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Acta Medica Iranica
2009;47(4) : 1-6

Craniospinal versus whole brain irradiation in Medulloblastoma patients, with introduction of utilizing a simple immobilization device

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Abstract:

Craniospinal irradiation plus posterior fossa boost (CS1) is the standard modality of post-operative treatment of patient with medulloblastoma, but considering the technical difficulties and limited facilities, often whole- brain irradiation plus posterior fossa boost (WBI) had been used in our institution until 1991. Tust a retrospective study was undertaken to compare the patients treated by By WBI and CSI for recurrences and disease-free survival (DFS). Files of all medullobalstoma patients treated post-operatively in our department in the 10 – year period of 1986-1996 were reviewed. To obtain the best possible follow- up, a formal inquiry letter was mailed to all patients' addresses.Total of 72 patients had been treated, with a mean age of 14.7 years and male-to-female ratio of 1.5:1 Thirty –seven patients had been treated by WBI and 35 by CS. A simple wooden device designed and made in our department was used for CSI patients' set-up and immobilization. Mean radiation dose to posterior fossa was 4, 765 cGy in WBT and 5, 071 cGY in CSI (180-200 cGy fractions). Sixty-two patients (85%) came back for follow-up, with 24 recurrences. Only 24% of CSI patients had recurrences, versus 51% in WBI Nearly all Wbi recurrences versus half of the CSI recurrences were spinal. DFS was 39 months in CSI and 26 months in WBI (P<0.001) . in multi-factorial analysis, only the extent of radiation (CSI versus WBI, P<0.001) was statistically significant. Mean age in our patients was higher than what is commonly reported in literature. The immobilization device introduce was a simple and useful accessory to CSI. Considering DFS, CSI in our department was acceptabley comparable to literature results and significantly superior to WBI. With regard to relatively high spinal recurrence rate even in CSI, the importance of suitable spinal cytological and imaging evaluation is again emphasized.

Keywords:

Medulloblastoma ، Craniospinal irradiation ، Immobilization device

TUMS ID: 1113

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