POSTER 33

BRAIN PHENOTYPES IN A MOUSE MODEL FOR APERT SYNDROME

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Apert Syndrome (AS) is one of several fibroblast growth factor receptor (FGFR) related craniosynostosis syndromes. Individuals with AS display craniofacial dysmorphology and a constellation of central nervous system anomalies. In this study we present quantitative comparisons of brain phenotypes in a mouse model for Apert syndrome, the $Fgfr2^{+/S252W}$ mouse. We collected landmark coordinate data from micro magnetic resonance images of newborn (P0) $Fgfr2^{+/S252W}$ mice and their wild type littermates. Results of Euclidian Distance Matrix Analysis suggest that the brains of the mutant mice have a statistically significant greater width and height of the cerebrum than those of their wild type littermates. Results also show a significant rostro-caudal decrease in cerebral length. However, no differences were found in the shape of the cerebellum or hind brain. These results show that in addition to craniosynostosis and associated craniofacial dysmorphology, we also see clear differences in the brain at P0 in these mice. We can hypothesize that the FGFR2 S252W mutation in humans with AS would show similar brain dysmorphology at birth.