While Waiting to Buy a Ferrari, Do Not Leave Your Current Car in the Garage!

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The possibility to sample the mediastinum does probably represent the most important progress associated with the practice of diagnostic bronchoscopy in the last 25 years. Transbronchial needle aspiration (TBNA) is a well-recognized, cheap and safe procedure, which has spared a huge number of patients the costs and risks of unnecessary diagnostic or therapeutic surgical procedures [1]. More recently, the swift development of health care technologies has provided the interventional pulmonologists with the opportunity to overcome the only great flaw of TBNA, i.e. its 'blindness'. Real-time endobronchial ultrasound-guided TBNA (EBUS-TBNA), in fact, allows the examiner to localize with exquisite detail the mediastinal structures, and to sample the lymph nodes with great accuracy, while avoiding the great vessels [1]. There is a robust and growing body of literature demonstrating that EBUS-TBNA offers substantial diagnostic advantage over conventional TBNA, especially for small lymph nodes (<1.5 cm) and specific lymph node stations (e.g. 2 R-L and 4L) [2, 3]. These characteristics make EBUS-TBNA significantly better than conventional TBNA as a method for mediastinal staging of lung cancer in patients with a low prevalence of lymph node metastases, which basically include most candidates for surgery [3–5]. Unfortunately, however, EBUS-TBNA is quite expensive in capital and running costs, and its availability is not yet widespread. For those who still can just dream

to buy EBUS-TBNA, given the period of limited economic resources, the better bet is to use conventional TBNA in a rational way, in order to try and keep the diagnostic success rate high, while containing the costs.

In this view, studies like the one by Medford et al. [6] published in this issue of *Respiration* are certainly welcome. They analyze performance characteristics and cost utility of TBNA in two cohorts of patients with different pre-test clinical probability of malignancy, [6]. Over the 2-year study period, the authors tried, deliberately, to select two different study populations: in the 1st year, in fact, they enrolled a clinically unselected cohort of patients with enlarged mediastinal nodes (38 patients, prevalence of malignancy: 71%), whereas in the 2nd year they selected only patients with a high pre-test clinical probability of malignancy (41 patients, prevalence of malignancy: 95%). Patients with a negative TBNA were systematically submitted to mediastinoscopy, unless they were unfit for surgery and had a reliable diagnosis of malignancy obtained with other sampling methods (e.g. bronchial biopsy or transthoracic needle aspiration).

Overall sensitivity and accuracy of TBNA were high (78 and 84%, respectively), especially in the group with a high prevalence of malignancy (86 and 87%, respectively). Mediastinoscopy could be avoided in 25% of patients (up to 37% of patients in the high-prevalence cohort). According to the authors' calculations, their diagnostic ap-

proach to mediastinal adenopathy routinely including TBNA was cost saving by an estimated 556 GBP/patient in the whole population, and by 809 GBP/patient in the high-prevalence cohort.

This interesting study has, however, some drawbacks. Mainly, the attempt to select two different study populations was only partially accomplished. In fact, the prevalence of malignancy is very high both in the whole cohort (84%) and in what should be the 'low-prevalence' group (71%). The excellent performance characteristics of TBNA in patients with such a high prevalence of malignant nodes is already well known [4, 5]. Second, the authors used the preparation method for TBNA specimens known as the 'flush technique', which has been suggested to be inferior to the more popular 'smear technique' [7], especially in the setting of granulomatous diseases [8]. Furthermore, they did not use histology needles that may further improve sensitivity, especially in benign diseases [9]. These choices did likely contribute to the unrealistic diagnostic yield of 0% in the patients with granulomatous diseases (sarcoidosis and tuberculosis) of this series, being in clear contrast with recent literature data [10, 11].

Such disappointing yield is, in turn, the main cause for the lower sensitivity and accuracy of TBNA in the low-prevalence cohort (66 and 78%, respectively), where the large majority of such granulomatous cases did likely belong, as compared to the high-prevalence group (84 and 86%, respectively).

Despite these drawbacks, this study confirms once more that TBNA is sensitive and cost sparing when it is used during the first routine bronchoscopy with diagnostic and staging purposes, especially when the pre-test probability of pathologic involvement of the nodes we are about to sample is high. In this regard, any effort should be made to promote the use of TBNA among the bronchoscopists and to include its teaching, on a regular basis, in training programs for pulmonary fellows [12, 13]. Results will definitely come. The lack of EBUS-TBNA cannot be a reason not to sample a subcarinal or a right paratracheal enlarged node during the initial bronchoscopic examination. While waiting to be able to afford a Ferrari (EBUS-TBNA), do not leave your current, reliable car (TBNA) in the garage!

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