

GIANT ANTERIOR MEDIASTINAL TERATOMA CAUSING SUPERIOR VENACAVA OBSTRUCTION. A CASE REPORT

Abdul Baseer*, Fizza Iftikhar*, Aamir Bilal*

*Department of Cardiothoracic Surgery, Lady Reading Hospital, Peshawar, Pakistan

Address for correspondence:

Abdul Baseer,

Department of Cardiothoracic Surgery, Lady Reading Hospital, Peshawar, Pakistan

E-mail:

drabdulbaseer@hotmail.com

ABSTRACT

Among all the anterior Mediastinal masses, germ cell tumors are 15-20%; out of which 60% are benign Mediastinal teratoma. Teratoma are classified as mature, immature and may have malignant component within mass. Immature teratomas have more chances of malignancy.

We are reporting a rare case of huge anterior Mediastinal teratoma weighing 3.5kg causing superior venacava obstruction that had surgical excision and good outcomes.

Key Words: Germ cell tumors; Teratoma; Excision; Superior venacava obstruction

This case report may be cited as: Baseer A, Iftikhar F, Bilal A. Giant anterior mediastinal teratoma causing superior venacava obstruction. Pak J Chest Med 2015; 21(3): 114-6

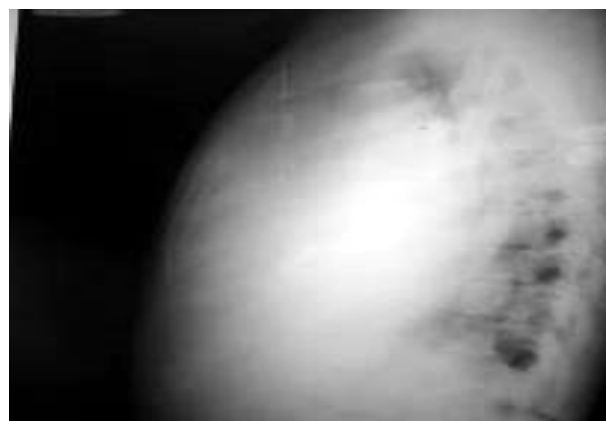
INTRODUCTION

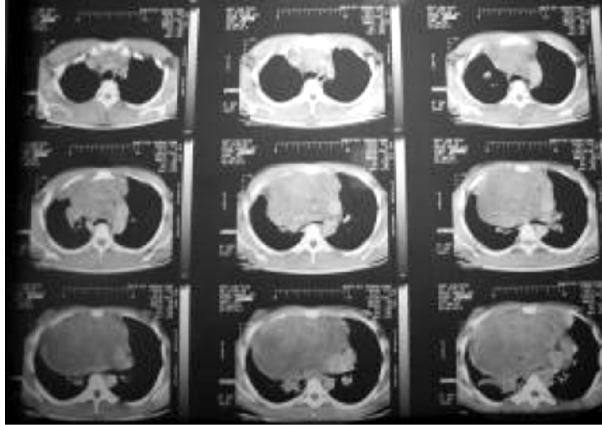
Teratomas are defined as benign germ cell tumors. Germ cell tumors may occur extra gonadal among which Mediastinal is most common site;^{1,2} benign teratoma are 3-12% of all Mediastinal tumors.³ Most of them are present in anterior Mediastinal while 3-8% is present in posterior Mediastinal.⁴ Benign masses may protrude to left or right or could be in midline.^{4,5} They may be either cystic or solid or could be both. Average size of teratoma is 10.5x8.6x5.4cm while average weight of 415gm.⁵ Teratoma is derived from all three primordial layers and contained tissues derived from ectoderm, endoderm and mesoderm.^{4,5} They can occur in male and female both with no sex predominance and can found in early life and as late as eight decade.^{3,4} They are commonly present as chest pain, accompanied with fever, cough and dyspnea. These masses may

erode bronchus or may present as pressure symptoms on adjacent structures including superior venacava syndrome, Horner's syndrome, spinal cord compression, intercostals neuralgia and dysphagia.^{5,6} Computed tomography with contrast enhancement is diagnostic procedure of choice for evaluation while the transthoracic needle biopsy of teratomas remains controversial.¹⁰ The definite treatment of benign germ cell tumors is surgical excision.^{8,9} Prognosis is excellent after complete excision.⁸

CASE REPORT

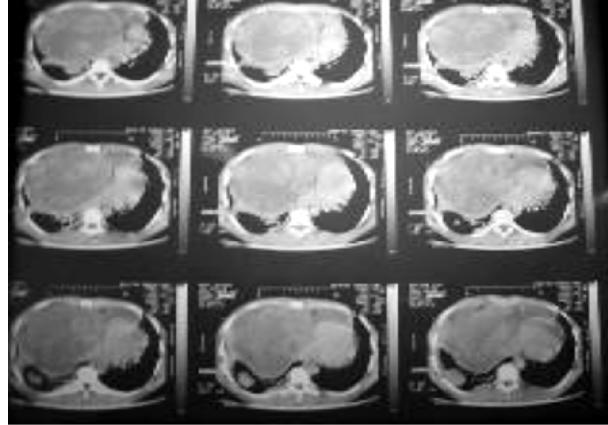
A 17 year old lady presented to us with complaints of right sided chest pain and progressively worsening dyspnea that has been previously treated with different antibiotics including anti tuberculous. Dyspnea got worse and she was unable to do her routine work and also started complaining of orthopnea, dysphagia and facial swelling.





Bronchoscopy was abandoned as they were unable to negotiate trachea.

She was referred to thoracic surgery unit orthopneac, cyanosed and unable to speak or eat with gross facial and upper trunk swelling. Chest X ray showed a large mediastinal mass extending into and occupying most of right hemi thorax. The trachea compressed to a slit on lateral view. CT scan chest with contrast revealed a well encapsulated complex mediastinal mass with mixed areas of fat, fluid and soft tissue densities, extending from superior to anterior mediastinum and laterally extending into right and and slightly into the left hemithorax. Inferiorly, it was extending upto the level of diaphragm. It measured 15x15x18cm. The arch of aorta alongwith its major branches was



displaced towards left. Superior vena cava was displaced laterally by the mass with obliteration of its lumen. The trachea, carina and main bronchi were compressed with narrowing of their lumen. Heart displaced towards left.

General anesthesia with one lung ventilation through right poster lateral Thoracotomy was done. An encapsulated; 3.5 kg solid cum cystic mass was excised in Toto. Patient had smooth post op recovery with no complication. Histopathological examination of the specimen came out as benign teratoma. Post op chest X ray showed complete excision of the mass and expanded lung. In three years follow up patient is doing fine with no recurrence.



DISCUSSION

In 1953, Willis defined the teratomas as true tumors composed of tissues that are foreign to the part or organ of body, in which they are found.¹⁰ Teratomas are benign germ cell tumors consist of all structures derived from ectoderm, endoderm and mesoderm which may present extra gonadal and most common site is Mediastinal.¹² Teratoma may be mature and immature. Benign teratoma can be either cystic or solid or may have both components.¹³ They constitute 3 to 12% among all anterior Mediastinal tumors.^{1,10}

They can occur in both sexes equally, present in early life forth to eighth decade of life.^{3,10} The common symptoms are chest pain, cough, fever and dyspnea.¹² Patient may present with pressure symptoms due to huge mass compressing adjacent structures.^{7,10} Patient may present as cough up hair or sebum if tumor erode airway which is also path gnomonic of benign teratoma.¹⁷ Average weight of teratoma is 415gm in different studies and average size is 10.5x8.6x5.4cm,^{2,3} but in our case it weight app. 3.5 kg which was a huge one and has been rarely reported up till now.

Computed tomography with contrast (CT) is a diagnostic modality in evaluating Mediastinal mass found in X ray chest and to define full extent of mass and also help to characterize the composition of mass.¹¹ Role of MRI in evaluating teratoma is still un known.¹⁰ Ultrasonography is a good modality in determining the solid and cystic component of mass, but the role of invasive studies is still controversial.⁹ Tumor markers i.e. Alpha fetoprotein and Human chorionic gonadotrophins should be measured, and if found elevated is highly suggestive of malignancy.^{5,7}

Surgical excision is treatment of choice of benign uncomplicated teratomas. It can be done with sternotomy, lateral thoracotomy approaches.⁸ If adjacent structures (lung, thymus, pericardium) found to be involved then excision of these are recommended to achieve complete excision of mass.⁸ In our case we approached via posterolateral thoracotomy.

Operative mortality and morbidity of benign teratoma is extremely low.^{2,12} Prognosis is excellent even with large tumors.⁸ Ten years survival rate of such patients is 92.8%.in our case patient had excellent post op recovery and no recurrence in one year follow up.^{5,8}

CONCLUSION

Large anterior Mediastinal teratoma causing pressure on adjacent structures is rare entity. Proper assess-

ment, evaluation and complete surgical excision of tumor result in excellent outcomes and prognosis.

REFERENCES

1. Soysal O, Sarac K, Kutlu R, Aydin A, Benli A. A case of mediastinal teratoma presenting as a cystic lesion on chest wall. *East J Med.* 1998;3:32-3.
2. Sinclair DS, Bolen MA, King MA. Mature teratoma within the posterior mediastinum. *J Thorac Imaging.* 2003;18:53-5.
3. Lakhotia S, Dewan RK. Benign cystic teratoma of mediastinum. *Indian J Surgery.* 2008;70:244-6.
4. Singal R, Dalal U, Dalal AK, Attri AK, Gupta S, Raina R. Solitary plasmacytoma of the rib: A rare case. *Lung India.* 2011;28:309-11.
5. Le Roux BT. Mediastinal teratoma. *Thorax* 1960;15:333.
6. Robinson LA, Rikkers LF, Dobson JR. Benign mediastinal teratoma masquerading as a large multiloculated effusion. *Ann Thorac Surg* 1994;58:545
7. Shirodkar NP, Chopra PS, Marker M, Murphy KD, Dhamoon A, Kwon DJ, et al. Conjoined gastric and mediastinal benign cystic teratomas. Case report of a rare occurrence and review of literature. *Clin Imaging* 1997;21:340
8. Wychulis AR, Payne WS, Clageet DT, Woolner LV, et al. Surgical treatment of mediastinal tumors. A40-year experience. *J Thorac Cardiovasc Surg* 1971;62(3):379.
9. Ikezoe J, Morimoto S, Arisawa, J, Kuriyama K, Akira M, Kozuka T, et al. Ultrasonography of mediastinal teratoma. *J Clin Ultrasound* 1986;14:513.
10. Lewis BD, Hurt RD, Payne WS, Farrow GM, Knapp RH, Muhm JR, et al. Benign teratomas of the mediastinum. *J Thorac Cardiovasc Surg* 1983;86(5):27-32.
11. Suzuki M, Takashima T, Itoh H, Choutoh S, Kawamura I, Wantanbe Y. Computed tomography of mediastinal teratomas. *J Comput Assist Tomogr* 1983;7(1):74-6.
12. Mullen B, Richardson JD. Primary anterior mediastinal tumors in children and adults. *Ann Thorac Surg* 1986;42:338.