

Many factors determine prognosis in resected lung cancer. Is visceral pleural involvement one of them?

Prognosis after pulmonary resection for primary lung cancer is closely related to tumor stage, since stage predicts the risk recurrence. Lung cancer staging is based on the TNM system that evaluates tumor size and contiguous tissue infiltration (T), nodal involvement (N) and distant metastasis (M).

Early stage tumors are not likely to develop recurrences, therefore these patients are not referred to any other therapy after surgery. On the contrary, adjuvant postoperative chemotherapy is mandatory in advanced stages to reduce the risk of recurrence. According to these general criteria, observation is recommended for patients with T1ab, N0 tumors with negative surgical margins (R0) and patients with T2ab, N0 tumors with negative surgical margins. Adjuvant chemotherapy is recommended for patients with negative surgical margins and stage II disease, including 1) T1ab–2a, N1; 2) T2b, N1; or 3) T3, N0 disease. Adjuvant chemotherapy can also be used in patients with stage III NSCLC who have had surgery.

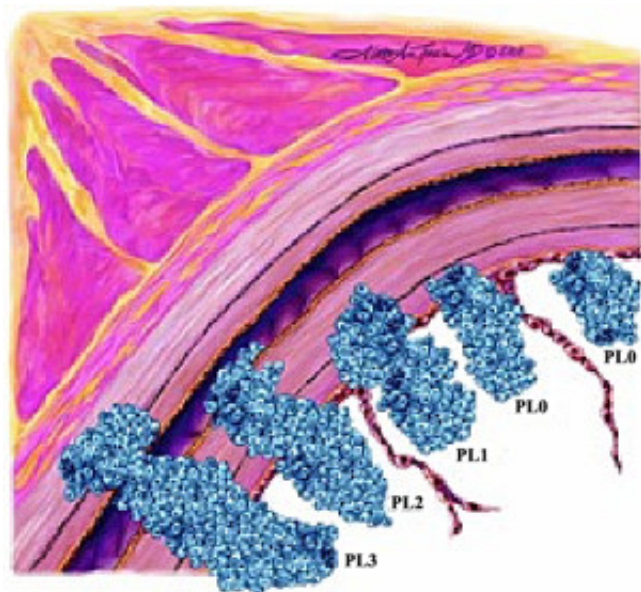


Fig. 1. Visceral pleural invasion.

Source: Travis, William D. et al., *Journal of Thoracic Oncology*: December 2008 - Volume 3 - Issue 12 - pp 1384-1390

Moreover, adjuvant chemotherapy is a category 2A recommendation for IB and IIA patients with high-risk features (including poorly differentiated tumors, vascular invasion, wedge resection, tumors > 4 cm, visceral pleural involvement [VPI], and incomplete lymph node sampling [Nx]) despite nodal involvement absence and T less than 3 cm.

Our attention is focused on VPI because it determines if a tumor will move from T1 to T2ab and be upgraded in stage IB or IIA.

The main topic is if the influence of VPI on prognosis is significant also in less than 3 cm tumors. In fact, conversely to the official TNM system, some Authors have suggested that VPI does not influence survival. They think that > 3 cm tumors have a worse prognosis because of the size itself, independent of VPI. Therefore, they do not support the upstage to T2ab and related adjuvant chemotherapy in cases of VPI in less than 3 cm tumors.

To reach a definitive recommendation, Huang and Co-workers published an interesting meta-analysis investigating the role of VPI as a prognostic factor in resected stage I NSCLC. Their results showed that VPI was associated with a poorer overall survival and with a higher risk of recurrence in stage I patients. Moreover, they found that VPI was independent from tumor size and histology type in affecting overall survival (OS) and recurrence-free survival (RFS). Therefore, they support T2 upstaging in cases of VPI independent of tumor size and suggest the use of adjuvant treatment (such as for stage II patients) independent of histology.

Our main concern is their method for including patients in their study. The authors declared that confounding factors such as the type of operation were adjusted, but they did not report any data about margins and nodal dissection. However, it is common opinion, that the kind of resection, the extent of the margins and the hilar nodal dissection are significant factors in determining OS and RFS. Furthermore, these data are essential when comparing less than 3 cm tumors since nowadays many different surgical approaches are adopted for their management (open vs VATS, anatomical vs non-anatomical resection, lobar vs sublobar resection).

Our second concern is the heterogeneity of VPI diagnostic methods adopted by pathologists in the studies included in this meta-analysis. The results from Huang and Co-Workers are interesting but the biases make their conclusions too weak to provide a definitive statement about the prognostic impact of VPI in small tumors. However, their conclusions are consistent with the TNM system data and the most important medical association consider VPI a high-risk feature deserving of adjuvant chemotherapy. Therefore, we think that more data are needed before removing T upstage for less than 3 cm tumor presenting VPI.

Alessandro Baisi MD, Federico Raveglia MD, ¹Matilde De Simone MD PhD, ¹Ugo Cioffi MD PhD

*Thoracic Surgery Unit, Azienda Ospedaliera San Paolo, University of Milan
¹Dept. Surgery, University of Milan*

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Baisi A, Raveglia F, De Simone M, Cioffi U

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