

Multiple Mediastinal Abscesses in an Infant: Case Report

Bir Süt Çocuğunda Multipl Mediasten Abseleri

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ABSTRACT Descending necrotizing mediastinitis and mediastinal abscess are acute, serious, septic diseases which can result from a complication of oropharyngeal infection. They are relatively rare conditions caused by downward spread of neck infections into the mediastinum. The infectious spreading follows known anatomical tracts, leading to the invasion of definite mediastinal spaces. Both of the diseases require a prompt diagnosis, mediastinal drainage and in some cases radical surgical treatment. Delay of diagnosis and insufficient drainage always result in high mortality. The reason for publishing this report is both the fact that descending necrotizing mediastinitis and mediastinal abscesses are very rare especially in childhood and emphasized that repeated drainages combined with antibiotherapy are the optimal approach to treating these diseases.

Key Words: Mediastinitis; therapy; abscess; infant

ÖZET Desendan nekrotizan mediastinit ve mediasten abseleri orofarengal enfeksiyonların bir komplikasyonu olarak ortaya çıkabilen akut, ciddi seyirli ve septik hastalıklardır. Bu hastalıklar bo-yundaki enfeksiyonların aşağıda mediastene doğru yayılması sonucu gelişen nispeten nadir durum-lardır. Bilinen anatomik yolları izleyen enfeksiyon yayılımı, belirli mediasten boşluklarının invaz-yonuna neden olur. Her iki hastalık da hızlı tanı, mediasten drenajı ve bazı vakalarda radikal cer-rahi tedavi gerektirmektedir. Tanıda gecikme ve yetersiz drenaj daima yüksek mortaliteye neden olmaktadır. Bu vakayı yayınlamamızın nedeni, desendan nekrotizan mediastinit ve mediasten ab-selerinin özellikle çocukluk çağında çok nadir görülmesi ve tekrarlanan drenajlar ve uygun antibi-yotik uygulamasının hastalığın tedavisinde tercih edilebilir bir seçenek olduğuna vurgulamaktır.

Anahtar Kelimeler: Mediastinit; tedavi; abse; süt çocuğu

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Suppurative mediastinitis is one of the serious complication of deep neck infection and is called descendant necrotising mediastinitis which has a mortality rate of 40% despite aggressive medical and surgical treatment.¹ Suppurative mediastinitis and mediastinal abscesses in children are relatively rare. They usually occur following oesophageal perforation and thoracic surgery.^{2,3} However, pediatric non-traumatic mediastinal abscesses are extremely rare. Only about ten cases were reported in the literature in the past fifteen years. Haematogenous spread from a distant infected site or direct infection of the mediastinum are possible causes of non-traumatic mediastinal infection.⁴ Here; a one year old boy with mediastinal and ple-

ural abscesses following cervical lymphadenitis, is reported.

CASE REPORT

A one year old boy was referred to our hospital because of severe respiratory distress and fever. He admitted to a state hospital with retroauricular, erythematous, painful lymphadenitis and fever fifteen days ago. He was treated with oral antibiotics. On the fourth day of the treatment he admitted with cough, fever and respiratory distress. He was treated with parenteral ceftriaxone, sulbactam-ampicilline and amicasin for seven days. As the symptoms persisted, he was referred to our hospital. On the initial physical examination, a lymphadenopathy on the left cervical region with a diameter of 2 x 2 cm, diminished breath sounds, crackles and rhonchi over the left lung were detected. The chest radiograph revealed diffuse alveolar infiltration with a pleural effusion in the left lung, an extension of the mediastinum and displacement of the trachea to the right. A contrast enhanced computerized tomography (CT) of thorax confirmed an abscess with a diameter of 3 cm in the pleural spaces of the left hemithorax and multiple abscesses in the mediastinum (Figure 1). An ultrasonography (USG) guided percutaneous drainage was performed from the upper region of left lung and 10 cc purulent material was drained. *Staphylo-*



FIGURE 1: Thorax CT of the patient revealed an abscess in the pleural spaces of the left hemithorax and multiple abscesses in the mediastinum.

coccus aureus was yielded in the culture. Laboratory evaluation included high white blood cell count with 22.900/mm³ and elevated C-reactive protein with 199 mg/L. Antibiotic treatment with metronidazole, vancomycin and amicasin was started. As fever persisted and repeated thorax CT showed minimal regression of mediastinal and pleural abscesses, a second percutaneous drainage of the pleural abscess was performed after the first week of the antibiotic therapy. Antibiotherapy was continued for six weeks. Further laboratory evaluation showed no evidence of immunodeficiency. Thorax CT after one month of antibiotherapy revealed prominent regression of the abscesses.

DISCUSSION

Mediastinitis can be presented as mediastinal abscess and may arise from odontogenic infection, retropharyngeal and peritonsillar abscesses, parotitis, thyroiditis, oesophageal perforation, traumatic endotracheal intubation, postadenoidectomy and as in our patient from cervical lymphadenitis.⁵⁻⁷ The cervical infections spread through deep facial planes into the mediastinum facilitated by gravity as well as by negative intrathoracic pressures.⁶ Prompt diagnosis and adequate treatment may prevent its serious complications like bacteremia, suppurative thyroiditis, mediastinitis and mediastinal abscess.⁸ The most isolated organisms are mixed aerobic and anaerobic bacterial flora. In the majority of cases like our patient; painful, erythematous swelling of the neck and fever are the main symptoms in children with cervical lymphadenitis. In the case of mediastinal involvement; thoracic pain, jugular distention, dyspnea, hypoxia and respiratory failure may be present.^{5,7}

Only about ten cases of children with a non-traumatic mediastinal abscess were published in English literature in the last fifteen years (Table 1).^{2,4,5,9-17}

Prompt antibiotic therapy should be directed toward mixed aerobic and anaerobic infections and drainage of the abscess formation or empyema should be considered. An early and aggressive

TABLE 1: Reported children with non-traumatic mediastinal abscesses.

Study	Year	Age	Bacteria	Etiology
Komatsu et al ²	1989	24 months	Gram + cocci	Tonsillitis
Tobias et al ⁹	1990	8.5 years	<i>Streptococcus pneumoniae</i>	Pneumonitis
Smith et al ¹⁰	1992	11 years	<i>Staphylococcus aureus</i>	Septic arthritis
Bungay et al ¹¹	1995	1.5 months	<i>Staphylococcus aureus</i>	Hand abscess
Fields et al ¹²	1997	22 months	<i>Streptococcus pneumoniae</i>	Thymic infection
Sztajn bok et al ¹³	1999	19 months	<i>Staphylococcus aureus</i>	Retropharyngeal abscess
Krebs et al ¹⁴	2000	15 days	<i>Staphylococcus aureus</i>	Hip arthritis
Kono et al ¹⁵	2001	3 years	?	Peritonsillar and retropharyngeal abscesses
Tuerlinckx et al ⁵	2003	9 years	?	Retropharyngeal abscess
Duenas et al ¹⁶	2003	19 months	<i>Pseudomonas aeruginosa</i> <i>Escherichia coli</i> <i>Staphylococcus aureus</i>	Retropharyngeal abscess
Tercier et al ⁴	2005	1 year	<i>Staphylococcus aureus</i>	Axillary abscess
Yamasaki et al ¹⁷	2008	6 year	<i>Streptococcus pyogenes</i>	Retropharyngeal abscess

surgical treatment has been accepted for the adult population, but there is not enough evidence to establish a therapeutic consensus for this management approach in children.^{16,18} Dueñas et al¹⁹ treated a nineteen month old boy with aggressive surgical debridement and intravenous therapy with broad-spectrum antibiotics and they suggest that antibiotic therapy should always be associated with aggressive surgical debridement in pediatric cases. However; as in our patient, most of the pediatric patients reported in the literature were

treated successfully with broad spectrum anti-bi-otherapy and drainages without aggressive surgery.

We suggest that non-traumatic mediastinal abscesses in childhood can be treated without extensive surgery. The evidence of respiratory symptoms such as cough, respiratory distress and tachypnea under medical treatment of cervical lymphadenitis can be signs of mediastinal spreading of the infection and in these cases thorax CT has to be performed as soon as possible.

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