

## Squamous Cell Carcinoma Arising in a Thymic Cyst – A Brief Case Report –

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We present here the case of a 73-year-old man with squamous cell carcinoma that arose in a thymic cyst, and this was incidentally found by chest radiography. Computed tomography revealed a 3.6 cm-sized predominantly cystic lesion with a mural nodule at the antero-superior mediastinum. The resected specimen was a well demarcated cystic mass with a solid mural nodule. Microscopically, the nodule was determined to be invasive squamous cell carcinoma that had originated from the benign squamous epithelium lining the thymic cyst.

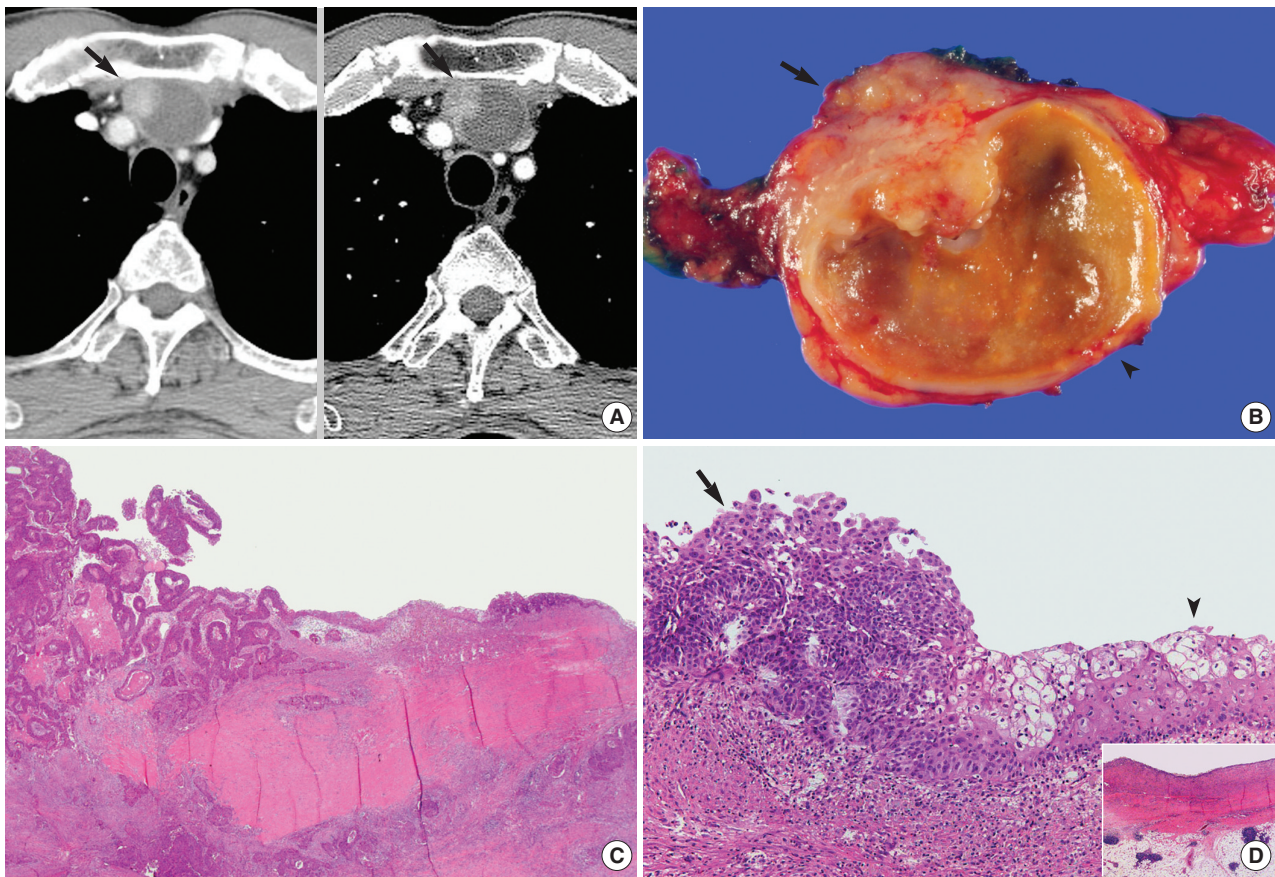
**Key Words :** Squamous cell carcinoma; Thymic cyst; Mediastinal neoplasm

The occurrence of a thymic carcinoma within a thymic cyst is quite rare. Only a few cases have been reported and there has been no such report from Korea. The previously reported cases have described various types of carcinoma arising from thymic cysts, such as adenocarcinoma, basaloid carcinoma and squamous cell carcinoma.<sup>1-6</sup> However, there have been only four previously reported cases of squamous cell carcinoma arising within a thymic cyst.<sup>1,3-5</sup> We present here a unique case of squamous cell carcinoma that arose in a thymic cyst.

### CASE REPORT

A 73-year-old man was admitted to our hospital because of an anterior mediastinal lesion that was found incidentally on a chest radiograph during a routine health check-up. The initial CT revealed a 3.6 cm sized, mainly cystic lesion that contained a mural nodule at the anterosuperior mediastinum (Fig. 1A, left), and a follow-up CT scan performed 6 months later revealed that

although the size of cystic lesion was unchanged, the mural nodule had increased in size (Fig. 1A, right). The radiologic impression was that of a cystic thymoma, but the possibility of malignancy could not be excluded. The physical examination and laboratory findings were unremarkable. The patient was a heavy smoker, with a 20 pack-year history of cigarette consumption. Mass excision via a partial sternotomy was performed. The resected mass was mainly composed of a cystic tumor that measured 6 × 4 cm, and the cystic tumor contained a solid mural nodule that measured 2.5 × 2 cm (Fig. 1B). A microscopic examination revealed that the solid nodular lesion was squamous cell carcinoma (Fig. 1C), and it had originated from the benign squamous epithelium lining the cyst (Fig. 1D). The remaining epithelial lining was made up of flattened squamous epithelium or denudated epithelium, and thymic tissue was identified in the wall of the cyst (Fig. 1D, inset). After the operation, he recovered well without any postoperative complications, and there has been no evidence of recurrence of tumor or metastasis during the 3 month following the surgery.



**Fig. 1.** (A, left) Initial CT delineates a well demarcated cystic mass containing a solid mural nodule in the anterior mediastinum (arrow). (A, right) Follow-up CT scan reveals that the mural nodule had increased in size (arrow). (B) The cut section shows a white/tan firm mural nodule (arrow,  $2.5 \times 2 \times 2$  cm) in the wall of unilocular thymic cyst (arrow head,  $6 \times 4 \times 4$  cm). (C) Low magnification photomicrograph reveals the nodule to be invasive squamous cell carcinoma (left and bottom), and partly polypoid growth in the cyst. (D) High magnification photomicrograph shows the junction between the squamous cell carcinoma (arrow) and the benign epithelium of the thymic cyst (arrow head). The remaining epithelial lining is made up of flattened squamous epithelium or denuded epithelium, and the wall of the cyst shows thymic tissue (inset).

## DISCUSSION

Malignant transformation within a thymic cyst is rare. Leong *et al.*<sup>4</sup> reported the first documented case of well-differentiated papillary squamous cell carcinoma that arose within a preexisting thymic cyst, and several other cases of malignant tumors associated with thymic cysts have subsequently been reported.<sup>1-3,5,6</sup> The most common type of carcinoma to arise in this manner is basaloid carcinoma. Zaitlin *et al.*<sup>6</sup> showed that 5 of 9 such tumors were basaloid carcinoma in the literature review they included in their case report. We report here on the case of a 73-year-old man with thymic squamous cell carcinoma that developed within a thymic cyst, and our patient is the oldest man among the previously reported patients, who ranged in age from 38 to 65 years.<sup>2,6</sup> These cysts may be unilocular, but they are more commonly multilocular.<sup>6</sup> Unilocular thymic cysts are usually con-

genital and their epithelial surfaces are often flat and they consist of only a few layers of bland squamoid cells. In our case, the cyst was unilocular, but it had an irregular thick wall that was lined with bland squamous epithelium especially at the transformation junction between the carcinoma and the thymic cyst. Zaitlin *et al.*<sup>6</sup> reported a similar case of an unilocular cyst with an irregular thickened wall, which raised the suspicion of malignancy.

Thymic carcinoma associated with a thymic cyst must be distinguished from thymic carcinoma with cystic degeneration because the former tumor may behave differently from conventional thymic carcinoma. One case of a well differentiated thymic carcinoma with extensive cystic degeneration has been reported.<sup>7</sup> The histologic differential points between these two cystic tumors concern the presence of a benign squamous epithelium lining the cyst and transition between the cystic and carcino-

matous components. Although the development of thymic carcinoma within a thymic cyst is rare, it should be included in differential diagnosis when an anterior mediastinal cystic lesion is found to contain a solid mural nodule.

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