kidneys of group 3 was significantly higher than that in group 2, 4 and 5 (P < 0.05); the level in groups 4 and 5 did not differ significantly from that in group 2.

Conclusions: This study shows that cranberries have an anti-inflammatory effect through their antioxidant function and might prevent infection-induced oxidative renal damage. Thus, clinically cranberries might be used as a beneficial adjuvant treatment to prevent damage due to pyelonephritis in children with VUR.

Editorial Comment

The cranberry, a fruit with antioxidant properties, has been used for preventing urinary tract infections. Cranberry juice is also known to have activity against oxygen free radicals, which are produced during infection and are important for promoting renal damage. The authors evaluated the protective effects of cranberries on infection-induced oxidative renal damage in rabbits with experimental vesico-ureteral reflux.

It was demonstrated that melatonin and cranberry powder decreased inflammation and the accumulation of malondialdehyde in the kidney, which suggests that cranberry compounds act as an antioxidant as well as an anti-adherent in preventing infection-induced renal damage.

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Proportional analysis of pig kidney arterial segments: differences from the human kidney
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Purpose: To present a systematic study and a proportional analysis of the arterial segments of the pig kidney. Materials and Methods: Sixty-one three-dimensional endocasts of the arterial segments of pig kidneys were studied. Each segment was injected with a resin of a different color. Cavalieri’s principle was used to calculate the volume of each renal segment, and these results were compared with the results from the point-counting planimetry method used on photographs of pig-kidney surfaces.

Results: Two to five renal segments were observed. Division into two segments, a cranial and a caudal, was the most common (42.62%). The renal volume ranged from 101 to 173 cm(3) (mean 130.85 cm(3)). The cranial segment was present in 39 of the 57 casts (68.42%). It presented the greatest median value of proportional area (50.00%) and also the greatest maximum value of proportional area, accounting for as much as 74.04% of the total kidney area. The ventral segment, which was found in 20 of the 57 casts (35.09%), presented the lowest median value of proportional area (13.87%) and showed the most variation in area (coefficient of variation 72.89%). There was no significant statistical difference between the segmental areas as evaluated by Cavalieri’s principle and by the point-counting planimetry method.

Conclusions: The distribution and size of the renal-arterial segments in pigs are not similar to those of the human kidneys. Therefore, this information must be taken into account by practitioners of urologic training or ablation using pigs as the animal model, as the structure of the porcine arterial segments cannot be transposed to humans.

Editorial Comment

The pig has been used as the favorite animal model for training and experimental research in urology, including many studies on laparoscopic total and partial nephrectomy, hemostasis techniques and more recently,
ablative technologies, including radio frequency ablation and cryoablation. Therefore, a comprehensive knowledge on the proportional areas of the arterial segments would be important for evaluating the extension of experimental lesions in pigs. The aim of this study was to provide an analysis of the pig kidney segmentation and an analysis of the proportional area of each segment as measured on polyester resin endocasts of the kidney arterial vasculature.

The results demonstrated that the arterial segmental pattern in pigs are not similar to those of the human kidneys, and therefore, the experimental findings concerning renal ablative techniques using the pig must not be completely translated to clinical setting in humans.

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Does benign prostatic hyperplasia originate from the peripheral zone of the prostate? A preliminary study
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Objective: To compare the histological characteristics, cell proliferation, apoptosis and biological features in benign prostatic hyperplasia (BPH) in the peripheral (PZ) and transition zone (TZ) of the prostate.

Patients and Methods: Tissue from BPH in TZ and PZ was obtained from 68 patients undergoing transrectal ultrasonography-guided biopsy and used for both morphometric analysis and immunohistochemical studies. The epithelial, stromal and luminal composition of the tissue was determined using a computer-assisted method for quantitative morphometric analysis. Apoptosis was detected as the apoptotic index (AI) using the TdT dUTP nick-end labelling assay. Cell proliferation was determined as the proliferation index (PI) using Ki-67 immunostaining. The expression of epidermal growth factor receptor (EGFR), transforming growth factor beta 1 (TGFbeta1), androgen receptor (AR) and bcl-2 were assessed immunohistochemically.

Results: There was no difference in the stroma/epithelium ratio between PZ and TZ hyperplastic nodules (P > 0.05). The mean AI in epithelium was almost identical to the corresponding PI. In stroma, no apoptotic cells were detectable. There was a significantly higher PI and AI in the glandular epithelial cells in PZ hyperplastic than in TZ hyperplastic nodules, but no difference in PI of the stromal cells between PZ and TZ hyperplastic nodules. There was significantly higher expression of TGFbeta1 and lower expression of EGFR and bcl-2 in PZ than TZ hyperplastic nodules (P < 0.05). There was no difference in AR expression between PZ and TZ hyperplastic nodules (P > 0.05).

Conclusions: These results indicate that some hyperplastic nodules in PZ might originate from the PZ, and the formation of these nodules might be modulated in a different way from that in the TZ.

Editorial Comment
It is well accepted that benign prostatic hyperplasia (BPH) develops from the transition zone (TZ) and from the periurethral glans, while carcinoma originates from the peripheral zone (PZ). Nevertheless, previous studies, including studies by that same group, reported that hypoechoic lesions in the PZ can be found as BPH...