

Evaluation of Role of Surgery in Management of Pediatric Germ Cell Tumors According to Risk Adapted Therapy Protocols

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Abstract : Background: Patients with malignant germ cell tumors have age distribution in two peaks, with the first one during infancy and the second after the onset of puberty. Gonadal germ cell tumors are the most common malignant ovarian tumor in females aged below twenty years. Sacrococcygeal and retroperitoneal abdominal tumors usually presents in a large size before the onset of symptoms. Methods: Patients with pediatric germ cell tumors presenting to Children's Cancer Hospital Egypt and National Cancer Institute Egypt from January 2008 to June 2011 Patients underwent stratification according to risk into low, intermediate and high risk groups according to children oncology group classification. Objectives: Assessment of the clinicopathologic features of all cases of pediatric germ cell tumors and classification of malignant cases according to their stage, and the primary site to low, intermediate and high risk patients. Evaluation of surgical management in each group of patients focusing on surgical approach, the extent of surgical resection according to each site, ability to achieve complete surgical resection and perioperative complications. Finally, determination of the three years overall and disease-free survival in different groups and the relation to different prognostic factors including the extent of surgical resection. Results: Out of 131 cases surgically explored only 26 cases had re exploration with 8 cases explored for residual disease 9 cases for remote recurrence or metastatic disease and the other 9 cases for other complications. Patients with low risk kept under follow up after surgery, out of those of low risk group (48 patients) only 8 patients (16.5%) shifted to intermediate risk. There were 20 patients (14.6%) diagnosed as intermediate risk received 3 cycles of compressed (Cisplatin, Etoposide and Bleomycin) and all high risk group patients 69patients (50.4%) received chemotherapy. Stage of disease was strongly and significantly related to overall survival with a poorer survival in late stages (stage IV) as compared to earlier stages. Conclusion: Overall survival rate at 3 three years was $(76.7\% \pm 5.4)$, 3 years EFS was $(77.8\% \pm 4.0)$, however 3 years DFS was much better (89.8 ± 3.4) in whole study group with ovarian tumors had significantly higher Overall survival $(90\% \pm 5.1)$. Event Free Survival analysis showed that Male gender was 3 times likely to have bad events than females. Patients who underwent incomplete resection were 4 times more than patients with complete resection to have bad events. Disease free survival analysis showed that Patients who underwent incomplete surgery were 18.8 times liable for recurrence compared to those who underwent complete surgery, and patients who were exposed to re-excision were 21 times more prone to recurrence compared to other patients.

Keywords : extragonadal, germ cell tumors, gonadal, pediatric

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