published in the *Journal of the American Medical Association*, is probably the first study to prospectively compare the two techniques and also the first to validate the results of EUS-FNA with findings of surgical pathology.

One hundred evaluable patients with proven NSCLC, without signs of metastasis, underwent preoperative staging with EUS-FNA and mediastinoscopy, followed by thoracotomy if mediastinoscopy was negative. The preoperative test results were compared with postoperative surgical–pathological staging. Combined EUS-FNA and mediastinoscopy detected stage N2/N3 lymph node metastasis or stage T4 mediastinal tumor invasion in 36 patients, compared with 28 patients using EUS-FNA alone and 20 patients using mediastinoscopy alone. EUS-FNA did, however, reveal false-positive results in two patients, as a result of misinterpretation of EUS-FNA images. The results of this trial demonstrated that 16% of the thoracotomies performed on this cohort of patients were unnecessary. The authors advocate that EUS-FNA be adopted as a component of the early preoperative staging procedure for NSCLC.

Alexandra King

Original article Annema JT *et al.* (2005) Endoscopic ultrasound added to mediastinoscopy for preoperative staging of lung cancer. *JAMA* **294:** 931–936

Induction of antitumor immunity by partial resection and combination adjuvant therapy

Resection of advanced solid tumors is rarely successful because there is a high degree of local recurrence and growth of previously undetectable micrometastases. Postsurgical adjuvant therapy (immunotherapy or chemotherapy) used in an attempt to destroy these residual cancer cells has met with limited success. Because of this, many patients with extensive disease are not considered candidates for surgery. Results from a recent animal study, however, suggest that, rather than being detrimental, partial debulking of solid tumors might actually elicit beneficial anti-tumor memory if followed by combination adjuvant therapy.

In this study, mice inoculated with mesothelioma-based tumor cells underwent either tumor debulking surgery or complete resection followed by combination therapy of chemotherapy (gemcitabine) plus immunotherapy (anti-CD40), or followed by PBS vehicle alone. Complete resection plus combination therapy was curative in ~80% of cases, but failed to elicit long-term, tumor-specific memory. By contrast, debulking followed by combination therapy resulted in a similar cure rate to complete resection, and also resulted in a memory response, implying that persistence of antigen in the form of chemotherapy-induced apoptotic tumor cells is required for the induction of long-term immunity during immunotherapy.

The authors conclude that their findings have clinical implications and where complete resection of the tumor is an option, combination therapy will be more effective if used in conjunction with tumor vaccination. If some tumor remains *in situ*, however, combination therapy has the potential to induce a long-lasting immunity against recurrence.

Carol Lovegrove

Original article Broomfield S *et al.* (2005) Partial, but not complete, tumor-debulking surgery promotes protective antitumor memory when combined with chemotherapy and adjuvant immunotherapy. *Cancer Res* **65**: 7580–7584

Prophylactic thyroidectomy: effective against medullary thyroid carcinoma in children

Researchers at Duke University School of Medicine and Washington University school of Medicine have recently published the results of a study on prophylactic thyroidectomy in children genetically at risk of developing medullary thyroid carcinoma (MTC). The paper, published in the *New England Journal of Medicine*, reports a 100% success rate when this procedure was performed in children younger than 8 years of age.

Skinner and co-workers initiated a genetic screening programme to identify at-risk patients with mutations in the *RET* proto-oncogene, which has been identified as the cause of multiple endocrine neoplasia type 2A (MEN-2A), type 2B (MEN-2B), and familial MTC. Almost all patients with one of these conditions go on to develop MTC. Fifty patients under the age of 19, identified as having MEN-2A, underwent total thyroidectomy with resection of the surrounding lymph nodes. Patients were followed up 5–10 years after surgery with physical examination and provocative testing for plasma