have been published which evaluate the accuracy of CT scanning in renal trauma. Although this study has some shortcomings inherent in the use of animals (experimental model of renal injury may or may not model human injuries well, pig kidneys may not be identical to human kidneys, etc.) it is a valuable experimental look at the correlation between CT imaging and known renal injuries.

In this study, 42 pig kidneys underwent experimental injury and over 2,000 CT images of the kidneys were compared to macroscopic sections of the injured renal units. They concluded: 1) CT overestimates the degree of injury (as scored by the authors own scoring system) by only 15%, 2) Parenchymal disruption is slightly overestimated because of the confounding appearance of normal renal tissue such as blood vessels.

The authors made no attempt to model vascular injury or penetrating injury. Also, they did not attempt to validate CT in evaluating renal trauma in line that corresponded to the 5-part American Association for the Surgery of Trauma (AAST) Organ Injury Severity Scale for the Kidney. However, this study appears to lend experimental support to the common clinical practice of using CT to accurately determine the extent of blunt renal injury.

Dr. Richard A. Santucci
Assistant Professor of Urology
Wayne State University
Detroit, Michigan, USA

PATHOLOGY

Visual estimate of percent of carcinoma predicts recurrence after radical prostatectomy

Manoharan M, Civantos F, Kim SS, Gomez P, Soloway MS
Department of Urology, University of Miami School of Medicine, Florida, USA
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Purpose: Tumor volume is an important prognosticator for predicting prostate cancer recurrence following radical prostatectomy (RP). We assessed the ability of the visual estimate of the percent of carcinoma (VEPC) to predict recurrence.

Methods and Materials: As performed by 1 surgeon (MSS), 1,114 men underwent radical prostatectomy between 1992 and February 2002. Patients who had less than 12 months of followup, who underwent salvage RP or in whom VEPC was not assessed in the pathology specimen were excluded. VEPC and other clinical variables were analyzed. We performed univariate analysis using the Kaplan-Meier log rank test. Multivariate analysis using Cox proportional hazards regression was performed.

Results: A total of 692 patients with a mean age of 61 +/- 7 years met the criteria for this analysis. Mean followup was 52 +/- 30 months. Of the patients 17% had biochemical recurrence. Mean VEPC was 25% and 13% in those with and without recurrence, respectively. On univariate analysis all variables were significant predictors of recurrence. However, multivariate analysis showed that the only significant predictors of recurrence were patient age, initial prostate specific antigen 10 ng/ml or greater, RP Gleason 8 to 10, extraprostatic extension, seminal vesicle involvement and VEPC. Based on disease-free survival curves patients were stratified into 3 broad groups, namely low, intermediate and high volume. The HR for biochemical recurrence was 2.1 for the intermediate VEPC group (9.1% to 20%) and 2.7 for the high VEPC group (greater than 20%). In the reference group it was less than 9% (low volume).

Conclusions: VEPC is a simple and inexpensive method that is an independent predictor of recurrence after RP.

Editorial Comment

One of the most controversial aspects of the pathologic assessment of radical prostatectomy specimens is the measurement of the tumor volume. Nevertheless, as yet, there are no defined standards for reporting the cancer volume in prostatectomy specimens. Some institutions have calculated the tumor volume accurately, using computer-assisted image analysis systems. Because this method is not feasible for the routine clinical practice, other investigators have proposed alternative simpler means for measuring tumor volume, including the diameter of largest tumor focus, the number of tumor foci, the number of involved blocks, the percentage of blocks involved, the use of a 3.0 mm squares grid, or naked eye examination of the glass slides after the pathologist had circled all microscopically identifiable foci of carcinoma with a marking pen (pathologist's percentage estimate). Recently, we proposed for estimating tumor volume a simple point-count method accessible to all general pathologists working in routine pathology laboratories (Int Braz J Urol. 2003; 29: 113-120).

In the present study, tumor volume was an independent predictor of recurrence after radical prostatectomy. Epstein et al. (J Urol. 1993; 149: 1478-1481) analyzed 185 men who underwent radical retropubic prostatectomy for clinical stage B adenocarcinoma of the prostate. Although tumor volume predicted progression, in a stepwise regression analysis it did not provide independent prognostic information. The authors conclude that although an accurate preoperative assessment of tumor volume remains desirable for the management of patients with prostate cancer, the study demonstrated that measurement of tumor volume in radical prostatectomy specimens need not be performed as part of the routine pathological analysis of radical prostatectomy specimens, since it does not provide additional information beyond that of Gleason score and the status of capsular margins.

In a recent paper to be presented in the USCAP meeting in Vancouver and to be published as an abstract in the January (2004) issue of Modern Pathology, we studied 123 patients submitted to radical prostatectomy for clinical stages T1c or T2. Using the point-count method for estimating tumor volume, we concluded that shorter time to progression following radical prostatectomy correlated with preoperative PSA and Gleason score but not with tumor extension.

In a paper addressing prognostic factors in prostate cancer by the College of American Pathologists (Arch Pathol Lab Med. 2000; 124: 995-1000), tumor volume was considered category II, that is, needs confirmation.

Dr. Athanase Billis
Full-Professor of Pathology
State University of Campinas, Unicamp
Campinas, São Paulo, Brazil

Collecting duct carcinoma of the kidney: a clinicopathological study of 9 cases

Peyromaure M, Thiounn N, Scotte F, Vieillefond A, Debre B, Oudard S
Department of Urology, Cochin Hospital, Paris, France
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Purpose: Collecting duct carcinoma (CDC) of the kidney is a rare variant that is associated with an extremely poor prognosis. We report our experience with this variety of cancer in the last 9 years.

Materials and Methods: From 1993 to 2002, 9 patients with CDC were treated at our institution. The diagnosis of CDC was made by a nephrectomy specimen in 8 cases and by renal biopsy in 1. Tumor characteristics, and patient treatment and outcome are reported.

Results: At presentation 1 T1N0M0, 1 T3N0M0, 3 T3N+M0 and 4 T3N+M+ tumors were seen. Mean followup was 13.6 months. Five patients received no complementary treatment. The patient with the T1N0M0

tumor remained free of disease 13 months after nephrectomy and the one with T3N0M0 tumor remained free of disease at 17 months. A patient with a T3N+M+ tumor experienced progression at 1 month, local recurrence at 17 months and was then lost to followup. The 2 other patients with T3N+M0 and T3N+M+ disease, respectively, progressed rapidly and were lost to followup after 5 months. One patient with a T3N+M0 neoplasm received immunotherapy and died after 24 months, while the other with T3N+M0 disease was treated with oral prednisolone and died after 5 months. Finally, 2 patients with T3N+M+ disease received chemotherapy, consisting of 1,250 mg/m2 gemcitabine on days 1 and 8, and 70 mg/m2 cisplatin on day 1. Each patient achieved an objective response after 3 chemotherapy cycles and remained disease-free 27 and 9 months after nephrectomy, respectively.

Conclusions: CDC is an aggressive variety of kidney neoplasm that is often associated with nodal and visceral metastases at presentation. Our data suggest that combined gemcitabine and cisplatin chemotherapy may be the best therapeutic option for patients with this tumor.

Editorial Comment

Collecting duct carcinoma accounts for approximately 1 per cent of renal cell neoplasms. In spite of its rarity is considered one of the most aggressive variants of renal tumors. No consistent pattern of genetic abnormalities has been established. The morphologic features are characterized by irregular tubules reminiscent of the Bellini collecting ducts set in a desmoplastic stroma. An affinity for the Ulex europaeus lectin supports a collecting duct origin for this tumor.

A differential diagnosis is with renal urothelial carcinoma with glandular differentiation. Favors this latter diagnosis squamous differentiation and dysplastic epithelium or in situ carcinoma in the pelvic urothelium. Another differential diagnosis is the recently described low-grade mucinous and spindle cell carcinoma of the kidney (Mod Pathol. 2002; 15: 182A). Microscopically, it shows tubular structures reminiscent of the thin segment of the loop of Henle. It is a tumor with good prognosis and a striking female preponderance. The immunohistochemistry displays proximal and distal nephronic markers.

A variant of collecting duct carcinoma is the medullary carcinoma of the kidney. This variant was described by Davis, Mostofi and Sesterhen (Am J Surg Pathol. 1995; 19: 1-11) which is believed to arise from the collecting ducts of the renal medulla and is associated with sickle cell trait. The authors coined this tumor as the seventh sickle cell nephropathy. The other 6 are hematuria, papillary necrosis, nephrotic syndrome, renal infarction, inability to concentrate urine and pyelonephritis.

Dr. Athanase Billis
Full-Professor of Pathology
State University of Campinas, Unicamp
Campinas, São Paulo, Brazil

INVESTIGATIVE UROLOGY

Analysis of the modifications in the composition of bladder glycosaminoglycan and collagen as a consequence of changes in sex hormones associated with puberty or oophorectomy in female rats

Cabral CA, Sampaio FJ, Cardoso LE
Urogenital Research Unit, State University of Rio de Janeiro, Brazil
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