

소아에서 두부손상 이후 발생한 기저핵경색

조용재 · 김동석 · 최중언

= Abstract =

Post-Traumatic Basal Gangliar Ischemia in Children

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The authors reviewed the cases of 12 children with unilateral motor weakness after minor head injury who were treated between 1990 and 1996. Eight were boys and four were girls, and all were less than seven years old (range, 8 month to 6years) ; unilateral weakness developed immediately after an apparently minor head injury. Computed tomography and MR scanning disclosed an ischemic lesion at one side of the basal ganglia. Most children recovered. The mechanism by which this ischemic lesion develops at the basal ganglia is not known. In children, however the angle between the middle cerebral artery and lateral perforating vessels is more acute than in the adult, and we believe that after minor head injury, stretching and distorting the angle of these perforating branches may lead to ' unknown vessel change ', with a consequent decrease in local blood flow. The end result is an ischemic lesion in the basal ganglia.

KEY WORDS : Ischemic lesion · Basal ganglia · Children · Minor head injury.

서 론

대상 및 방법

본 연구는 1990년 7월 1일부터 1996년 7월 31일까지 12명의 소아에서 발생한 기저핵경색을 대상으로 하였다. 이 중 남자 8명, 여자 4명이며, 연령은 8개월에서 6세까지였다. 모든 환자는 비교적 가벼운 두부외상 후 갑자기 발생한 단측성 운동장애를 호소하였다. 컴퓨터 단층촬영(CT) 및 자기공명영상(MRI) 검사에서 기저핵 부위에 국한된 경색 병변을 확인하였다. 대부분의 환자는 회복되었다. 기저핵에 이러한 경색 병변이 발생하는 기전은 알려져 있지 않다. 그러나 소아에서는 중뇌정맥과 측방순행혈관의 각도가 성인에 비해 더 급각을 이루고 있으며, 우리는 가벼운 두부외상 후 이러한 순행혈관의 각도가 늘어나고 왜곡되어 혈류가 감소되어 기저핵에 경색 병변이 발생한다고 생각한다. (Fig. 1, 2)

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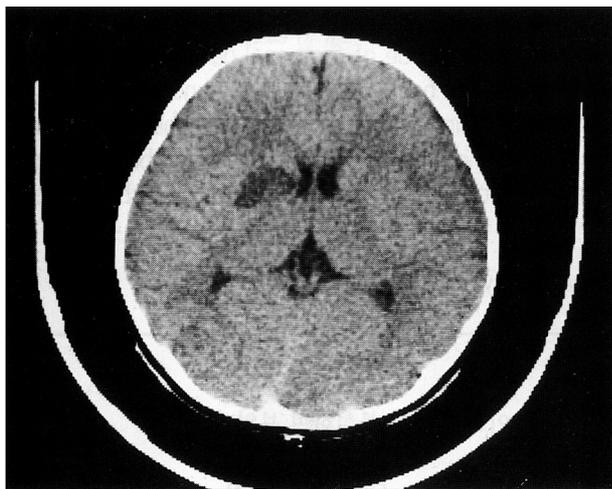


Fig. 1. Brain CT scan shows hypodense lesion in the Rt basal ganglia : the case of a four-year-old male child who suffered left hemiparesis after falling from his mother's lap.

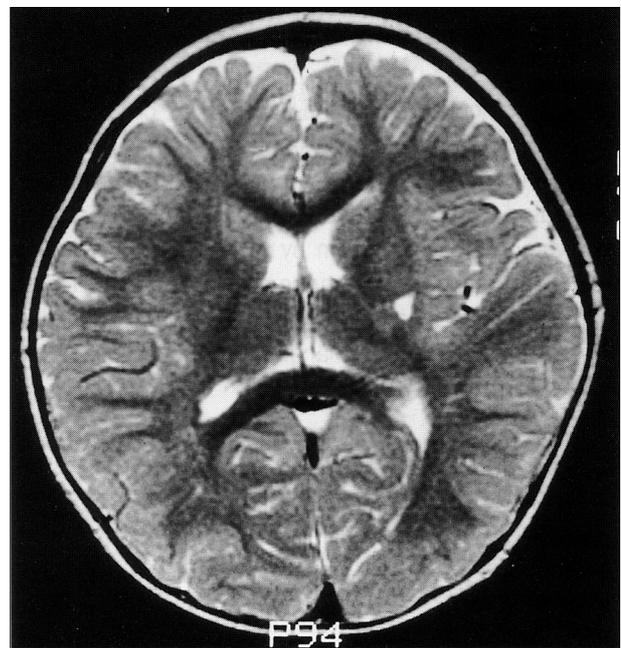


Fig. 2. Brain MR-T2 weighted image shows a signal change in the left basal ganglia : the case of a 4-year-old female child who suffered right hemiparesis after falling off a bicycle.

Table 1. Patient characteristics presenting with post-traumatic ischemia of the basal ganglia

Patient	Sex	Age	Lesion	Initial presentation	Hemiparesis	Facial weakness	Initial study
1	M	10/12yr	Lt	LOC	G4	-	CT
2	M	8/12yr	Rt	Hemiparesis	G4	-	CT
3	M	18/12yr	Lt	Hemiparesis	G4	-	CT, MR, SPECT
4	M	9/12yr	Lt	Seizure	G4	-	CT
5	M	5yr	Lt	Hemiparesis	G3	+	MR
6	M	4yr	Rt	Hemiparesis	G4	+	CT, MR, SPECT
7	M	3yr	Rt	Hemiparesis	G3	+	CT, MR
8	M	5yr	Rt	Dysarthria	G4	-	CT
9	F	2yr	Lt	Hemiparesis	G4	-	MRI
10	F	23/12yr	Lt	Hemiparesis	G3	-	MRI
11	F	22/12yr	Lt	Hemiparesis	G4	-	CT
12	F	4yr	Rt	Hemiparesis	G4	-	CT

LOC : loss of consciousness, Rt : right, Lt : left

Table 2. Timing of improvement in patient with post-traumatic ischemia of the basal ganglia

Onset of improvement	No. of Patient
2nd day	1
3rd day	1
5th day	6
7th day	1
12th day	2
15th day	2

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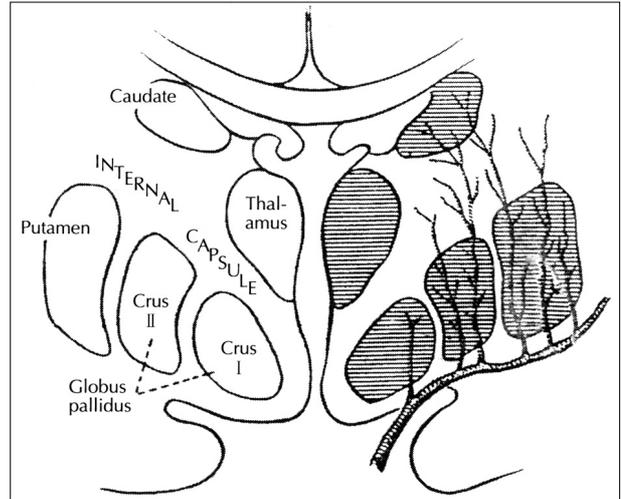


Fig. 3. Semi-diagrammatic representation of the arterial supply field of the proximal segment of the middle cerebral artery.

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14) 18 Duret 14), Charcot

3) Charcot 'artery of cerebral hemorrhage'

'lenticulostriate artery', 'artery of corpus striatum', 'striatal artery' 1)13)

가 (caudate head), (putamen), (globus pallidus), (anterior portion of internal capsule)

(Fig. 3)⁶⁾¹⁵⁾

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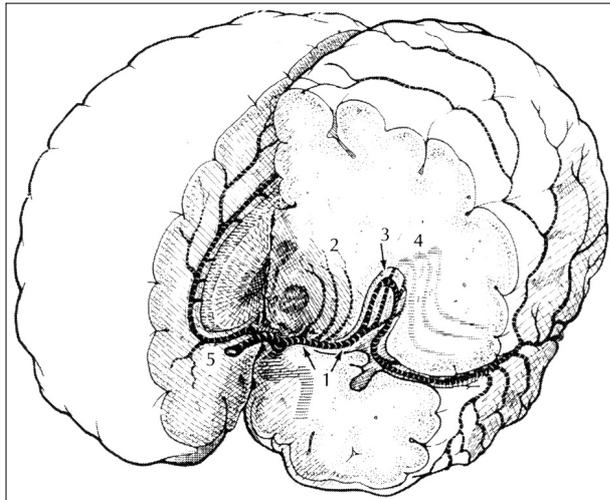


Fig. 4. Anatomic drawing of the middle cerebral artery(MCA) and its relationship to adjacent structures. The sylvian fissure has been exaggerated so that the MCA loop over the insula can be more clearly depicted. 1 : M1 (horizontal) segment. The genu is where the MCA curves upwards into the sylvian fissure ; 2 : Lateral lenticulostriate arteries ; 3 : Sylvian fissure ; 4 : MCA within the depths of the sylvian fissure ; 5 : Left and right anterior cerebral arteries.

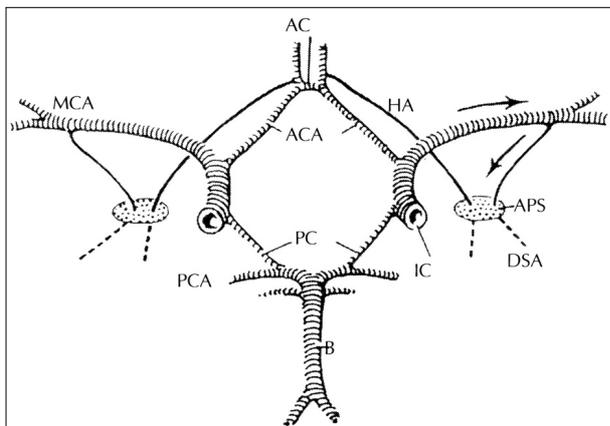


Fig. 5. Diagram of the circle of Willis. ACA, anterior cerebral artery ; AC, anterior communicating artery ; MCA, middle cerebral artery ; IC, internal carotid artery ; PC, posterior communicating artery ; HA, Heubner's artery ; DSA, distal striate artery ; PCA, posterior cerebral artery ; B, basilar artery, APS, anterior perforated substance. Arrows indicate the direction of blood flow.

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(Fig. 4, 5)¹³⁾.

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