

EDITORIAL

Necessity of preoperative bone scintigraphy for cT1N0 lung cancer: Evidence from retrospective to prospective study

Li and colleagues have presented an interesting article on the management of preoperative bone scintigraphy (BS) for patients suspected of early-stage lung cancer.¹ In general, bone metastases (BM) are commonly seen in patients of advanced lung cancer with an incidence that is reported as 20–40%. Patients with BM are seldom asymptomatic, and present bone pain that could occur at any time during their cancer life. Thus, a bone evaluation, such as ^{99m}Tc BS, should be performed if BM is suspected. However, the incidence of BM for patients who are suspected to have early-stage lung cancer remains unclear. Kuchuk and colleagues² reported the incidence of BM in clinical stage I patients who have received initial treatments as 20%. In a large sample study, Li and colleagues³ investigated this issue and reported that the incidence of BM in cT1N0 lung cancer was only 0.94% ($N = 739$) by using ^{99m}Tc BS preoperatively. In clinical practice, few bone metastases were found in suspected early-stage lung cancer patients during the preoperative staging process. Based on the clinical findings, many thoracic experts in Chinese high-volume centers have been discussing the necessity of BS for small pulmonary nodules, such as ground-glass opacity (GGO).

In mainland China, the number of pulmonary nodules with a GGO component is increasing yearly. Most of them are detected by lung cancer screening or incidentally found without any symptoms. Among the patients who might receive surgical treatment, the most common pathological finding would be stage I lung adenocarcinoma. Although adenocarcinoma is the most frequent subtype for BM, no evidence indicates the significance of BS in the preoperative workups for cT1N0 patients. In Li's article, they enrolled cT1N0 subsolid lung cancer patients and reported that none of the patients ($N = 691$) had positive BS results and no surgical plans were changed by BS findings. In our opinion, this article may bring an improvement in clinical practice, considering that (a) this is a prospective multicenter cohort study; (b) the enrolled patients included both pure GGO and part-solid nodule; and (c) the pathological diagnosis included invasive adenocarcinoma and mucinous adenocarcinoma.

In the national comprehensive cancer network (NCCN) guideline,⁴ an ¹⁸F-fluorodeoxyglucose (¹⁸FDG) positron emission tomography/ computed tomography (PET/CT)

scan is recommended for all clinical stages, and the routine use of bone scans (to exclude bone metastases) is not recommended. The results from a meta-analysis⁵ showed that ¹⁸FDG PET/CT has a higher diagnostic value for diagnosing BM from lung cancer than ¹⁸FDG PET and BS. Considering the cost efficiency and accessibility, thoracic surgeons in China use more BS than PET/CT as the primary examination for BM in preoperative evaluation. Li's article concluded that ^{99m}Tc BS is unnecessary in the preoperative workup for patients with cT1N0 subsolid lung cancer. The next question is therefore, in a developing country such as China, despite PET/CT, is there an alternative preoperative examination for bone evaluation for cT1N0 lung cancer? As for further speculation, the possibility of finding an appropriate method (such as molecular biology and liquid biopsy) to detect micro-metastases for suspected clinical early-stage lung cancer may impact treatment in the future. This article provides a good example to discuss the current clinical problems in the regional area, especially with the cooperation of multiple centers. We hope more high-quality multicenter studies like this article will focus on practical issues.

DISCLOSURE

The author declares no competing interests.

Wenjie Jiao
Tong Qiu

Department of Thoracic Surgery, The Affiliated Hospital of Qingdao University, Qingdao, China

Correspondence

Wenjie Jiao, Department of Thoracic Surgery, The Affiliated Hospital of Qingdao University, Qingdao 266000, China.
Email: jiaowj@qduhospital.cn

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