

Morphohistological Architecture of Human Neonate Cerebral Cortex Autopsy

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Abstract

Background: The brain gyri and sulci development, its characterization and timing is one manifestation of the complex orchestration of human brain.

Objective: To present work was aimed to illustrate the morphometry and the histological architecture of the human neonate cerebral cortex.

Patients and Methods: In this study four brains from neonates at day 1, 5, 6 and 7 day were taken as well as other 4 samples at 28 days of age were collected from the medico-legal directorate in Baghdad. This work was done to describe the morphometry and thickness measurements of human neonate cerebral cortex of different ages. Brain samples were fixed in 10% neutral buffer formalin and slides from various regions of cerebral cortex were prepared and stained with H&E.

Results: The present investigation was resulted that, the mean measurements of the brain from the frontal to occipital pole was 125.0- 191.3 mm to the neonate aged 1-28 days. While the mean cortices thickness measurements of the frontal, parietal, temporal and occipital were 3.468, 3.483, 3.097 and 3.290 mm respectively. The histological results revealed that, the human neonate cortex formed by six layers, which were varied in the numbers, size and type of nerve cells, glial cells and nerve fibers.

Conclusion: The present study concluded that the morphometry of the brain from day one until day 28 were varied to that of adult and the histological study of the neonate brain from day one until day 28 were resemble to that of the adult.

Keywords: Braindevelopment; Braincortex; Gyrification; Brainarchitecture.

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