spontaneously, however, and is not predicted by the appearance of the contralateral ureteral opening. Repair of only the affected ureter is sufficient, say the authors.

Caroline Barranco

Original article Schwentner C *et al.* (2006) Lich–Gregoir reimplantation causes less discomfort than Politano–Leadbetter technique: results of a prospective, randomized, pain scale-oriented study in a pediatric population. *Eur Urol* 49: 388–395

Protein biomarker signatures for accurate diagnosis of urothelial cancer

Urothelial cancer can be diagnosed by identification of molecular changes associated with disease pathogenesis, but this approach can lack specificity and sensitivity, possibly because it doesn't include enough appropriate disease-specific markers. Theodorescu *et al.* used molecular techniques to identify a DISEASE-PROTEOME 'SIGNATURE' that could distinguish urothelial cancer from nonmalignant urological disorders and other genitourinary cancers in urine samples.

POLYPEPTIDES ISOLATED FROM URINE SAMPLES OF PATIENTS WITH UROTHELIAL CANCER ($n=46$) or healthy volunteers ($n=33$) were analyzed using mass spectrometry. The mass patterns obtained were used to develop a framework for identifying the cancer, and this model was subsequently improved by analysis of urine samples ($n=366$) from patients with malignant or nonmalignant genitourinary disease and from healthy individuals.

A panel of 22 polypeptides was identified that could distinguish between samples from patients with urothelial carcinoma and those from healthy volunteers. A blind analysis showed that this pattern was sensitive and specific, identifying 100% (95% CI 87–100%) of urothelial carcinoma cases and 100% (95% CI 84–100%) of healthy cases. Furthermore, the proteomic signature could be used to distinguish between urothelial cancer and other genitourinary diseases, with a correct classification range of 86–100%.

Bioinformatic tools for analyzing disease-specific patterns of polypeptides in urine could be used for the diagnosis of a range of urological disorders and could reduce the occurrence of false-positive diagnoses. Further studies are in progress to test whether this approach can

be used to predict tumor behavior and response to treatment in patients with bladder cancer.

Kate Matthews

Original article Theodorescu D *et al.* (2006) Discovery and validation of new protein biomarkers for urothelial cancer: a prospective analysis. *Lancet Oncol* 7: 230–240

A phase II trial of combined docetaxel and tumor vaccination in prostate cancer patients

Docetaxel increases the survival of prostate cancer patients; combining this with other methodologies could further improve its effectiveness. Vaccination with tumor-associated antigens such as prostate-specific antigen (PSA) can induce T-cell immune responses with antitumor activity, but it is not clear whether these responses synergize with, or are affected by, docetaxel. Arlen and co-workers investigated whether a docetaxel-based regimen affected T-cell responses in prostate cancer patients vaccinated against PSA.

Patients with metastatic androgen-dependent prostate cancer ($n=28$) were randomized to receive only vaccination with recombinant viral vectors expressing PSA, or the same vaccine regimen 1 week after the start of weekly docetaxel-based therapy. Analysis showed that the median increase in the number of PSA-specific T cells was 3.3-fold in both treatment groups, indicating that the docetaxel-based regimen did not affect the size of the tumor-specific immune response. Compared with the response of a historical control group receiving only docetaxel, vaccination alone or in combination with docetaxel appeared to produce greater declines in PSA velocity. Vaccination before transfer to docetaxel therapy at time of disease progression increased the median progression-free survival compared with the response of the historical controls (6.1 months vs 3.7 months).

The authors conclude that docetaxel can be used safely in combination with immunotherapy, without affecting the magnitude of the tumor-specific T-cell response, and that previously vaccinated patients might have prolonged responses to docetaxel compared with unvaccinated patients.

Kate Matthews

Original article Arlen PM *et al.* (2006) A randomized phase II study of concurrent docetaxel plus vaccine versus vaccine alone in metastatic androgen-independent prostate cancer. *Clin Cancer Res* 12: 1260–1269

GLOSSARY

DISEASE-PROTEOME 'SIGNATURE'

The expression pattern of a complete set of proteins in a disease

POLYPEPTIDES

Chains of amino acids linked by covalent bonds that join to form proteins

MASS SPECTROMETRY

A technique that identifies components of a molecule according to mass and charge

PSA VELOCITY

The rate at which serum PSA level increases over time