

# Spinal Metastasis of Thymic Carcinoma: Experience in 7 Consecutive Cases

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## Introduction

Thymic carcinomas are very rare tumors with often extrathoracic metastasis to other organs. But it is widely known that they are rarely metastasis to the spine. So the prognosis, treatment and natural course of this disease are not yet standardized. We reported 7 consequence spinal metastasis with TC patients experienced in our clinic and discussed about their treatment, results and survivals.

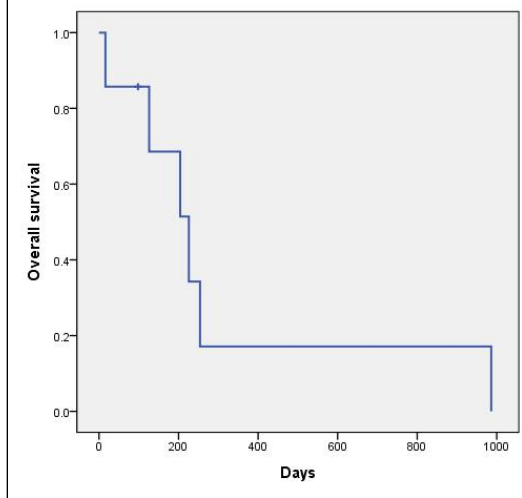
## Methods

We describe 7 thymic cancer patients with spinal metastasis, they were diagnosed and treated in our institute from January 2008 to December 2011. They were radiographically evaluated using plain radiographs, CT and MRI. Bone scintigraphy and PET-CT, as well as the chest and abdomen CT were also performed to evaluate systemic metastasis. We performed surgical treatment carefully selected based on the following surgical indications: 1) more than 3-6 months of life expectancy predicted by medical oncologists, 2) presence of indurable severe pain that do not controlled with analgesics 3) presence of neurologic deficit including weakness of extremities, and adjuvant treatment, either chemotherapy or radiation therapy, in consideration of individual disease course. And we regularly followed-up the patients. The length of follow-up was defined as the period from the date of surgery to the patient's most recent clinic visit.

## Results

Mean age was  $53.86 \pm 4.21$  years old, and mean follow up period was  $207.28 \pm 131.65$  days. Of 7 patients, 6 had metastases at thoracic spine, and 1 had at lumbar spine. After surgery, their mean survival was  $397.86 \pm 244.62$  days. Date from primary diagnosis to spinal metastases varied widely. Mean interval was  $1840 \pm 1772$  days. Four patients with epidural metastasis compressing spinal cords had posterior approach decompressive laminectomy and tumor removal following pedicle screw fixation. We had two patients with tumor metastases to intradural space and they had laminectomy and removal of intradural extramedullary tumor. One patient with vertebral body metastasis and pathologic fractures without epidural compression underwent pedicle screw fixation to prevent progression of pathologic fractures. During the surgery, the mean estimated blood loss was  $628.57 \pm 655.65$ cc and the mean operation time was  $293.24 \pm 88.00$  minutes. Of 7 patients, 1 patient had been lost and 6 patients died. 4 patients died from pulmonary complications, one patient died from brain metastases despite of whole brain radiotherapy and gamma knife surgery at metastatic lesions, and one patient underwent debulking surgery of thymic carcinoma fully occupying whole left lung field. After surgery, massive bleeding occurred at surgery site causing hypovolemic shock that lead to death.

Kaplan-Meier overall survival graph of 7 patients



## Conclusions

According to our study, we suggest that surgical management should be performed for improvement of neurologic status and survival outcome in spinal metastasis and thymic carcinoma should be considered in the differential diagnosis in patient with spinal metastasis.

## Learning Objectives

By the conclusion of this session, participants should be able to : 1) be considered in the differential diagnosis in patients who have developed spine metastasis and be known the natural history of spinal metastasis in thymic carcinoma. 2) discuss the individual experience in the spinal metastasis of thymic carcinoma, 3) identify an effective treatment for patient's quality of life.

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