
FACIAL EMOTION RECOGNITION ABILITY AFTER BRAIN RADIOTHERAPY

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Aims:

Brain radiation therapy (BRT) is a mainstay of treatment for tumors in brain. The most determined adverse effects in patients after BRT are as follows: problems in new memory consolidation, attention, visuospatial and executive functions domains. Although studies about cognitive side effects are increasing in BRT literature, knowledge about social cognition is lacking. We aimed to investigate the alteration in facial emotion recognition ability in patients after BRT.

Methods:

Thirteen patients with various brain tumors even primary or metastatic were enrolled in the study. All participants were asked to complete a manual based Facial Emotion Recognition Test. Bilateral hippocampi were delineated by use of contouring protocol of hippocampal avoidance during whole-brain radiotherapy for brain metastasis (Radiation Therapy Oncology Group)

Results:

No differences between initial and post radiotherapy among identifying facial emotions of happiness ($p=0.480$), anger ($p=0.336$), disgust ($p=0.157$), neutral ($p=0.276$) while there was trends in identifying sad ($p=0.054$) and surprised ($p=0.058$) faces. Trends of improvement in sad facial emotion and impairment in surprised facial emotions have been detected. Identifying ability of fearful emotions was significantly better after radiotherapy ($p=0.039$). There was a positive correlation between frontal dose and impairment in identifying surprised face ($p=0.050$ and $r=0.553$) was detected.

Conclusion:

Facial emotion recognition is an important cognitive skill for social adjustment, proper relationship, working and living independently and brain radiotherapy seems to have mixed effects on this ability. Amygdala has important role in recognizing fear and sad emotions and those emotions were found to be improved after brain radiotherapy.