



# Surgical management of pediatric brain stem glioma: a series of 21 cases

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## Introduction

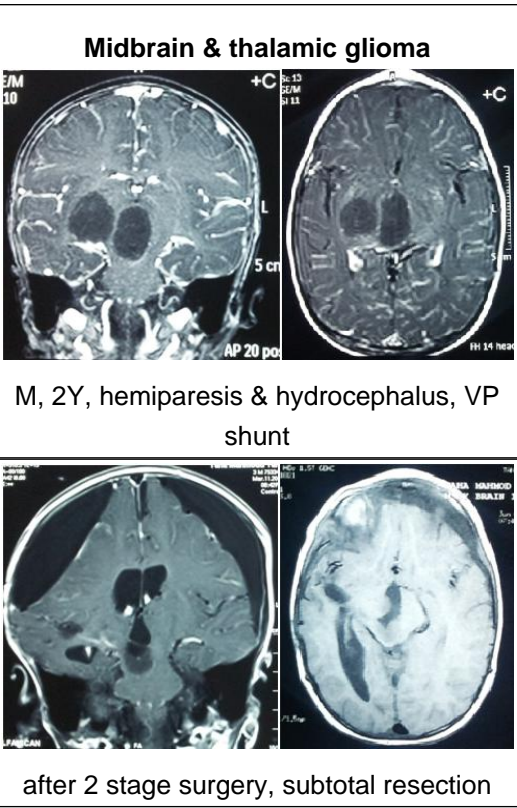
Intra-axial brain stem tumors belong to the most challenging neurosurgical problems especially in pediatric age group. Surgery could be of great help for a selected group of these children.

## Methods

We reviewed the surgical outcome of 21 pediatric cases surgically treated for brain stem glioma at the Neurosurgery Department, Alexandria University between 2008 and 2013. The series includes 10 boys and 11 girls. Age ranged from 2-18 years (mean 9 years), and follow up period ranged from 6 to 63 months

## Results

Among 29 surgical procedures, 9 procedures were carried out at the midbrain, 13 at the pons, and 5 at the medulla oblongata. The remaining 2 surgical interventions were for CSF diversion (V-P shunt in one case and 3rd ventriculostomy in the other). Eight patients were operated twice; 4 for tumor regrowth after initial partial excision, 2 as a planned second stage surgery for complex tumors demanding different approaches, and 2 for CSF diversion. Intra-operative neurophysiological monitoring was available only in 19 procedures, and all cases were operated without neuronavigation or intra-operative MRI. Total resection was achieved in 8 out of 27 procedures for tumor resection (29.6%), and the most common pathology encountered was pilocytic astrocytoma (14 cases).



There was no post-operative mortality in this series, worsening of the pre-operative neurological status occurred in 12 patients but was permanent in only 2 cases. Six cases died during the follow up period; 3 cases had anaplastic astrocytoma (WHO G 3) and 3 other children suffered from diffuse pontine glioma (fibrillary astrocytoma WHO G2).

## Conclusions

Proper case selection and special surgical tactics are essential for a satisfactory surgical outcome in pediatric brain stem gliomas.

