Chest Wall Pseudotumor: A Case of Non-Tuberculous Mycobacterial Infection

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Abstract

Non-tuberculous mycobacterial (NTM) infections are increasing worldwide, making them an international public health problem. Surgical management is often indicated for localized infectious disease; however, most surgeons are unaware of the potential risks of transmission during surgery. Herein, we report about a patient with a mass diagnosed as an NTM abscess involving the rib cage, which was confused with a malignant tumor and eventually diagnosed following surgical excision. This report emphasizes the need to be aware of the possibility of NTM infection and take appropriate precautions if the patient has a rapidly growing mass in the chest wall.

Keywords: Non-tuberculous mycobacteria; Chest wall; Pseudotumor; Infection

Case Presentation

An 88-year-old Asian female was referred to our hospital for evaluation and treatment of a tumor in the right lateral thoracic region. One month prior, she had a feeling of fullness and complained of localized pain and warmth in the right lateral thoracic wall. However, she did not present with fever, dyspnea, cough, hemoptyis, and fatigue or weight loss. Pain and warmth gradually resolved without intervention; however, the fullness was getting worse. The doctor whom she visited previously examined the lesion by ultrasonography and estimated it as a soft tissue tumor. She was under medication for Alzheimer’s disease, hypertension, and chronic heart failure, and had a 25 pack-year smoking history but she had already quit smoking 3 years prior. On admission, she was afebrile with stable vital signs and had a lump in the right lateral thoracic region. The lump was non-tender, soft, and immobile. Lymphadenopathy or palpable lymph nodes were not detected. Laboratory examination showed white blood cell counts of 7200µL and C-reactive protein level of 5.03 mg/dL.

Computed tomography (CT) scan showed a mass of approximately 65×30 mm (Figure 1A) with an osteolytic change, involving the right 8th rib. Although primary chest wall tuberculosis has been reported in different literatures, there is no report of an isolated NTM mass forming abscess with the osteolytic change in the chest wall.

The incidence and prevalence of NTM infections are increasing worldwide, making it an international public health issue [2]. NTM can cause a variety of medical problems, such as pulmonary disease, lymphadenitis, skin disease, and other extra pulmonary infections. Although primary chest wall tuberculosis has been reported in different literatures, there is no report of an isolated NTM mass forming abscess with the osteolytic change in the chest wall.

The route of infection in humans has not been completely understood, but the formation of aerosols that contain NTM arising from water, soil, and biofilm can be the sources of infection [3]. Surgical smoke, which is aerosol produced by surgical instruments, such as electrocautery scalpel, contains potentially harmful Mycobacterium avium.
substances and transmission of infectious diseases might occur when bacterial particles are inhaled [4]. Although it is unknown whether surgical smoke could be a route of NTM transmission, surgeons and operating room personnel should take appropriate precautions to protect themselves from secondary infection.

Generally, for the diagnosis of NTM disease, it is essential to exclude other infectious disorders. Therefore, it is frequently challenging and requires discussion among clinicians, radiologists, and microbiologists [5]. For localized NTM infections of the skin and subcutaneous tissue, the diagnosis is based on the microbial culture of the drainage material or tissue biopsy [6]. In the present case, based on the rapid growth rate and CT findings, a malignant chest wall tumor was strongly suspected, and the en bloc tumor resection was performed before establishing the definite diagnosis. We should have suspected the possibility of infectious diseases and performed simple, urgent and less invasive procedures, such as needle biopsy, and more advanced imaging tests before surgery for rapid management of the case and to decrease the risk of transmission.

Treatment of NTM infection is difficult owing to the relative lack of susceptibility to currently available antibiotics and the difficulty in enduring a prolonged course of multiple drugs because of their adverse effects [6,7]. Surgical management is often indicated in localized infectious disease, although the criteria for performing the surgery has not been clearly established [8]. In this case, the patient had no postoperative complications and there were no infectious events among those who were involved in this surgery. Complete surgical resection of the localized infectious lesions could be a viable option for patients who have the potential risk of multiple medications. Needless to say, the operation for infectious diseases must be performed under adequate precautions and infection control.

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