Severe Tracheal Compression due to Mediastinal Tuberculous Lymphadenitis

Şiddetli Trakeal Basıya Neden Olan Mediastinal Tüberküloz Lenfadenit

Şevval Eren[1], Alper Avcı[1], Gürkan Fuat[2], Konca Çapan[2]

[1]Dicle university Medical School, Thoracic Surgery, Diyarbakır, Turkey

[2]Dicle university Medical School, Pediatrics, Diyarbakır, Turkey

ABSTRACT

We report a case of an 18 months old boy admitted for respiratory distress and wheezing who did not respond to nebulized salbutamol and budesonid. On chest X ray and computed tomographic investigation, a right paratracheal regular mass was seen. During hospitalization the clinical status of the child deteriorated. An enlarged inflammatory lymph node was excised from its location after thoracotomy, and mediastinal tuberculous lymphadenitis was diagnosed histopathologically. It is important to take a chest radiograph in an infant suffering a first wheezing episode in a tuberculous prevalent area. (Tur Toraks Der 2009;10:91-3)

Key words: Tracheal compression, wheezing, mediastinal tuberculous lymphadenitis.

Received: 13. 11. 2007 Accepted: 31. 01. 2008

ÖZET

Solunum sıkıntısı ve vizing ile başvuran, salbutamol ve budesonid tedavisine yanıt vermeyen 18 aylık erkek infant olgusunu sunuyoruz. Göğüs röntgeni ve bilgisayarlı tomografi incelemesinde sağ paratrakeal düzgün kitle görüldü. Hastanede yatarken çocuğun klinik durumunda kötüleşme oldu. Torakotomi ile genişlemiş inflamatuar lenf nodu bulunduğu yerden eksize edildi, histopatolojik olarak mediastinal tüberküloz lenfadenit teşhis edildi. Tüberküloz prevalansının olduğu bir bölgede ilk vizing epizodu sıkıntısı olan bir infantta göğüs radyografisi çektirmek önemlidir.

(Tur Toraks Der 2009;10:91-3)

Anahtar sözcükler: Trakeal bası, vizing, mediastinal tüberküloz lenfadenit

Geliş Tarihi: 13. 11. 2007 Kabul Tarihi: 31. 01. 2008

INTRODUCTION

Mediastinal tuberculous lymphadenitis (MTL) is a rarely diagnosed cause of wheezing or respiratory difficulty. The diagnosis may sometimes be late even at a tuberculosis (TB) prevalent area. We herein present an 18 months old boy with persistent wheezing symptoms who was finally diagnosed as MTL.

CASE

An 18 months old baby presented with a one month history of wheezing, cough and dyspnea. He was priorly diagnosed as bronchial hyperreactivity and given a nebulised treatment of budesonide and salbutamol at another centre two weeks ago. Meanwhile his clinical status got worsened and he was brought to our department with symptoms and findings of anxiety, dyspnea, tachpnea, intercostal and subcostal retractions, wheezing, stridor and arterial oxygen saturation (SaO_2) of 94%. Cough and wheezing symptoms were not related with feeding or sleeping positions. He had fever of 37.7ºC, and his body weight and height were below third percentiles. Auscultatory findings included prolonged expiration and bilateral wheezing.

In the laboratory investigations, the patient had slightly increased white blood cells (16.700/mm^3), lymphocytosis at peripheral blood smear and increased erythrocyte sedimentation rate (ESR:68mm/h). Immunoglobulins E, A, M and G, including subclasses were normal. He had a negative serology for various viruses, Mycoplasma and Chlamidia. Chest X ray at admission has displayed pulmonary parahilar infiltration with mediastinal enlargement and narrowness at distal trachea (Figure 1a). A right paratracheal regular mass causing stenosis of distal trachea and neighbouring right parahilar paranchymal infiltration was shown on computed tomograhy (CT) scan (Figure 1b).

After a few hours of the hospitalization the patient got worsened with increased retractions and severe stridor.



Figure 1a. Chest X ray at admission

Address for Correspondence / Yazışma Adresi: Şevval Eren, Dicle Üniversity Medical School, Thoracic Surgery, Diyarbakır, Turkey
Phone: 0 412 248 80 01 E-mail: sevval@dicle.edu.tr

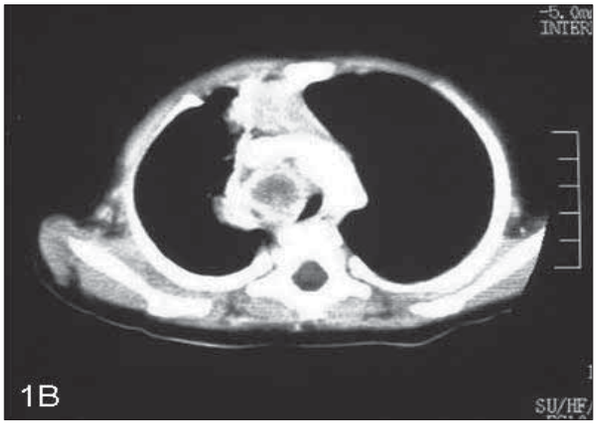


Figure 1b. Computed tomograhy (CT) scan of the patient at admission

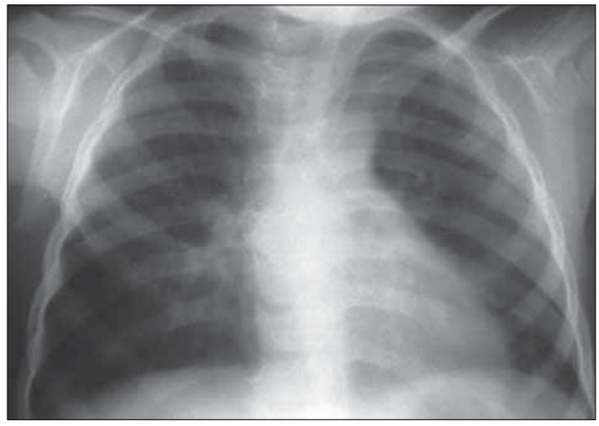


Figure 2. Chest X ray after treatment

Surgical intervention was decided to remove the mass causing tracheal compression. At bronchoscopy before surgery, tracheal stenosis caused by external tracheal mass was visible without any additional abnormality. A right thoracotomy was performed. An enlarged inflammatory lymph node at 3x4 cm diameters was excised from its location at right distal trachea. Frozen and permanent sections showed caseating granuloma with necrosis. At the third day of hospitalization, 5 TU tuberculin test revealed 15 mm of enduration without a BCG scar. There was no prior history of BCG vaccination. The patient was diagnosed as MTL histopathologically and he was completely relieved from breathlessness after surgical operation. Fasting gastric juice investigation did not reveal acid fast bacilli (AFB) on three consecutive days. Index case was learnt to be the mother who was receiving antituberculous medication for the last five months following a good response. This knowledge was hidden consciously by the family at the beginning. The patient received isoniazid (15mg/kg) and rifampisin (15mg/kg) for a total of six months and additional pyrazinamid (25mg/kg) for the first two months of antituberculous treatment. After completion of this treatment the patient was asymptomatic and had a normal chest radiogram (Figure 2).

DISCUSSION

There are more benign and frequent causes in a wheezing infant; diagnosis of TB may not be thought with a higher priority if there are no additional symptoms and signs of TB. Viral respiratory illnesses, atopic wheezing and foreign body aspirations are more commonly diagnosed causes. Criteria in the diagnosis of asthma in infancy depends on the history of recurrent wheezing or hospitalization for wheezing, parental history of atopy, presence of atopic dermatitis, allergic rhinitis, wheezing out of common cold and eosinophilia (1). It was an unexpected response in an asthmatic patient that treatment with nebulised drugs with budesonid and salbutamol was failed during such a long period beyond one month. This case presentation has reflected once more the fact that "all that wheezes is not asthma". In case of tracheobronchial compression, wheezing may be a rare presentation of MTL especially in infants because of their smaller airways. Doing a chest radiograph should absolutely be considered in an infant with a first wheezing episode at a tuberculosis (TB) prevalent area. Diagnosis of this patient was delayed because a chest radiography was not performed at his previous hospital admissions. Clinical status of our patient had been deteriorated during the delay of chest X-ray examination. History of family contact, as an important index for the diagnosis of childhood TB, may not always be easily available; and this information has to be inquired repeatedly at an underdeveloped area. This information was consciously concealed by the parents of our patient, since they did not want to be known as a contagious family by the society. In CT investigation, mediastinal lymph node was typically seen with a central hypodense area corresponding to caseation necrosis and ring enhancement after contrast administration (2) (Figure 2).

Tuberculous lymphadenitis may occur as an extension of a primary pulmonary infection by lympho-haematogenous dissemination or as a primary disease without pulmonary involvement. In the series of Geldmacher et al, the incidences of lymph node and mediastinal lymph node TB without pulmonary involvement were noted to be 5.1% and 1.3% (3). The right paratracheal lymph node was found to be the most frequent site of mediastinal node enlargement in adults (4). Our patient had a right mediastinal node enlargement associated with parahilar pulmonary infiltration.

The indication for bronchoscopy in diagnosis of TB is indistinct. Bronchoscopy may be important in diagnosing an endobronchial abnormality or foreign body aspiration. In case of an intraluminal granulomatous lesion that causes acute airway obstruction, bronchoscopy can also be used for the treatment by supplying pulmonary reexpansion without any unnecessary surgical treatment.

In pulmonary TB, surgery is not a valid treatment in most circumstances. It is important to outweigh the risks of open thoracotomy in a child with MTL, however it may be a mandatory option in a child with compressive symptoms. Thoracotomy and excision of lymph node mass was performed in our patient to treat the mediastinal compression symptoms, since the mass was compressing the trachea causing airway obstruction (2,5). In patients without severe compression symptoms, the resolution of TB lymphadenitis is expected after anti-tuberculous treatment (5). Steroids have been used by many institutions as a useful aid in the therapy of enlarged mediastinal lymph node (6).

Venkateswaran et al have recently reported 13 children with MTL in whom 2 had presented with respiratory distress and one with stridor (5). In that study, TB was suspected only in 6 children (46%) at presentation. Bronchoscopy was diagnostic in identifying cheesy material within the bronchus in 4 (30%) and in identifying external compression in 2 (15%). Thoracotomy and excision of the

lymph node mass was necessary to treat the mediastinal compression and to ascertain the diagnosis of TB in 3 children (23%). All 13 children had complete resolution of tuberculous lymphadenitis following anti-tuberculous treatment in that study.

Diagnosis of MTL should be considered in case of persistent wheezing symptoms in infancy at a TB prevalent area. Attitude of doctors not to perform a chest X ray in a wheezing infant, and attitude of people not to inform the doctors abaout the familial history of TB are the main difficulties for the diagnosis in a developing area.

REFERENCES

1. Castro-Rodriguez JA, Holberg CJ, Wright AL, et al. A clinical index to define risk of asthma in young children with recurrent wheezing. Am J Respir Crit Care Med 2000;162:1403-6.
2. Karagoz T, Senol T, Bekci TT. Tuberculous lymphadenitis. Toraks Dergisi 2001;2:74-9.
3. Geldmacher H, Taube C, Kroeger C, et al. Assessment of lymph node tuberculosis in Northern Germany: a clinical review. Chest 2002;121:1177-82.
4. Leahy JF, Millar J, Fitzgerald R. Mediastinal computed tomography in a British Asian population. Br J Radiol 1994;67:535-9.
5. Venkateswaran RV, Baron DJ, Brawn WJ, et al. A forgotten old disease: mediastinal tuberculous lymphadenitis in children. European Journal of Cardiothoracic Surgery 2005;27:401-4.
6. Papagiannopoulos KA, Linegar AG, Haris DG, Rossouw GJ. Surgical management of airway obstruction in primary tuberculosis in children. Ann Thorac Surg 1999;68:1182-6.