Review of Role of Electron Microscopy in Pediatric Pathology

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Abstract

Pediatric and perinatal pathology is a unique specialty in pathology that spans from fetal to neonatal to infancy to pediatric to young adulthood periods. The disease processes encountered in this specialty involve developmental, metabolic, hereditary and non-hereditary and environmental disease entities, as well as benign and malignant neoplasms. Unique organ-based diseases are often encountered in perinatal and pediatric pathology. Each of these disease processes have unique findings that allow for appropriate diagnosis. Within pediatric pathology, electron microscopy is still an essential technique in providing information for definitive diagnosis and impacts treatment and prognosis. Not all pediatric hospitals have electron microscopy facilities, and it is important to provide referral services for pediatric hospitals. Disease processes in perinatal and pediatric disease are often due to underlying genetic abnormalities. It is well known that molecular testing requires considerable time to provide information that may or may not allow for diagnosis of an underlying disease entity or tumor. With many perinatal and pediatric diseases and tumors, electron microscopy provides definitive ultrastructural features which provide a definitive diagnosis. This presentation will highlight the importance of electron microscopy in the diagnosis of a variety of disease entities and tumors encountered in the practice of pediatric and perinatal pathology.