Course 1029
Renal and Adrenal Needle Core Biopsies

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Disclosures

Debra Zynger: In the past 12 months, I have not had a significant financial interest or other relationship with the manufacturer(s) of the product(s) or provider(s) of the service(s) that will be discussed in my presentation.

Professional Practice Gaps Addressed

As imaging increases, more incidental renal and adrenal masses are being identified. Additionally, there are new indications for performing renal core biopsies including the characterization of small homogeneously enhancing masses, masses for which percutaneous or extracorporeal ablation is being considered, and the evaluation of cystic masses indeterminate for malignancy on imaging (Frank et al., J Urology, 2003). Renal and adrenal needle core biopsies are increasing in frequency and the cost savings of a percutaneous biopsy versus a percutaneous biopsy is substantial (approximately $3000) (Volpe et al., Urology, 2008).

Renal and adrenal needle core biopsies are diagnostically challenging due to limited tissue, potential mimics, and infrequency of the specimens. However, diagnoses made from these specimens are critical to patient care. Although the diagnosis a pathologist renders guides patient management, there are professional practice gaps for evaluating renal and adrenal needle core biopsies. There are few articles describing the histologic accuracy and pitfalls from a pathologist’s perspective for renal core biopsies, and only a single paper addressing these issues in adrenal core biopsies (Villeli et al., AJCP, 2012). There are few resources such as pathology textbooks or pathology courses focusing on renal and adrenal surgical pathology biopsies and as such there is a need for an educational session which provides information about these specimens.

During this course, participants will gain an understanding of the clinical indications for obtaining renal and adrenal biopsies and the treatment strategy based on the pathologic findings. The accuracy, sensitivity, and specificity will be described. Case studies demonstrating classic examples and histologic pitfalls of common and rare entities will be discussed. Immunohistochemical algorithms to aid in rendering a diagnosis in these specimens will be provided. After the course, participants will be able to understand the technique, complications, indications, accuracy, pitfalls, and immunohistochemistry regarding renal and adrenal core biopsies. This course will be applicable for all levels of experience, from pathology resident trainee to academic pathology subspecialist as although these specimens have been uncommon, they are increasingly encountered. The course will be relevant to any practice type, including private practitioners and academic physicians, as core needle biopsies are performed in hospitals of any size. Basic information will be presented followed by more nuanced detail. Both commonly encountered and newly described entities will be discussed.
Intended Learning Outcomes

1. Participants will list the indications for performing percutaneous renal and adrenal core biopsies.
2. Participants will identify histologic pitfalls in these specimens.
3. Participants will describe how to utilize immunohistochemistry to aid in rendering diagnoses in renal and adrenal core biopsies.

Schedule

10:00-10:35 am   Renal Core Biopsies
10:35-10:50 am   Adrenal Core Biopsies

Course Outline

I. Percutaneous Renal Needle Core Biopsies
   A. Technique
   B. Complications
   C. Established Indications
   D. Emerging Indications
   E. Accuracy
   F. Usage
   G. Pathology Report
   H. Histologic Findings
   I. Immunohistochemistry

Usage at Ohio State

![Graph showing usage of renal core biopsies at Ohio State from 2005 to 2013 (Jan-Aug)]
Diagnostic Findings at Ohio State

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<th>Condition</th>
<th>RCC CC</th>
<th>RCC CCP</th>
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<th>RCC Chromophobe</th>
<th>Oncocytoma</th>
<th>AML</th>
<th>RCC Translocation</th>
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II. Percutaneous Adrenal Needle Core Biopsies
   A. Technique
   B. Complications
   C. Indications
   D. Accuracy
   E. Usage
   F. Pathology Report
   G. Histologic Findings
   H. Immunohistochemistry

 Usage at Ohio State

 Diagnostic Findings at Ohio State


Inhibin

Melan A

Chromogranin

S100

CD10

Vimentin

CAIX

Adrenal Cortical Adenoma/Carcinoma

Pheochromocytoma

RCC, Clear Cell

+/-+ -

- -

+ -

+ -

-/Weak + +

+ +

-/Weak - +