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abstract

Enhancing Renal Preservation in Retroperitoneal Neuroblastoma

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Enhancing Renal Preservation in Retroperitoneal Neuroblastoma

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Introduction: Abdominal neuroblastoma frequently involves critical structures, especially the kidneys, complicating surgical resection. Our previous studies emphasize the importance of renal preservation to protect kidney function. This study evaluates surgical strategies focused on optimizing kidney preservation during retroperitoneal neuroblastoma surgery.

Methodology: This study included 166 patients with abdominal or pelvic neuroblastoma who underwent surgery at Beijing Children's Hospital between October 2021 and June 2023. These patients were part of the cohort from the previous study "A Primary Report 166 Cases of Abdominal or Pelvic Neuroblastoma Surgery Utilizing the International Neuroblastoma Surgical Report Form (INSRF)."

Results: Among the 166 patients, renal artery encasement was found in 45.8% of the left and 36.7% of the right renal arteries. Intraoperative damage to the renal artery occurred in only 1.2% of cases. Left kidney infiltration was observed in 6.6%, while right kidney infiltration was observed in 8.4%. For left kidney surgical treatment, 1.8% underwent partial resection. In the right kidney group, 14.5% underwent partial resection, and 1.2% had complete resection. Intraoperative kidney ischemia occurred in 22.9%, with most cases showing improvement through appropriate intraoperative management. Postoperative renal atrophy was observed in 4.8%.

Conclusion: This study demonstrates that with careful surgical optimization, the renal resection rate was reduced to 1.2%, and postoperative renal atrophy was reduced to 4.8%, representing a significant improvement compared to previous reports. These results underscore the importance of preserving renal function in retroperitoneal neuroblastoma surgery.