



Tuberculous Abscess of the Chest Wall

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ABSTRACT

Chest wall is a rare involvement localization of tuberculosis, though uncommon are frequently seen in countries endemic to the disease. In this report, a tuberculosis case with chest wall involvement is presented.

Key words: Tuberculosis, cold abscess, chest wall

Göğüs Duvarının Tüberküloz Absesi

Hastalığın endemic olarak görüldüğü yerlerde bile göğüs duvarı tutulumu sık değildir, nadir tüberküloz tutulum lokalizasyonudur. Bu bildiride, göğüs duvarı tutulumu olan bir vaka sunulmuştur.

Anahtar kelimeler: Tüberküloz, soğuk apse, göğüs duvarı

INTRODUCTION

Chest wall is a rare localization of tuberculosis abscess; even though it is not common may be frequently encountered in the countries endemic to the disease. Skeletal localization of this disease is not common, accounting for only 2.6% of all cases (1).

CASE

Twenty two years old man was admitted to our emergency service with chest pain, fever, losing 8 kilograms, a few non-hiperemic and fluctuating soft tissue lesions on anterior chest wall, in January 2004. The findings of examination were as follows; breath sounds were decreased on the left inferior zone and a thoracotomy scar was observed on the left hemithorax. He had no tuberculosis history in his family. He had a history of thoracic operation in May 2003 due to decortication, and the



Figure 1. Chest radiograph in day of admission

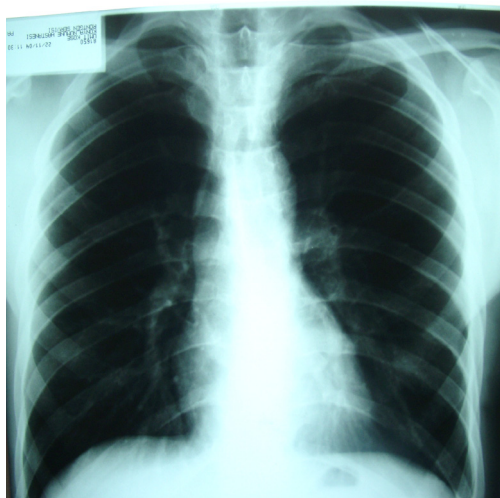


Figure 3. Radiograph after 12 months treatment

pathology result was reported as chronic pleuritis. Chest radiograph demonstrates in day of admission showing consolidations and pleural irregularities on left medial and left inferior zone (Figure 1). CT scans revealed unilateral peripheral opacities, pleural thickening, destruction of ribs, pleural nodular lesions (Figure 2)

Needle aspiration was performed from the pleural lesions present on left lateral chest wall;

Microscopic examination demonstrated a few polymorphic neutrophils, lymphocytes, and rare erythrocytes among necrotic cells. No atypical cell was observed. Cytomorphologic evaluation revealed coagulation necrosis and giant cells. Baseline hematological and chem-

ical findings were as follows, wbc: 13.0 K/uL, Hgb: 11.7 mg/dl, Hct: 38.7, Plt: 142 K/uL, Sedimentation rate 33 / 1 hour. Sputum was negative for Acid Fast Bacilli (AFB) for three times and tuberculin skin test was 7 mm. AFB was positive in microscopic examination of needle aspiration specimen. The specimen was also cultivated on the radiometric BACTEC 460 TB system. The isolated strain had been identified as belonging M.tuberculosis by niacin accumulation, and nitrate reduction test. The tests with the radiometric BACTEC 460TB system were performed according to the manufacturer's recommendations. The BACTEC 460 TB instrumentation was used for daily reading of 12B vials until control had reached

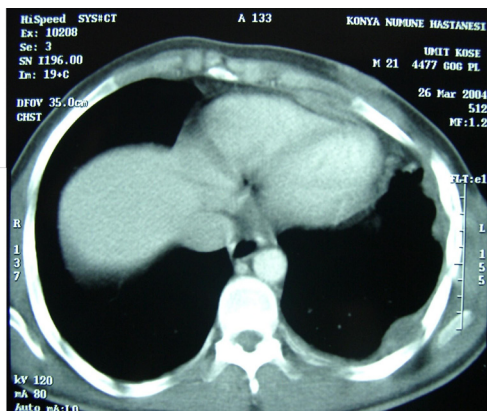


Figure 2. CT Scan in day of admission

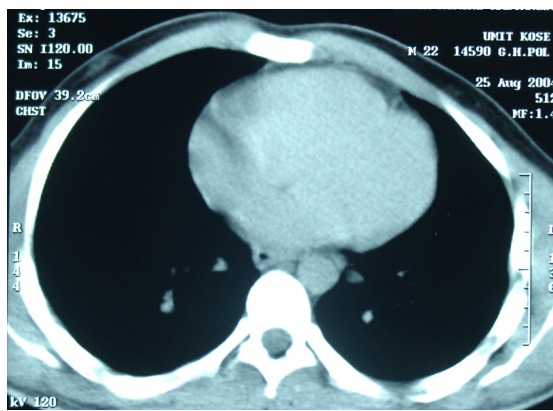


Figure 4. CT Scan after 7 months treatment

a growth index of ≥ 30 . The susceptibility testing was performed with the standard critical concentration of isoniazid 0.1 $\mu\text{g/ml}$ for 12B, rifampin 2 $\mu\text{g/ml}$ for 12B, pyrazinamid 100 $\mu\text{g/ml}$ for 12B, ethambutol 2,5 $\mu\text{g/ml}$ for 12B(2). The isolated *M.tuberculosis* was found to susceptible to all the tested anti-tuberculous agents.

Case was assessed as a 'Cold Abscess' and treatment was initiated with isoniazid 300 mg, rifampicin 600 mg, ethambutol 1500 mg, morphozinamid 2500 mg combination. Treatment duration was planned as twelve months.

Four antituberculous drugs were administered for two months, and following 10 months the treatment was continued with isoniazid 300 mg and rifampicin 600 mg. Radiographic and complete clinical remission were observed in the case after 12 months treatment. Figure 3 shows the chest radiograph showing complete remission after 12 months treatment and Figure 4 demonstrates CT scan of the chest after 7 months of treatment showing marked regression in the lesions.

DISCUSSION

Tuberculosis locations in the chest wall are not common; this location was seen less than 10% of skeletal tuberculosis. Even if thoracic vertebral locations are included, chest wall involvement remains rare (1). Medical treatments often fail with tuberculosis abscesses in the chest wall (3). Faure and colleagues (4) reported tuberculosis abscess of chest wall. In his study, cases had history of tuberculosis in 15/18 patients (83.3%) and 17.4% of the patients were treated with medication. In our case, there was no tuberculosis history.

In our case, cold abscess was diagnosed by the bacteriologic diagnostic methods, except PCR. Cold abscess of chest wall are generally solitary lesions but multiple lesions are possible: 12 of 14 patients in Burke's study had a single mass (5). In our case, multiple pleural lesions and destruction of ribs were observed. The ages of patients are variable: according to the some authors, patients are often between 15 and 35 years old (6). For some authors, the mean age is higher than 50 years old (7).

There are four mechanisms in the pathogenesis of tuberculosis abscess in the chest wall. First, there is pleural thickening, and visceral pleura adheres to parietal pleura by tuberculous pleural lesions. Second a chest

wall abscess develops by means of localized empyema tissue from the tuberculous pleuritis and ruptures the soft tissue of the chest wall. Third, *M.tuberculosis* in the thoracic cavity disseminates the soft tissue of the chest wall at the time of puncture in tuberculous pleural effusion and empyema. Fourth, *M.Tuberculosis* infiltrates by means of blood the soft tissue of chest wall by miliary tuberculosis, and constructs abscess (8). We thought that first and second mechanisms may be possible mechanisms related to our case. The diagnosis of tuberculosis abscess in chest wall is made by bacteriologic examination. Nokana and coworkers (4) reported that positive rate of acid-fast bacilli was 35% and positive rate of culture was 60%. In our case, acid-fast and tuberculosis culture were positive. There is no consensus in the treatment of tuberculous abscess; some studies reported successfully treated patients with a current chemotherapy regimen (7). Paul et al. (9) recommended that the treatment should not be longer than 12 months with two antituberculous drugs. Faure et al (1) recommended combination of surgical and antituberculous drugs for reducing the recurrence of tuberculosis. Chen and coworkers successfully treated 3 patients with current antituberculous drugs, and reported no need for surgical procedures (7). According to Kaufmann, resection of a part of the rib is necessary, even it is macroscopically normal, because the origin of abscess is deeper (10). We observed completed remission with 12 months of antituberculous treatment.

In conclusion, cold abscesses of chest wall are not common. Antituberculous combination chemotherapy should be recommended as initial treatment. If the patient improves, medical therapy should be continued. Surgical treatment option should be always keep in mind, if the medical treatment is not effective.

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