Current Concepts in Surgical Treatment of Neuroblastoma

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Neuroblastoma remains the most common solid malignancy of childhood. Recent progress has been made in the way in which children with this disease are staged and managed. These changes have and will continue to impact the role of surgeons in the management of this disease.

Various staging methods including Evans, St. Jude’s and POG have been replaced in most current studies by the INSS. The INSS is a surgically based system that in combination with prognostic factors including age, stage, ploidy and n-myc are currently being used to stratify treatment plans into low, intermediate and high risk groups. In the most recently completed studies of 784 children treated on CCG 3881. This study was designed to define biologic favorable risk neuroblastoma and to treat these patients by standardized protocols stratified by stage, age and selected biologic variables. From this cohort of data a group of patients have been identified who will be prospectively assigned to receive surgery alone or surgery plus minimal chemotherapy as primary treatment in the next phase of CCG/POG combined studies for low and intermediate risk patients.

The results of treatment for advanced stage and risk disease remains low even in the most recently completed studies (CCG 3891). It continues to be difficult to identify direct benefit to the patient in terms of local tumor control to perform extensive cytoreductive surgery at the site of the primary tumor. Overall survival in the study has risen to 24% with 2/3 of the patients experiencing either local or local plus distant relapse. New approaches and modalities such as radiation in combination with surgery, cryoablation and newer systemic therapies remain to be incorporated into the treatment plan for children with advanced stage neuroblastoma.