

Chest Wall Tuberculosis Without Pulmonary Involvement

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SUMMARY

A 74 years old female patient was admitted to the hospital with an enlarging chest wall mass which developed in one month. Computerized tomography of thorax showed anterior chest wall abscess without evidence of underlying lung or pleural disease. Sputum examination revealed negative acid fast bacilli in smear and culture. Excision of the abscess was performed and the histopathological examination showed granulomas with caseation necrosis. These histological features were consistent with tuberculosis. The patient received antituberculosis treatment with four drugs for one year. We presented the case with literature, as primary chest wall tuberculosis is rarely seen.

KEY WORDS: Chest wall, cold abscess, tuberculosis

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ÖZET

AKCİĞER TUTULUMU OLMAYAN GÖĞÜS DUVARI TÜBERKÜLOZU

Yetmiş dört yaşında bayan olgu hastaneye bir aydır göğüs duvarında olan kitle ile başvurdu. Çekilen bilgisayarlı tomografide akciğer ve plevrada hastalık olmaksızın göğüs ön duvarında apse mevcuttu. Balgam incelemesinde aside dirençli basil teksif ve kültür negatif bulundu. Aps eksi zyonu yapıldı ve histopatolojik inceleme de kazeifikasyon nekrozu içeren granülomlar tespit edildi. Bu bulgular tüberkülozla uyumluydu. Olgu bir yıl boyunca dörtlü antitüberküloz tedavi aldı. Primer göğüs duvarı tüberkülozu nadir görüldüğünden, olgu literatür bilgileri eşliğinde sunuldu.

ANAHTAR KELİMELE R: Göğüs duvarı, soğuk apse, tüberküloz

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INTRODUCTION

The incidence of tuberculosis has shown a declining trend with advances in chemotherapy (1). By this trend, tuberculous abscess of the chest wall is rare and constitutes 1% to 5% of all cases of musculoskeletal tuberculosis (2-3). Tuberculosis of the

chest wall may resemble a pyogenic abscess or tumor which is recognized as an inflammatory soft tissue mass or erosions of rib or cartilage. Tuberculosis of the chest wall usually results from hematogenous spread or direct invasion from underlying pleural or pulmonary parenchymal disease (4). We

report a 74 years old patient with chest wall tuberculous who had no pulmonary tuberculosis.

CASE

A 74 years old woman was admitted to the chest diseases hospital with an enlarging chest wall mass wick developed in one month. She denied cough, sputum, fever, weight loss and hemoptysis. Her medical history was notable for only hypertension. She had no history of tuberculosis and also contact with tuberculosis patients. Her vital signs revealed a blood pressure of 140/90 mmHg, heart rate of 88/minute, respiratory rate



Figure 1. Chest wall computerized tomography shows an anterior chest wall lesion on the left with minimal bone destruction and without evidence of underlying lung or pleural disease.

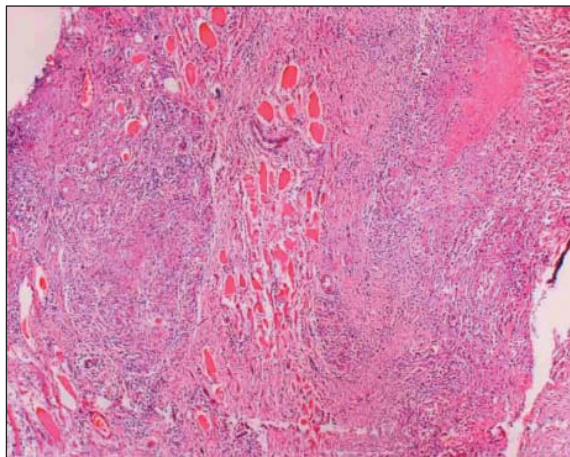


Figure 2. Histopathological examination showing tuberculoid granulomas surrounded by lymphocytes involving subcutaneous tissue and striated muscle (HE, x 40).

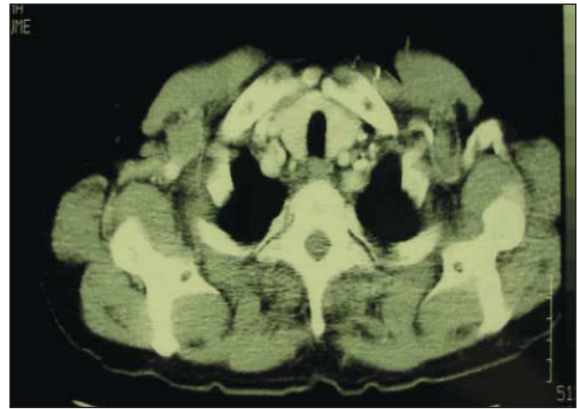


Figure 3. Chest computerized tomography shows the regression of the chest wall lesion after medical treatment for one year.



Figure 4. The lesion on the chest wall after excision biopsy and before the medical treatment.



Figure 5. The lesion was completely cured and the scar tissue left after the medical treatment.

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of 15 breaths/minute and body temperature of 36.5°C. On admission hematological and biochemical parameters and sedimentation rate were all within normal limits. Chest computerized tomography showed an anterior chest wall abscess without evidence of underlying lung or pleural disease (Figure 1). Sputum revealed three negative acid fast bacilli stains as well as negative *Mycobacterium tuberculosis* culture. The histopathological examination showed granulomas composed of epithelioid histiocytes surrounded by lymphocytes, involving the dermis, subcutaneous tissue and skeletal muscle fibers. They contained scattered multinucleate giant cells and had a tendency to confluence. In some areas large amounts of caseation necrosis were present in the center of the coalescent granulomas. These histological features were consistent with tuberculosis (Figure 2). After this, a daily regimen of 300 mg isoniazid (H), 600 mg rifampicin (R), 3000 mg morfozidamide (Z) and 1500 mg ethambutol (E) were initiated. The patient received antituberculosis therapy for one year (HRZE for three months and HR for nine months). Radiological improvement was obtained (Figure 3). Also the lesion on the chest wall was cured and only a scar tissue was left after the medical treatment (Figure 4,5).

DISCUSSION

Primary tuberculosis of the chest wall is rare and its clinical feature may resemble pyogenic abscess or tumor and distinguishing between them can be difficult (5). Reduced cellular immunity due to underlying medical conditions may be a factor in the development of cold abscess (6). There are three mechanisms in the pathogenesis; direct extension from pleural or pulmonary parenchymal disease, hematogenous dissemination of a dormant tuberculous focus or direct extension from lymphadenitis of the chest wall (1,7,8).

Cold abscess of chest wall usually occurs as a solitary lesion and occurs more frequently at the margins of the sternum and in the shafts of the ribs (3,9). It has been reported to occur more frequently in males (3,8). Some reports gave the peak incidence in ages between 15 and 35 years (10,11), whereas other reports gave older age ranges (3,6,8). Past incidence of pulmonary tubercu-

losis was noted to be as high as 83% (3) and the incidence of active pulmonary tuberculosis ranged from 17.4% to 62.5% (9-11). Also, Buyuksirin M, et al. reported a 22 years old male patient having cold abscess of the chest wall without pulmonary involvement (12). Although primary chest wall tuberculosis is mostly encountered in young patients, our case was a 74 years old female patient who admitted to the hospital with chest wall mass. After the biopsy it was distinguished from the chest wall tumor and diagnosed as chest wall tuberculosis.

Paik HC, et al. reviewed 89 patients who underwent surgical resection of cold abscess of the chest wall. They recommended complete resection of cold abscess of the chest wall and postoperative tuberculosis medication for a minimum of 12 months (5). Sakuraba M, et al. reported 13 cases who had both surgical and postoperative medical treatment without any recurrences (1). In addition, Cho KD reported that postoperative antituberculosis medication might play an important role in reducing the relapse (7). Also, our case had tuberculosis treatment for one year after surgical treatment.

Chest wall tuberculosis manifesting as cold abscess is a rare disease and may resemble chest wall tumor especially in old patients. Complete resection and postoperative tuberculosis medication for a minimum of 12 months are essential to decrease the chance of recurrences. Also maintaining a high degree of suspicion of tuberculosis is mandatory, especially in endemic areas.

REFERENCES

1. Sakuraba M, Sagara Y, Komatsu H. Surgical treatment of tuberculous abscess in the chest wall. *Ann Thorac Surg* 2005;79:964-7.
2. Morris BS, Maheshwari M, Chalwa A. Chest wall tuberculosis: A review of CT appearances. *Br J Radiol* 2004;77:449-57.
3. Faure E, Souilamas R, Riquet M, et al. Cold abscess of the chest wall: A surgical entity? *Ann Thorac Surg* 1998;66:1174-8.
4. Ueno T, Yoshioka T, Satoh H, et al. Chest wall tuberculosis. *Respiration* 2001;68:87.
5. Paik HC, Chung KY, Kang JH, Maeng DH. Surgical treatment of tuberculous cold abscess of the chest wall. *Yonsei Med J* 2002;43:309-14.

6. Chen CH, Shih JF, Wang LS, et al. Tuberculous subcutaneous abscess: An analysis of seven cases. *Tuber Lung Dis* 1996;77:184-7.
7. Cho KD, Cho DG, Jo MS, et al. Current surgical therapy for patients with tuberculous abscess of the chest wall. *Ann Thorac Surg* 2006;81:1220-6.
8. Hsu HS, Wang LS, Wu YC, et al. Management of primary chest wall tuberculosis. *Scand J Thorac Cardiovasc Surg* 1995;29:119-23.
9. Burke HE. The pathogenesis of certain forms of extrapulmonary tuberculosis: Spontaneous cold abscesses of the chest wall and Pott's disease. *Am Rev Tuberc* 1950;62:48-67.
10. Tatelman M, Drouillard EJP. Tuberculosis of the ribs. *Am J Roentgenol* 1953;70:923-35.
11. Lee G, Im JG, Kim JS, et al. Tuberculosis of the ribs: CT appearance. *J Comput Assist Tomogr* 1993;17:363-6.
12. Büyükkşirin M, Polat G, Yüncü G ve ark. Göğüs duvarında tüberküloz soğuk absesi. *İzmir Göğüs Hastanesi Dergisi* 2004;18:93-6.

Yazışma Adresi

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