In summary; 1) Remarkable recovery was seen in many severe head injuries in children. 2) Decompressive craniotomy was performed in cerebral contusion even if intracranial hematoma was not proved. 3) Tight cooperation with pediatric surgeons is needed for satisfactory postoperative management.

K. Whiplash Injury

k-1. Plethysmographic Studies on the Whiplash Injury

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Among numerous symptoms complained by patients with whiplash injuries, numbness, weakness of the upper extremities, flushing or paleness, sweating and coldness of the hands have been frequently complained and are considered to be the stimulating signs of cervical sympathetic nervous system.

Photoelectric plethysmographic methods of the finger tips were performed to patients with whiplash injuries and abnormalities of both the amplitude and pulse wave were observed in most of the cases.

1) Decrease in the ratio of pulse amplitude during postural changes from supine to sitting positions was marked in patients with whiplash injury in comparison to the normal subjects. (Sitting/supine ratio was 65% in normal subjects and 37% in the patients.)

a) The pulse waves were divided into five portions, A) upstroke time B) time to the systolic peak B; C) ejection time, D) Dicrotic Index (c/a), E) Elasticity Index (a/b). The changes in these waves during whiplash injuries were remarkable.

a) Stellate ganglion block was performed to these patients and improvement of the pulse wave were observed.

k-2. Studies on the Vertebral Phlebography in 'so called' Whiplash Injury

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For patients having 'so called' whiplash injury we had been examining