Discussion (2)

Extremely Profound Hypothermia in Cardiac Surgery

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Discussion (3)

Discussion to the Special Lecture on Extremely Profound Hypothermia Reported by Professor Dr. T. Kudo

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Reviewing neurological changes following profound hypothermia reported in the literatures, our method for obtaining profound regional hypothermia of the brain was presented.

We are endeavoring to find a method in which the cerebral circulation and bleeding can be controlled under less deep hypothermia without risk of time limitation and causing any irreversible cerebral damage. For this purpose, the tissue oxygen availability was measured on the cerebral cortex as an indicator of cerebral anoxia throughout the procedure, and hemodilution and the wash-out perfusion of the brain were used to keep microcirculation at the value of hematocrit 70-80%. In our experimental studies, the brain was tentatively cooled down selectively to 15°-23°C remaining the rectum averaged above 31.3°C and esophagus 28.6°C, and kept on in lower flow rate by 2-3cc/kg/minute, or off intermittently to kept this rang of temperature at least for 30 minutes.

By this procedure, the survival rate was remarkably improved and a successful clinical case was obtained in which a bloodless operative field was kept for 4 3/4 hours at the brain temperature of 15°-25°C. However, further studies should be done for the simplicity of this method under moderate hypothermia of routine clinical use.