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Case report

A case report of tuberculous abscess of the chest wall accompanied with pulmonary carcinoma

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ABSTRACT

With the decreasing incidence of tuberculosis (TB), tuberculous abscess of the chest wall (TACW) is becoming rare. Pulmonary carcinoma coexisting with pulmonary TB has been reported in the past, but reports of pulmonary TB accompanied with TACW are scarce. We present the first case of a 66-year-old male with TACW accompanied with pulmonary carcinoma.

1. Introduction

Although Japan currently has an intermediate burden in terms of incidence of tuberculosis (TB), the number of patients with TB is decreasing because of advances in chemotherapy. The incidence of tuberculous abscess of the chest wall (TACW) is low and accounts for 1%–10% of skeletal TB cases [1,2]. Because of the rarity of TACW, treatment strategies involving surgery are controversial because extremely few cases have been reported.

Pulmonary carcinoma coexisting with pulmonary TB has been reported in the past [3–5], but the coexistence of chest TB and pulmonary carcinoma is rare. To the best of our knowledge, no reports on the coexistence of these diseases have been published in the English literature. We report a rare case of TACW accompanied with pulmonary carcinoma.

2. Case report

A 66-year-old man with no past history of pulmonary TB or immunocompromised status presented at the National Hospital Organization Shikoku Cancer Center with a chief complaint of a painless mass in his left chest wall. Computed tomography (CT) revealed an 8-cm tumor and peripherally enhancing fluid collection in the chest wall adjacent to the seventh and eighth ribs, without osteolytic change (Fig. 1A). A pulmonary nodule demonstrating a mixed ground glass opacity (GGO) measuring 19 × 15 mm in segment 4 of the left lung (Fig. 1B) was detected incidentary. Blood tests revealed that white blood cell count was within the normal range. Levels of C-reactive protein, carcinoembryonic antigen, and cytokeratin 19 fragments in the serum were 0.82 mg/dl, 2.2 ng/ml, and 1.4 ng/ml, respectively. Results of acid-fast staining from the sputum culture and the aspiration specimen were negative. The aspirated specimen from the chest wall tumor was positive for *Mycobacterium tuberculosis* (polymerase chain reaction). The tumor was therefore diagnosed as TACW. Pulmonary nodule was clinically diagnosed as lung cancer T1aN0M0 stage IA. Surgery was performed at the regional TB ward of the National Hospital Organization Ehime Medical Center.

Lingulectomy and lymph node dissection (levels 10 and 11) were performed. Video-assisted procedure was performed through a 6-cm access thoracotomy over the mid-axillary line in the fourth intercostal space, 1-cm access ports in the mid-axillary line in the

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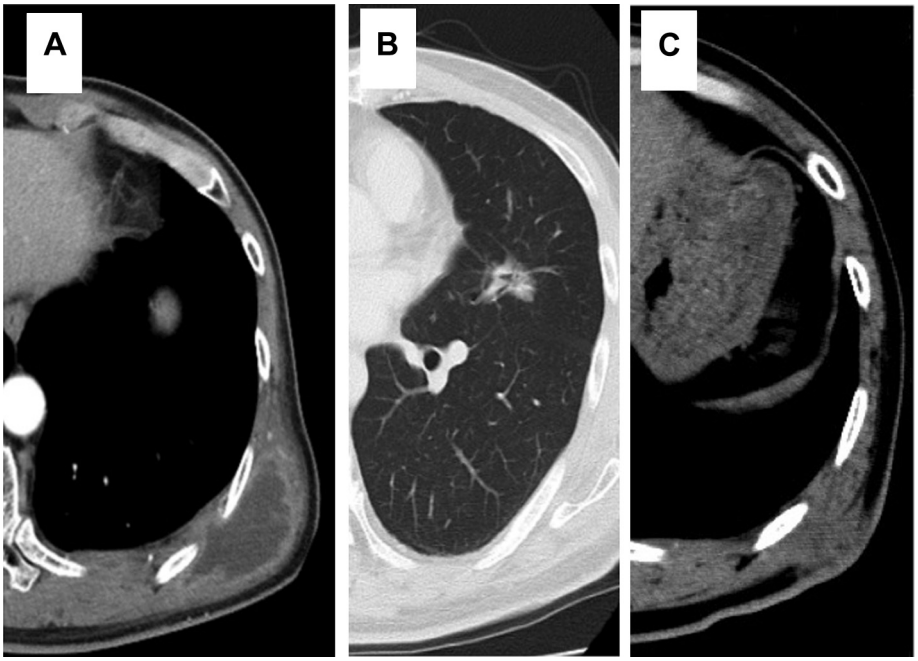

Fig. 1. A. Enhanced chest computed tomography (CT) showing a peripherally enhancing fluid collection in the chest wall adjacent to the seventh and eighth ribs. B. A mixed ground glass opacity was detected in segment 4 of the left lung. C. Chest CT 3 months after the surgery showing minimal inflammatory change.

sixth intercostal space and posterior axillary line in the fifth intercostal space. No penetration of the parietal pleura by the abscess was evident. Slight adhesion was found in the pleural cavity but not between the lower lobe and the parietal pleura adjacent to the abscess. For the abscess, debridement without rib resection was performed. Debridement of the necrotic tissue and the abscess wall was performed through another 5-cm incision right over the abscess. Chest wall cavity and the pleural cavity were drained with silicon drains. These were removed on postoperative day 5 and postoperative day 7 respectively. The postoperative course was uneventful. Antituberculous chemotherapy consisting of isoniazid (300 mg), rifampicin (600 mg), ethambutol (750 mg), and pyrazynamide (1.5 g) per day was initiated on postoperative day 14. The patient was discharged on postoperative day 17.

Histologically, GGO consisted of an adenocarcinoma mixed subtype (bronchioloalveolar carcinoma + papillary adenocarcinoma) without lymph node metastasis. Pathologically, the tumor was diagnosed as T1aN0M0 stage IA. Caseation necrosis surrounded by Langhans-type giant cells was seen in the specimen from the chest wall abscess, was compatible with tuberculoid granuloma. *M. tuberculosis* was identified in an 8-week culture of the pus from the abscess.

3. Discussion

Although Japan is a country with an intermediate TB burden, the incidence of TB is low. According to a World Health Organization report, the incidence of TB was 20 cases per 100,000 people per year in 2011. The development of effective anti-TB drugs has decreased the incidence of TB.

TACW is considered to be rare. Skeletal TB accounts for 2.6% of all TB cases [6]. TACW is found in 1%–10% of bony TB cases [1,2]. The incidence of TACW is low, and retrospective reports tend to include a small number of patients. The appropriate surgical treatment is controversial. In recent decades, some cases of TACW from East Asia have been reported, including a relatively large number of surgical cases (60–120 patients) with TACW, although these were retrospective studies [7–10]. Surgical methods in these reports include abscess debridement, complete excision with or without rib resection, and coverage using muscle flap. Relapses were reported in 2.5%–15% of patients in these series. However, the appropriate surgery according to the extent of the TACW lesion remains unclear. Rib resection may be too invasive in cases without destruction of bony structure. “Stain plombage procedure” presented by Sakakura and co-workers using saline solution of indigo carmine to fill the abscess cavity [11] may be helpful to identify the cyst wall when it is difficult to determine the range of surgical resection. In the present case, the abscess was simply localized and the adjacent rib was intact, and there was rapid shrinkage of the structures surrounding the TACW lesion (Fig. 1C). Therefore, debridement and drainage followed by antituberculous chemotherapy seemed to be the appropriate treatment. Recurrence is reported more than 5 years after treatment [8]. Thus, long-term follow-up is necessary in our case.

Coexistence of lung cancer and TACW is rare. However, coexistence of pulmonary carcinoma and pulmonary TB has been reported [3–5] in the past. The reported incidence of pulmonary carcinoma accompanied with TB is 1%–2% and that of pulmonary TB accompanied with pulmonary carcinoma is 1%–5% [5]. Metastasis or intrinsic factors may activate or cause recurrence of the TB lesion [3]. Coexistence of TACW and lung cancer has rarely been reported. To the best of our knowledge, this is the first reported case of the coexistence of these two diseases.

4. Conclusion

TACW is becoming a rare disease because of the decreasing incidence of TB. We report a case of chest wall TB accompanied with lung cancer. Coexistence of these diseases has not been previously reported.

Conflict of interest

The authors have no conflict of interest to disclose.

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