anterior mediastinum suggesting germ cell tumour along with collapse of right upper lobe, lower lobe, lateral segment of middle lobe and large pleural effusion (Figure 2). Fine needle aspiration cytology [FNAC] shown query germ cell tumour. Wide local excision of mass done with adequate margins including anterior part of second and third rib upto chondrosternal junction (Figure 3a). Right pleura opened with drainage of 1.5 litre of effusion. Chest wall defect (Figure 3b) was large so reconstructed using polypropylene mesh (Figure 4a). Closure was done by reinforcing with pectoralis major and latissimus dorsi flap from same side by plastic surgeon (Figure 4b) after keeping intercostal drainage tube of 28 french in right pleura and negative suction romovac drain of 16 french in between muscle and subcutaneous space. Postoperative stay was uneventful. Histopathology report of excised specimen shown primitive neuroectodermal tumour-neuroblastoma with clear margins so referred to oncosurgery department for further treatment. There was no recurrence after one year follow up. Multidisciplinary approach is must for good outcome.

For chest wall reconstruction following principles should be followed.

Defects less than 4 to 5 cm typically do not require reconstruction.

Posterior defects covered by the scapula do not require reconstruction.

Skeletal stabilization is achieved with autologous tissue, mesh, Gore-Tex or methyl methacrylate “sandwich” reconstruction and mesh reconstruction of the right anterior chest wall .

Soft tissue reconstruction can be performed using myocutaneous or omental flaps.

Figure 1: Anterior chest wall mass.

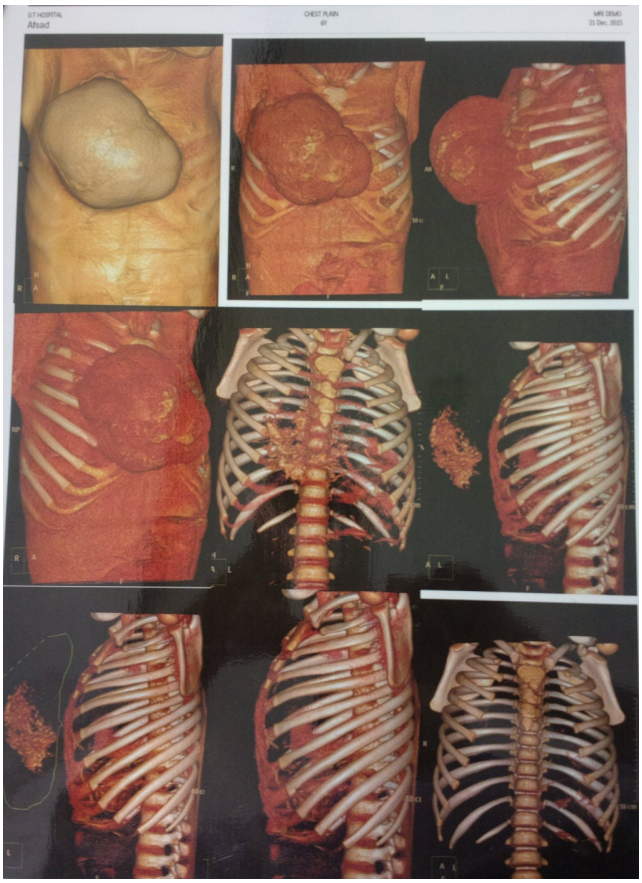

Figure 2: Enhancing median and right paramedian anterior chest wall mass 13 cm by 8 cm by 12 cm extending into the anterior mediastinum suggesting germ cell tumour along with collapse of right upper lobe, lower lobe, lateral segment of middle lobe and large pleural effusion.

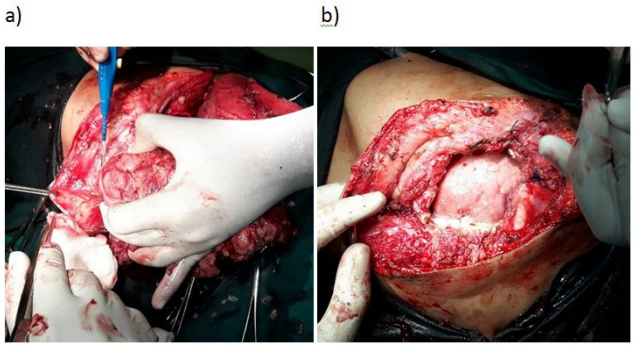

Figure 3: a) Excision of chest wall mass along with second and third rib. b) The defect in rib cage.

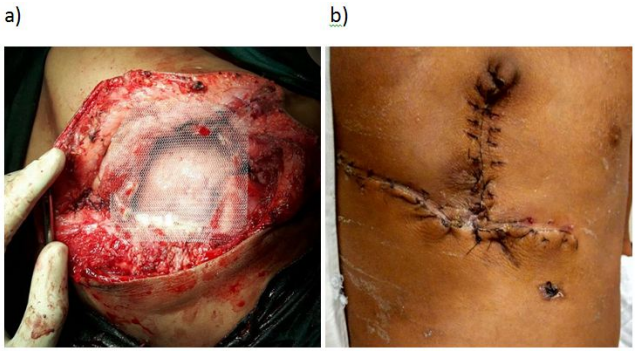

Figure 4: a) Chest wall defect meshplasty. b) Wound closed by plastic surgeon.