

Modern techniques for staging lung cancer – improved precision but too late for too many

Despite many advances in pulmonary medicine over the years, lung cancer remains a major ongoing concern. Mortality due to lung cancer is high, with the 5-year survival of advanced disease being very close to zero. Early disease has better survival rates, with tumours <1 cm having up to 92% 5-year survival, but larger tumours and nodal spread rapidly decrease the prospect of cure.^[1] Approximately 25% of patients present with potentially curable disease in Europe and USA;^[2] this figure is very much lower in Western Cape Province, South Africa (SA), with 14.5% in 2009^[3] and 6.3% reported by Parker *et al.*^[4] in this issue.

Staging is an essential component in the decision-making process in the management of lung cancer because accurate staging allows more precise determination of effective therapy and minimises morbidity due to unnecessary surgical procedures. Traditional staging has been with computed tomography (CT) and lymph node sampling by procedures such as mediastinoscopy. The article by Parker *et al.*^[4] elegantly describes the utility of newer modes of assessment including positron emission tomography combined with CT (PET-CT) and endobronchial ultrasound transbronchial needle aspiration (EBUS-TBNA). These non-invasive or relatively well-tolerated procedures were effective in improving the accuracy of staging with both up- and downgrading of clinical staging. Only 1.2% of patients were ultimately thought to be suitable for surgical resection, with >80% having advanced disease.

The role of new techniques in refining staging is commendable in decreasing morbidity and even unnecessary surgical mortality. However, the majority of patients present with advanced disease, and palliative care is usually the only recourse. The decline over 10 years in the number of patients presenting with potentially curable disease is very worrying.

Much of the delay in identifying early disease is likely to be due to problems in the healthcare system, with several potential choke-points along the way. Measures implemented at the tertiary level, such as expedited clinic bookings and arrangements whereby CT scans and biopsy procedures are performed within 3 weeks of request, are effective only when early referral into these pathways is possible.

The major problem is how to get patients referred who have early disease. There are two main routes for case detection: clinical case-finding or population screening. Unfortunately, cough, weight loss, slowly resolving infections and other nonspecific symptoms are all too common in an area where there is a very high prevalence of tuberculosis, HIV reactivity and cigarette smoking. Crowded primary healthcare facilities, with limited time for clinical interaction, exacerbate the problem. Increased awareness of lung cancer is essential, but probably

inadequate alone. Clinical detection of lung cancer often occurs when disease is quite advanced.

Clinical and chest X-ray screening for lung cancer have been shown to be ineffective.^[5] Low-dose CT (LDCT) has been shown to be able to detect early lung cancers and to reduce lung cancer mortality.^[6] The SA Thoracic Society has published firm recommendations for the use of LDCT screening in SA, targeting high-risk individuals (aged 55 - 74 years, current or ex-smokers with >30 pack-years smoking history). A conservative threshold for invasive sampling was recommended because of the high prevalence of TB and post-TB lung disease.^[6] Limitations to the widespread implementation of LDCT screening include the need for expertise, and cost, but this remains one of the very few real interventions for facilitating early intervention in lung cancer.

The ideal approach to lung cancer management should include increased societal, patient and clinician awareness of the problem and the need for early diagnosis. This, coupled with all of the modern technologies described, including LDCT screening, PET-CT and EBUS-FNAB, should result in far better outcomes for patients with lung cancer.

R I Raine, MB ChB, MMed

Division of Pulmonology, Department of Medicine, Groote Schuur Hospital and University of Cape Town, South Africa

richard.raine@uct.ac.za

1. Deterbeck FC, Boffa DJ, Kim AW, Tanoue LT. The eighth edition lung cancer stage classification. *Chest* 2017;151(1):193-203. <https://doi.org/10.1016/j.chest.2016.10.010>
2. Lang-Lazdunski L. Surgery for non-small cell lung cancer. *Eur Respir Rev* 2013;22(129):382-404. <https://doi.org/10.1183/09059180.00003913>
3. Nanguzgambo AB, Aubeelack K, von Groote-Bidlingmaier F, et al. Radiologic features, staging, and operability of primary lung cancer in the Western Cape, South Africa: A 1-year retrospective study. *J Thorac Oncol* 2011;6(2):343-350. <https://doi.org/10.1097/jto.0b013e3181fd40ec>
4. Parker MA, Moolla MS, Paris GE, Koegelenberg CFN. Staging and operability of primary lung cancer in the Western Cape Province, South Africa. *Afr J Thoracic Crit Care Med* 2022;28(1):20-24. <https://doi.org/10.7196/AJTCCM.2022.v28.i1.151>
5. Berlin NI, Buncher CR, Fontana RS, Frost JK, Melamed MR. The National Cancer Institute Cooperative Early Lung Cancer Detection Program. Results of the initial screen (prevalence). *Early lung cancer detection: Introduction. Am Rev Respir Dis* 1984;130(4):545-549. <https://doi.org/10.1164/arrd.1984.130.4.545>
6. Koegelenberg CFN, Dorfman S, Schewitz I, et al. Recommendations for lung cancer screening in Southern Africa. *J Thorac Dis* 2019;11(9):3696-3703. <https://doi.org/10.21037/jtd.2019.08.66>

Afr J Thoracic Crit Care Med 2022;28(1):6-7. <https://doi.org/10.7196/AJTCCM.2022.v28i1.209>