EM Utility in Renal Biopsy Evaluation: Look-Alikes and Unexpected Findings

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Abstract

Renal pathology is one of few subspecialties within anatomic pathology in which electron microscopy is still used routinely in most centers. Even in this modern era of advanced immunohistochemistry and sophisticated molecular techniques, electron microscopy in fact remains an invaluable tool, providing useful diagnostic information in as many as half of all cases. Perhaps most commonly, electron microscopy can provide important confirmatory information, staging data, disease subtype differentiation, or clues regarding disease etiology. In a significant minority of cases, though, the key diagnostic findings are demonstrated by electron microscopy, for example, Alport Syndrome. In some instances, electron microscopy allows separation of disease entities that can be indistinguishable by light and immunofluorescence microscopy. Also, electron microscopy can sometimes reveal completely unexpected findings that allow for diagnosis of a secondary or unsuspected disease. This presentation will use cases from our practice to highlight examples where ultrastructural findings either allowed separation of disease look-alikes or led to the diagnosis of an unanticipated disease.