Androgen withdrawal improves tumor hypoxia in prostate cancer

Around one-quarter of patients who receive radical treatment for prostate cancer subsequently develop progressive disease. The mechanisms underlying this malignant progression are, however, poorly elucidated. Recently, Milosevic and co-workers have investigated the effects of androgen withdrawal on prostate cancer hypoxia. Androgen withdrawal is known to result in tumor regression in the majority of patients, and is effective in combination with radiotherapy.

Tumor hypoxia is associated with aggressive tumor behavior and the development of progressive disease. The researchers measured pretreatment tumor oxygen concentrations in 248 patients using an ultrasound-guided needle-electrode technique, and detected potentially clinically and biologically significant levels of hypoxia. In total, 22 of these patients received the androgen antagonist bicalutamide (150 mg/day) and consented to a second set of oxygen measurements (performed after 30–145 days). Relative to pretreatment measurements, a significant reduction in prostate hypoxia was observed in these patients after androgen withdrawal ($P = 0.005$), although there was considerable variation in individual response. Tumor hypoxia improved in twelve patients and remained stable in a further nine. Changes in oxygenation were not associated with baseline tumor characteristics, PSA level or duration of bicalutamide treatment.

The authors conclude that induced improvements in levels of hypoxia might explain the favorable patient outcomes observed after treatment with androgen withdrawal plus radiotherapy. Therapeutic agents that block the response to hypoxia might be useful for treating and preventing prostate cancer.

Original article Milosevic M *et al.* (2007) Androgen withdrawal in patients reduces prostate cancer hypoxia: implications for disease progression and radiation response. *Cancer Res* **67:** 6022–6025

Five-year experience of robot-assisted laparoscopic pyeloplasty at a single center

Laparoscopic pyeloplasty is currently the reference standard technique for the treatment of pelvi-ureteric junction obstruction (PUJO); however, the increased difficulty and training required for the laparoscopic procedure compared with open surgery has impeded its widespread adoption. Schwentner and colleagues have described their 5-year experience with robotically assisted laparoscopic pyeloplasty (RALP), a technique that is reportedly easier and quicker to learn than standard laparoscopy.

Between 2001 and 2006, 92 patients (mean age 25.13 years, range 14–74) with either primary ($n = 80$) or secondary ($n = 12$) PUJO underwent transperitoneal RALP using the da Vinci® robot system (Intuitive Surgical, Sunnyvale, CA). The dismembered Anderson–Hynes protocol was used in all patients. The mean follow-up period was 39.1 months (range 3–73 months).

Overall, the procedure was successful in 89 (96.7%) of 92 patients, with only three patients requiring additional surgery to resolve their PUJO. The mean operative time was 108.3 min (range 72–215 min), and shortened significantly as the surgeons gained experience of the procedure (mean duration 137.4 min for the first 12 operations versus 89.76 min for the last 12 operations, $P = 0.001$). There were no intraoperative complications, and no conversions to open surgery. The mean hospital stay was 4.6 days (range 3–11 days), and there were no cases of late failure during follow-up.

The authors conclude that, despite some disadvantages with RALP (for example the considerable cost of the robot), this procedure is safe, feasible and easy to learn, with excellent success rates and low rate of postoperative complications.

Original article Schwentner C *et al.* (2007) Robotic Anderson–Hynes pyeloplasty: 5-year experience of one center. *BJU Int* **100:** 880–885

Increased high-grade prostate cancer and finasteride—sampling density bias?

The Prostate Cancer Prevention Trial (PCPT) of finasteride for prostate cancer prevention resulted in a 24.8% reduction in the 7-year period prevalence of prostate cancer for patients taking finasteride versus placebo. However, the study also found a higher incidence of high-grade (Gleason score 7–10) tumors in biopsy samples from the finasteride