Case report

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

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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 intercostal space, 1-cm access ports in the mid-axillary line in the fourth intercostal space.
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.

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.

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.
References

[1] Davies PD, Humphries MJ, Byfield SP, Nunn AJ, Darbyshire JH, Citron KM, et al. Bone and joint tuberculosis. A survey of notifications in England and Wales. J Bone Jt Surg Br 1984;66(3):326–30.

[2] Newton P, Sharp J, Barnes KL. Bone and joint tuberculosis in Greater Manchester 1969–79. Ann Rheum Dis 1982;41(1):1–6.

[3] Fontenelle Lj, Campbell D. Coexisting bronchogenic carcinoma and pulmonary tuberculosis. Ann Thorac Surg 1970;9(5):431–5.

[4] Kim YI, Goo JM, Kim HY, Song JW, Im JG. Coexisting bronchogenic carcinoma and pulmonary tuberculosis in the same lobe: radiologic findings and clinical significance. Korean J Radiol 2001;2(3):138–44.

[5] Sakuraba M, Hirama M, Hebisawa A, Sagara Y, Tamura A, Komatsu H. Coexistent lung carcinoma and active pulmonary tuberculosis in the same lobe. Ann Thorac Cardiovasc Surg 2006;12(1):53–5.

[6] Enarson DA, Ashley MJ, Grzybowski S, Ostapkowicz E, Dorken E. Non-respiratory tuberculosis in Canada. Epidemiologic and bacteriologic features. Am J Epidemiol 1980;112(3):341–51.

[7] Paik HC, Chung KY, Kang JH, Maeng DH. Surgical treatment of tuberculous cold abscess of the chest wall. Yonsei Med J 2002;43(3):309–14.

[8] Kim YT, Han KN, Kang CH, Sun SW, Kim JH. Complete resection is mandatory for tubercular cold abscess of the chest wall. Ann Thorac Surg 2008;85(1):271–7.

[9] Deng B, Tan QY, Wang RW, He Y, Jiang YG, Zhou JH, et al. Surgical strategy for tubercular abscess in the chest wall: experience of 120 cases. Eur J Cardiothorac Surg 2012;41(6):1349–52.

[10] Keum DT, Kim JB, Park CK. Surgical treatment of a tuberculous abscess of the chest wall. Korean J Thorac Cardiovasc Surgery 2012;45(3):177–82.

[11] Sakakura N, Uchida T, Kitamura Y, Suyama M. En bloc resection of a large tuberculous abscess using the stann plombage procedure. Ann Thorac Surg 2013;95(1):348–51.