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A case of thymic basaloid carcinoma with rectal carcinoma

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ABSTRACT

INTRODUCTION: Thymic basaloid carcinoma is rare, as only about 40 reports have described it since the initial report. Thymoma and thymic carcinomas increase the risk of other malignancies, but concurrent thymic basaloid carcinoma and another malignancy has not been reported. We presented a rare case of thymic basaloid carcinoma with rectal carcinoma.
CASE PRESENTATION: Computed tomography revealed an anterior mediastinal mass and rectal wall thickening, and colonoscopy identified a rectal type 2 tumor in a 68-year-old man. Total thymectomy via a median sternotomy was performed, and the thymic tumor was histopathologically confirmed as stage II thymic basaloid carcinoma. Subsequent laparoscopic low anterior resection indicated stage IIIa rectal carcinoma. Adjuvant chemotherapy was administered for the rectal cancer.
DISCUSSION: Concurrent thymic and extrathymic tumors is rare condition. There are few reports of thymic basaloid carcinoma, and it is unclear whether this tumor, like common thymoma, increase the risk of extrathymic malignancies. Further studies in more patients are needed to elucidate the nature of this tumor.
CONCLUSION: To our knowledge, this is the first case report of thymic basaloid carcinoma concurrent another carcinoma. Aggressive treatment including surgery should be considered aiming at radical cure.

1. Introduction

Thymic basaloid carcinoma is rare, as only about 40 reports have described it since the initial report was published by Snover et al. in 1982 [1]. Thymoma and thymic endocrine cell carcinomas increase the risk of other malignancies [2]. However, thymic basaloid carcinoma that coexists with other types of cancer has not been described until now. Herein, we present a case of thymic basaloid carcinoma combining rectal cancer. This case report is in line with SCARE criteria [3]. The organization that manages the patient is a public hospital.

2. Case presentation

A 68-year-old Japanese man with no past medical, surgical, drug, family and psychosocial history was referred for treatment of an anterior mediastinal tumor that was discovered incidentally during computed tomography (CT) assessment to exclude pneumonia for the symptoms of cough and slight fever. He was 165 cm tall, weighted 76.0 kg, and physical examination revealed no abnormal findings. No symptoms were observed at the first visit to our hospital. All the laboratory data include tumor markers were within the normal ranges. We performed contrast CT from the chest to the pelvis for detailed examination of the mediastinal tumor and presence of other lesion. The CT revealed a 38 × 24 mm anterior mediastinal tumor which was enhanced at the equilibrium phase and in contact with the ascending aorta (Fig. 1a), which was suspected to be malignant. At the same time, wall thickness of rectosigmoid colon with a major axis of 5 cm and peritoneal lymphadenopathy were also identified coincidentally by the CT (Fig. 1b), suggesting a rectal cancer. Magnetic resonance imaging (MRI) showed a 38 × 30 mm mass (Fig. 2a) that was attached from the ascending aorta to the right atrial appendage (Fig. 2b), but infiltration was not apparent. Colonoscopy and barium enema revealed a Borrmann type 2 tumor (Fig. 3) in the rectosigmoid colon with a major axis of 5 cm and a distant 18 cm from anal verge. The findings of a biopsy did not indicate malignant, but the imaging findings obviously indicated a diagnosis of rectal cancer. The negative biopsy was considered to be simply because the tissue was not collected properly, so we diagnosed comprehensively the rectal tumor as a rectal cancer and decided not to re-biopsy. The Japanese guideline for colorectal cancer [4] recommends surgery first to rectal

Abbreviations: CT, computed tomography; MRI, magnetic resonance imaging.

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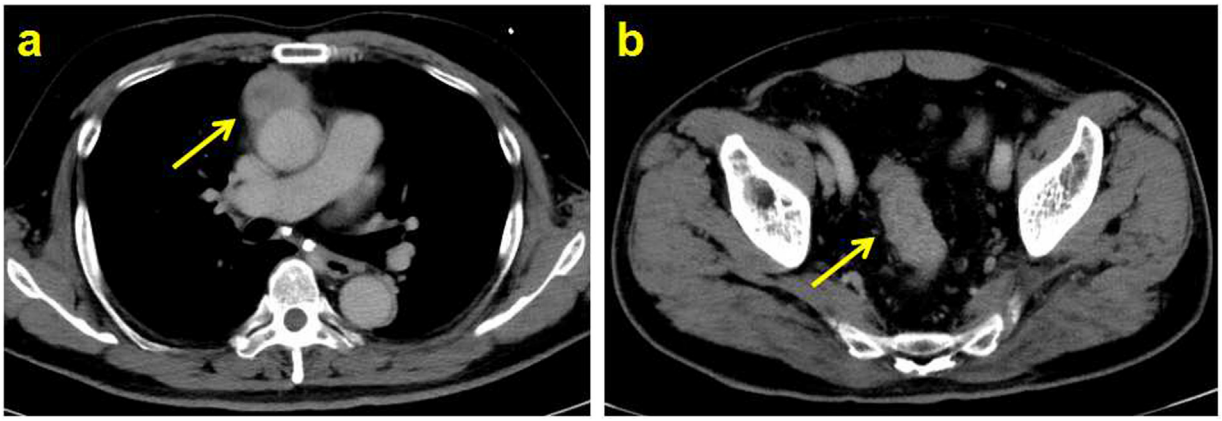

Fig. 1. Findings of chest and abdominal CT.
(a) Chest CT image shows anterior mediastinal tumor (38 × 24 mm; arrow). (b) Abdominal CT image shows wall thickness in rectum (arrow).

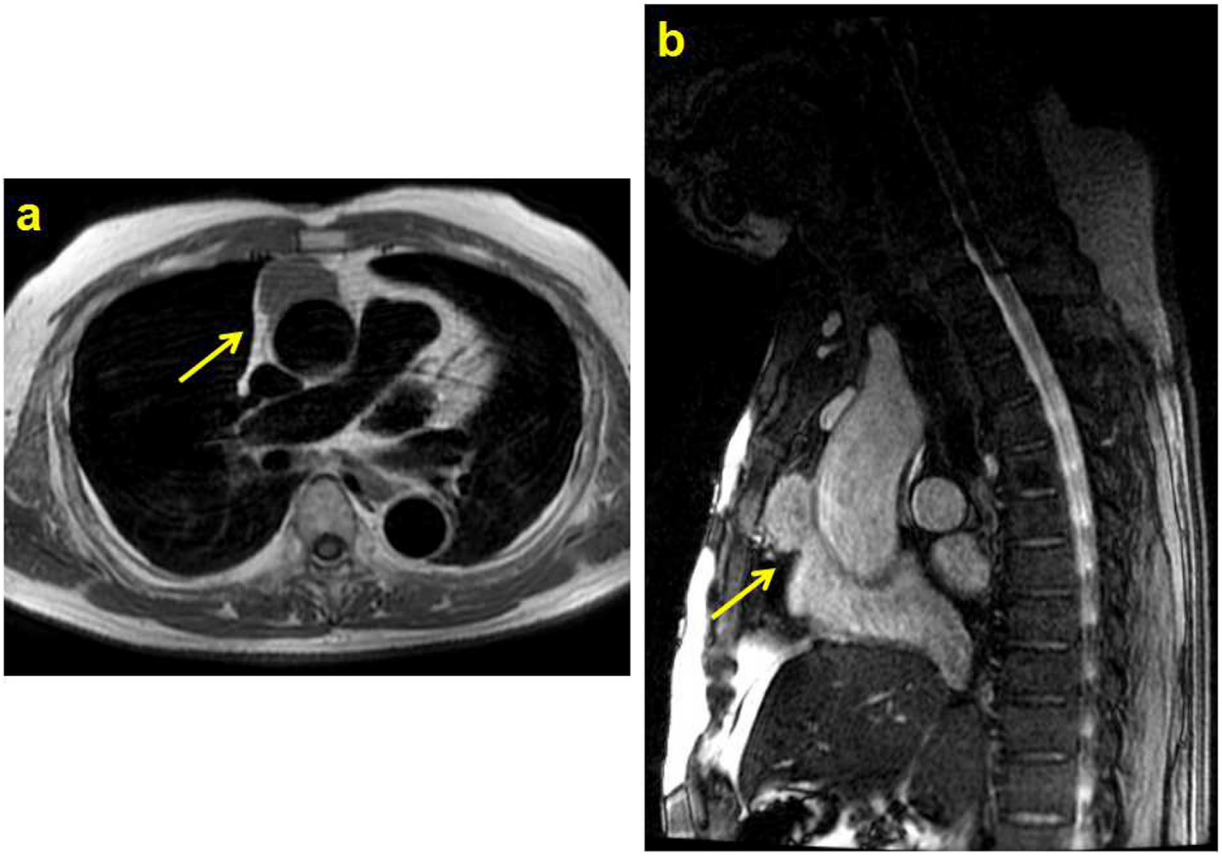

Fig. 2. Findings of MRI.
T1- (a) and T2- (b) weighted images show anterior mediastinal tumor (38 × 30 mm; arrows) in wide contact with ascending aorta to right atrial appendage.

cancer which has no distant metastasis, especially upper rectum. We considered that both tumors would be candidates for surgery. Anterior mediastinal surgery proceeded first due to a lower likelihood of postoperative complications. The treatment policy was explained to the patient, and he expressed his willingness to perform surgery. Total thymectomy via a median sternotomy included resection of the pleura and pericardium, as well as the excision of surrounding lymphoid tissues was performed by chief surgeon of respiratory surgery department. A small amount of pleural effusion was evident in the right thoracic cavity, but the results of an intraoperative rapid pathological assessment were negative for malignancy. A solid tumor measuring 50 × 50 × 25 mm was found in the right lobe of the thymus. Histopathologically, the tumor comprised round- to oval-shaped cells with a prominent peripheral palisading appearance (Fig. 4). Some tumor cells had invaded the peri-thymic fat tissue beyond the tumor fibrous capsule, but the pericardium was not infiltrated. The immunohistochemical findings were positive for p63, CD5, Bcl-2, CD117 and negative for chromogranin, synaptophysin and CD56. These findings were compatible with basaloid carcinoma. We diagnosed the tumor as stage II thymic basaloid carcinoma. The patient was discharged from the hospital ten days after first surgery without surgical complications. Laparoscopic low anterior resection proceeded by chief surgeon of digestive surgery department on day 23 after the thymectomy. The

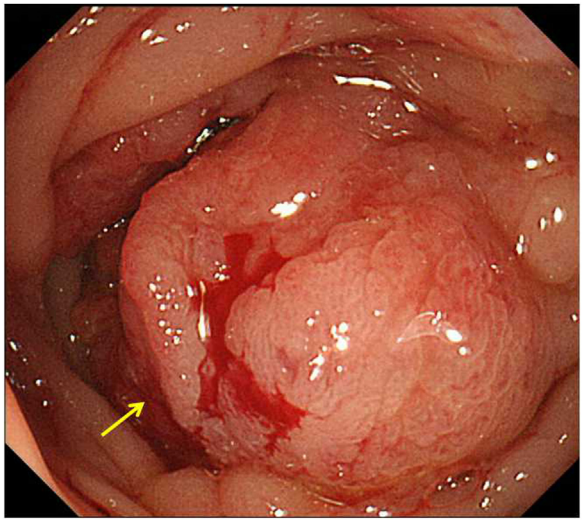

Fig. 3. Colonoscopy findings. Results show type II rectal tumor.

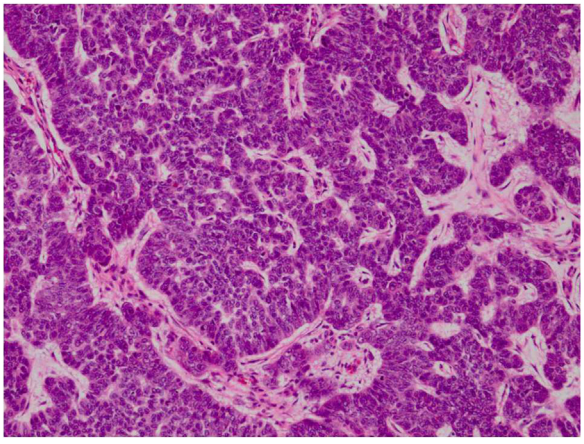

Fig. 4. Histological findings.
Tumor comprises round- to oval-shaped cells with prominent peripheral palisading appearance (H & E stain; magnification, ×100).

patient was discharged from the hospital nine days after second surgery without surgical complications. The pathological findings were stage IIIc moderately differentiated tubular adenocarcinoma. Although both thymic and rectal cancer were indicated for adjuvant therapy, we decided to perform adjuvant therapy for rectal cancer first because rectal cancer was at a more advanced stage. The patient was started on six-month course of postoperative adjuvant chemotherapy with capecitabine and oxaliplatin. Patient compliance was good through-out the treatment, and we assess patient tolerance by monitoring blood routine and vital signs. The patient declined to undergo subsequent postoperative radiotherapy for the thymic carcinoma, which remains under observation. The patient continues outpatient visit every three months for follow- up and remains free of thymic and rectal cancer recurrence at two years after surgery.

3. Discussion

Thymic basaloid carcinoma is rare, as only about 40 reports have described it since the initial report was published by Snover et al. in 1982 [1]. It is pathologically characterized by compact lobules of tumor cells with a prominent peripheral palisading appearance [1]. Suster et al. subdivided thymic carcinoma into high and low histological grades of malignancy, and thymic basaloid carcinoma is classified as a low-grade malignancy [5]. When a thymic tumor and a rectal tumor are detected at the same time, there are three possibilities: simultaneous occurrence of thymic tumor and rectal cancer, thymic metastasis of rectal cancer, and rectal metastasis of thymic cancer. Thymoma and thymic endocrine cell carcinomas increase the risk of other malignancies. It is said that other malignant tumors occur in about 30% of patients with thymoma, and colorectal cancer is the highest incidence [2]. On the other hand, there is only one report of thymic metastasis of colorectal cancer [6], and no report of colorectal metastasis of thymic cancer. Therefore, co-occurrence of thymoma and rectal cancer is most likely and if possible, both should be radically operated. Even when surgery is not indicated, a differential diagnosis should at least be obtained from a biopsy when a thymus tumor is found with other types of cancer. There is no evidence of surgery priorities when thymoma and rectal cancer are detected at the same time, and which surgery is performed first may vary in each case. The complication frequency of open thymectomy is about to 12–14%, recently described as a comparison for thoracoscopic or robotic surgery [7–9]. While the complication frequency of low anterior resection is about to 22–25% [10,11]. Although there are no papers that directly compared each other, low anterior resection appears to have a higher complication rate than thymectomy. Also empirically, low anterior resection was considered to have a higher frequency of complications such as surgical site infection, ileus, and anorexia than thymectomy, so we performed thymectomy first. As a result, surgery for rectal cancer could be performed as early as 23 days after thymus surgery, which seems to be a reasonable decision. The histopathological findings of stage II thymic cancer and stage IIIc rectal cancer indicated a higher risk of rectal cancer recurrence, which warranted the administration of adjuvant chemotherapy. Postoperative radiation therapy after complete resection for thymic carcinoma apparently improves prognosis [12]. Although a postoperative adjuvant therapy regimen has not been established for thymic basaloid carcinoma, metastasis and recurrence have occurred [13], even after curative resection for stage II thymic basaloid carcinoma [14]. Although thymic basaloid carcinoma is considered to be associated with relatively good prognosis, adjuvant therapy after surgery might be a more effective strategy. Thymic basaloid carcinoma that coexists with other types of cancer has not been described until now. Further studies in more patients are needed to determine whether this tumor increase the risk of other malignancies similar as common thymoma.

4. Conclusion

Little is known about thymic basaloid carcinoma and the prognosis has not been confirmed. The frequency of concurrence with other malignant tumors requires clarification through accumulated experience with more patients. Concurrent thymic and extrathymic tumors is rare condition. To our knowledge, this is the first case report of thymic basaloid carcinoma concurrent another carcinoma. Aggressive treatment including surgery should be considered aiming at radical cure.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

The authors have no ethical conflicts to declare.

Consent

Whitten informed consent was obtained from the patient for publication of this case reports and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

AF prepared the manuscript. YS and MM operated on the patient. MM followed up the patient. All authors read and approved the final version of the manuscript.

Registration of research studies

Not applicable.

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