

運動神経系(2024.3.24)



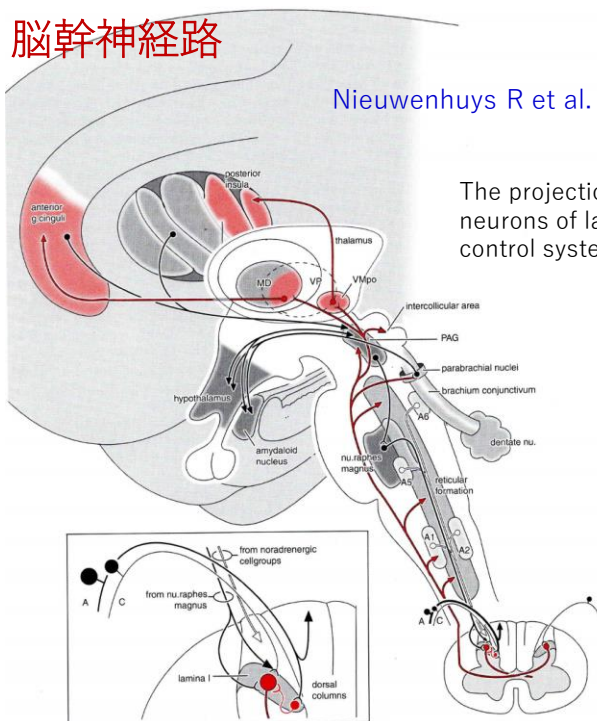
横地健治

1

脳幹神経路

Nieuwenhuys R et al. The Human Central Nervous System. 4th edi. 2008.

The projection of specific **nociceptive** and thermoceptive neurons of lamina I of the dorsal horn and the descending control systems for pain.

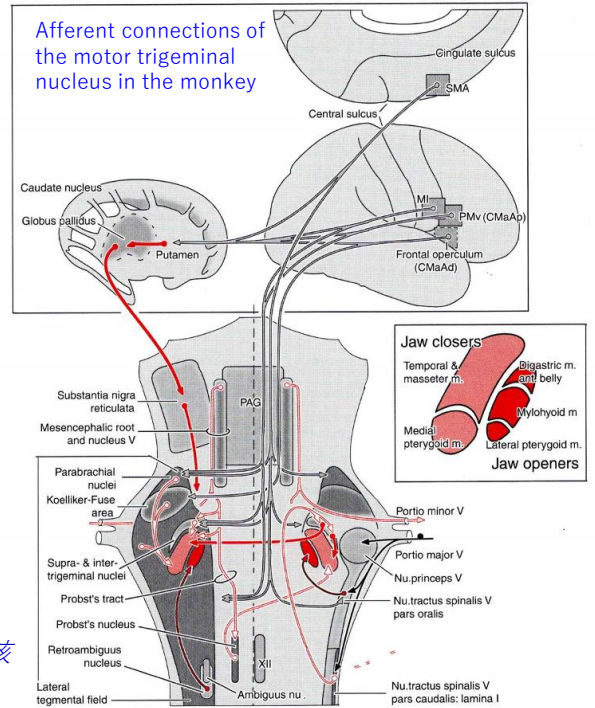
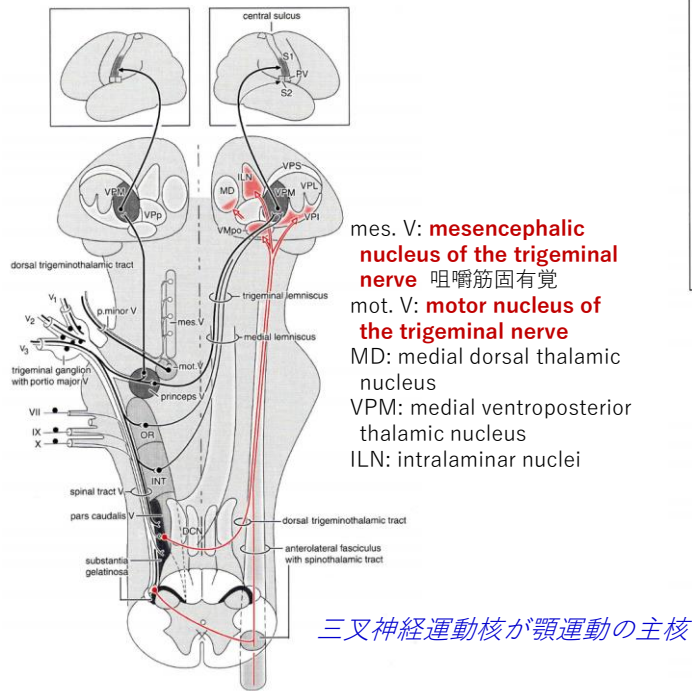


PAG: periaqueductal gray
MD: medial dorsal thalamic nucleus
VMpo :

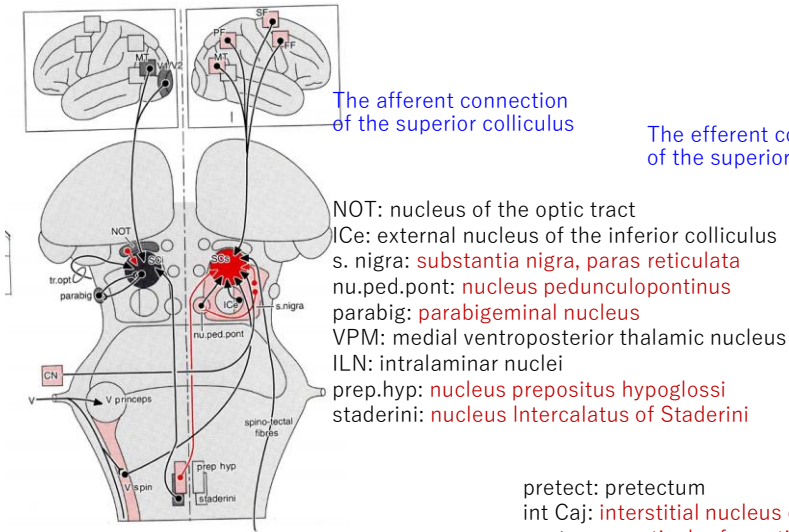
侵害刺激にはPAGが働く

2

Connection of the trigeminal nerve

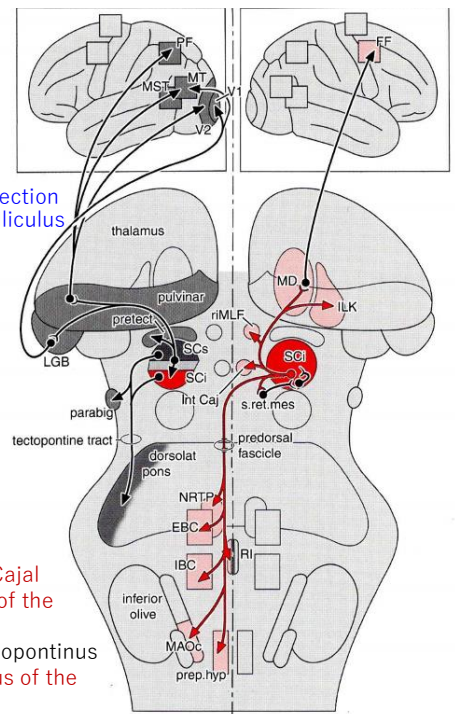


3



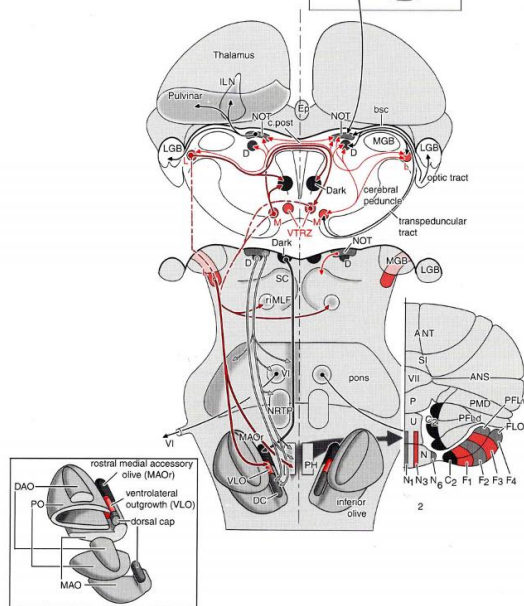
上丘は系統発生上は大脳の前駆

The efferent connection of the superior colliculus



4

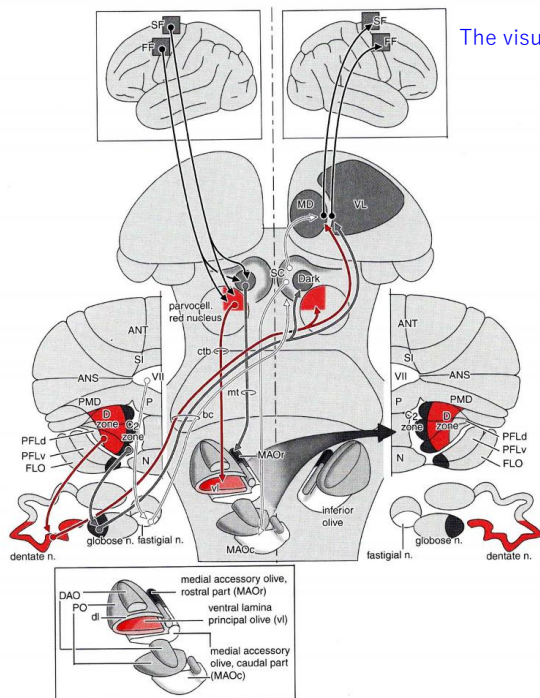
A diagram of a monkey brain in lateral view. A small black dot on the surface is labeled 'MT' (motor thalamus). A line extends from this dot to a shaded rectangular area on the brain's surface, which is labeled 'MST' (motor sensory thalamus).



NOT: nucleus of the optic tract
c.post: posterior commissure
Dark: nucleus of Darkschewitsch
D: dorsal terminal nucleus
M: medial terminal nucleus
VTRZ: ventral tegmental reflex zone

眼球運動の主座は中脳にある

5

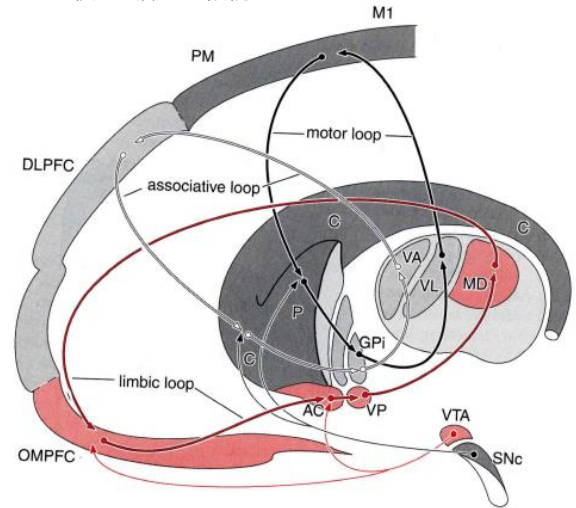


Dark: nucleus of Darkschewitsch
ctb: central tegmental tract
mt: medial tegmental tract
bc: brachium conjunctivum

中脳と小脳は連絡して視覚を担う

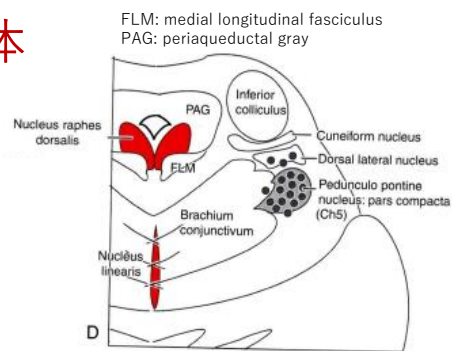
6

基底核・大脳の3機能ループ



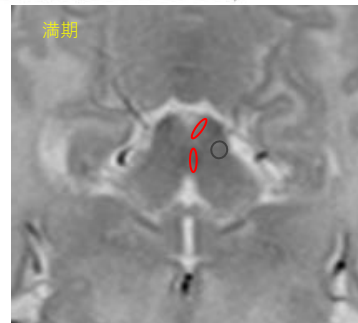
AC: **accumbens nucleus** 側坐核
VP: ventral pallidum (innominate substance)
SNc: **pars compacta of substantia nigra**
VTA: ventral tegmental area

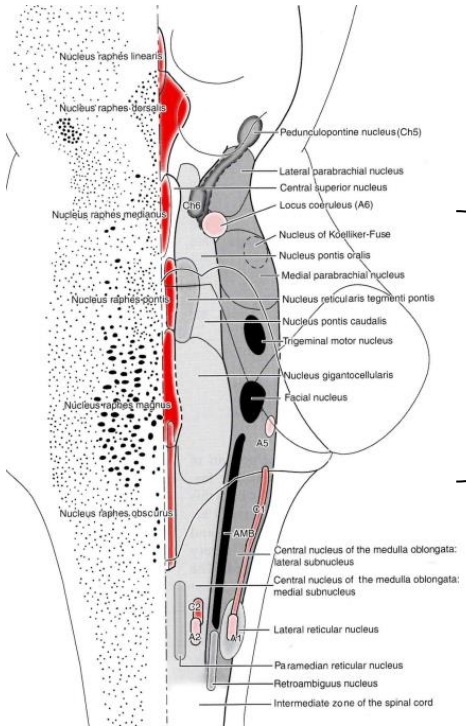
7



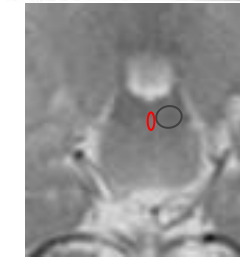
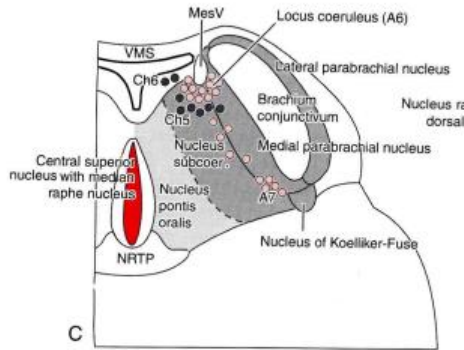
- Medial tegmental field (薄灰色)
- Lateral tegmental field (濃灰色)
- Raphe nuclei (赤色) *serotonergic*
- noradrenergic cell groups A1-A6 (桃色)
- adrenergic cell groups C1-C2 (薄赤色)
- cholinergic cell groups Ch5-Ch6 (灰色)

中脳は神経核が主体





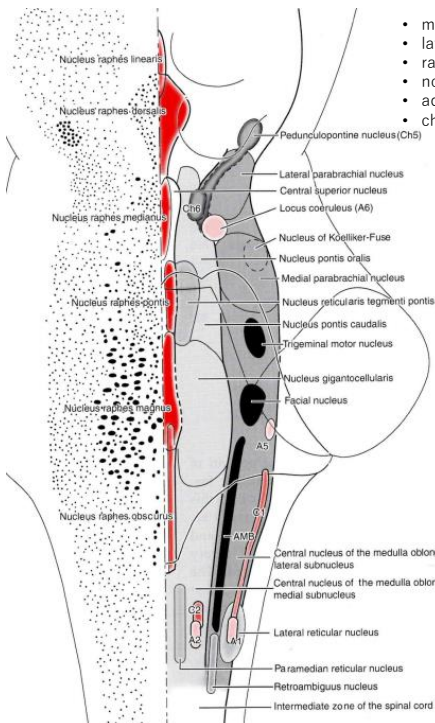
VMS: superior medullary velum
mes V: mesencephalic tract of the trigeminal nerve
NRTPT: nucleus reticularis pontis



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- raphe nuclei (赤色) *serotonergic*
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- cholinergic cell groups Ch5-Ch6 (灰色)

橋は神経核と網様体の両者

9

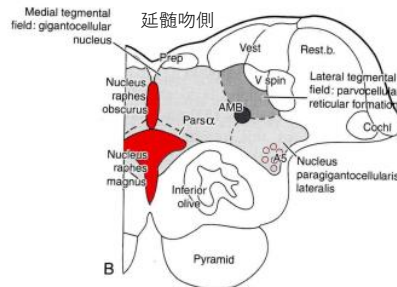


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延髄

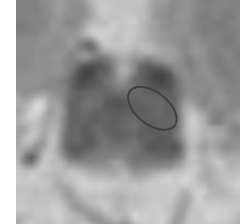
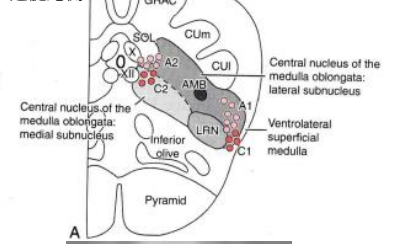
- 背側は神経核
- 腹側は神経核と網様体の両者

Prep: nucleus prepositus hypoglossi
Vest: vestibular nuclei
Rest.b: restiform body
V spin: spinal tract of the trigeminal nerve



SOL: nucleus of solitary tract
AMB: ambiguus nucleus
LRN: lateral reticular nucleus
X: dorsal vagal nucleus
XII: nucleus of the hypoglossal nerve

延髄尾側



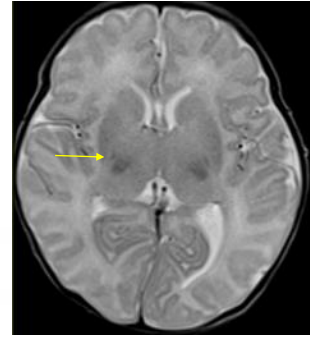
10

錐体路とは

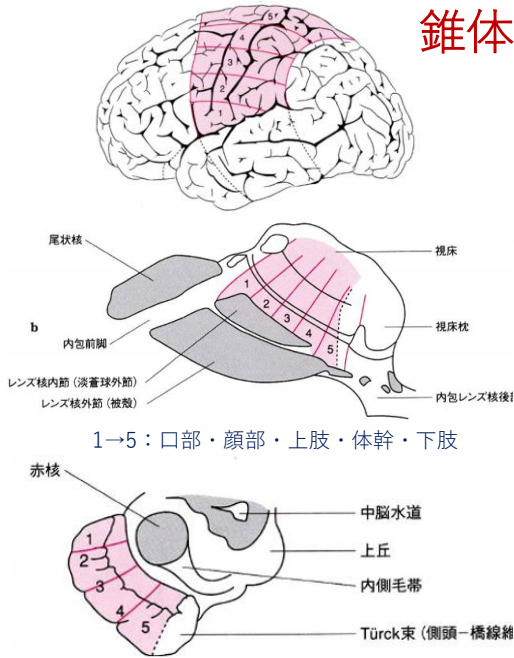
ALS脳

a, b : 内包

c : 大脳脚

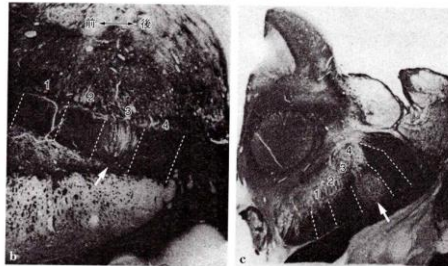
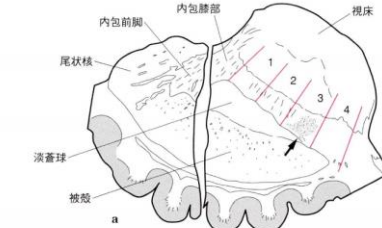


満期



(Dejerine 1901)

平山恵造「神経症候学」

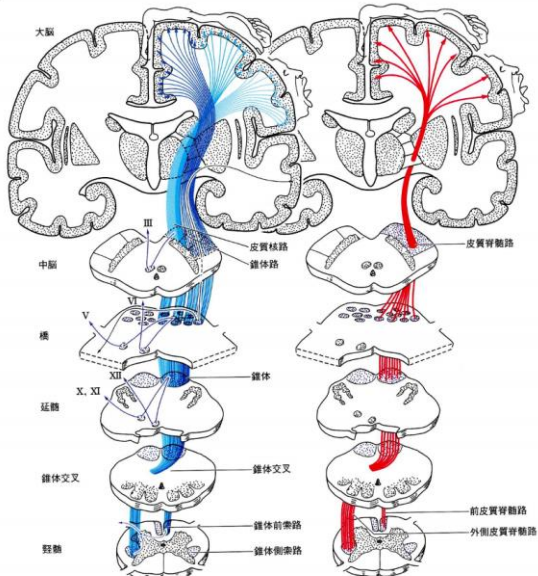


内

外

11

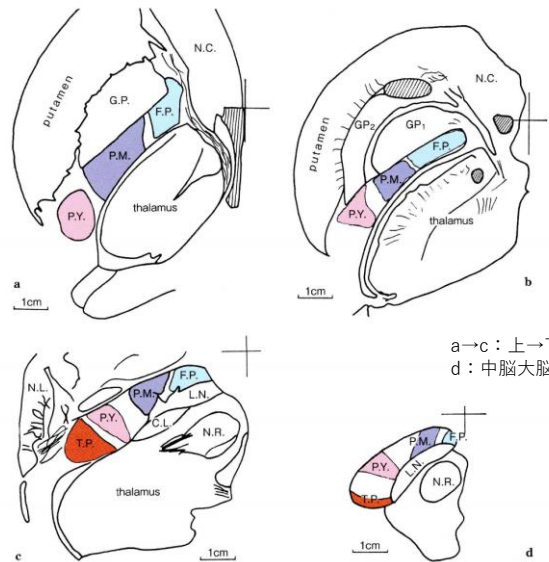
平山恵造「神経症候学」



a : 錐体路ならび錐体路迷行線維(皮質核路)

b : 皮質脊髓路

(Lazorthes 1973)



a→c : 上→下
d : 中脳大脳脚

P.Y. : 錐体線維(皮質脊髓路)

P.M. : 運動前野線維

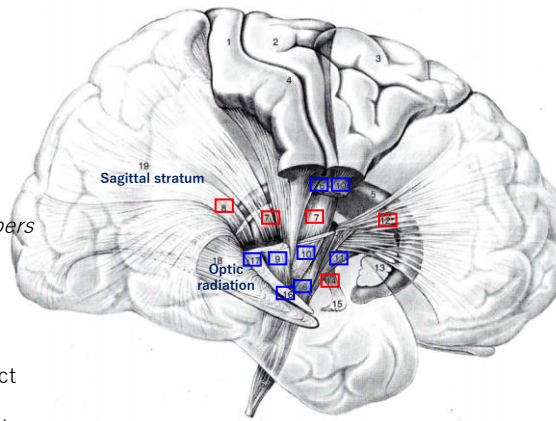
F.P. : 前頭-橋線維

T.P. : 側頭-橋線維

12

Corticofugal

- 内包前脚
11: Frontopontine tract
- 内包後脚
6: **Pyramidal tract**
≠ corticospinal tract
10: *Corticotegmental fibers*
corticobulbar?
corticonuclear?
9: **Parietopontine tract**
- 内包 レンズ核下部
16: Temporopontine tract
内包 レンズ核後部
17: Occipitopontine tract

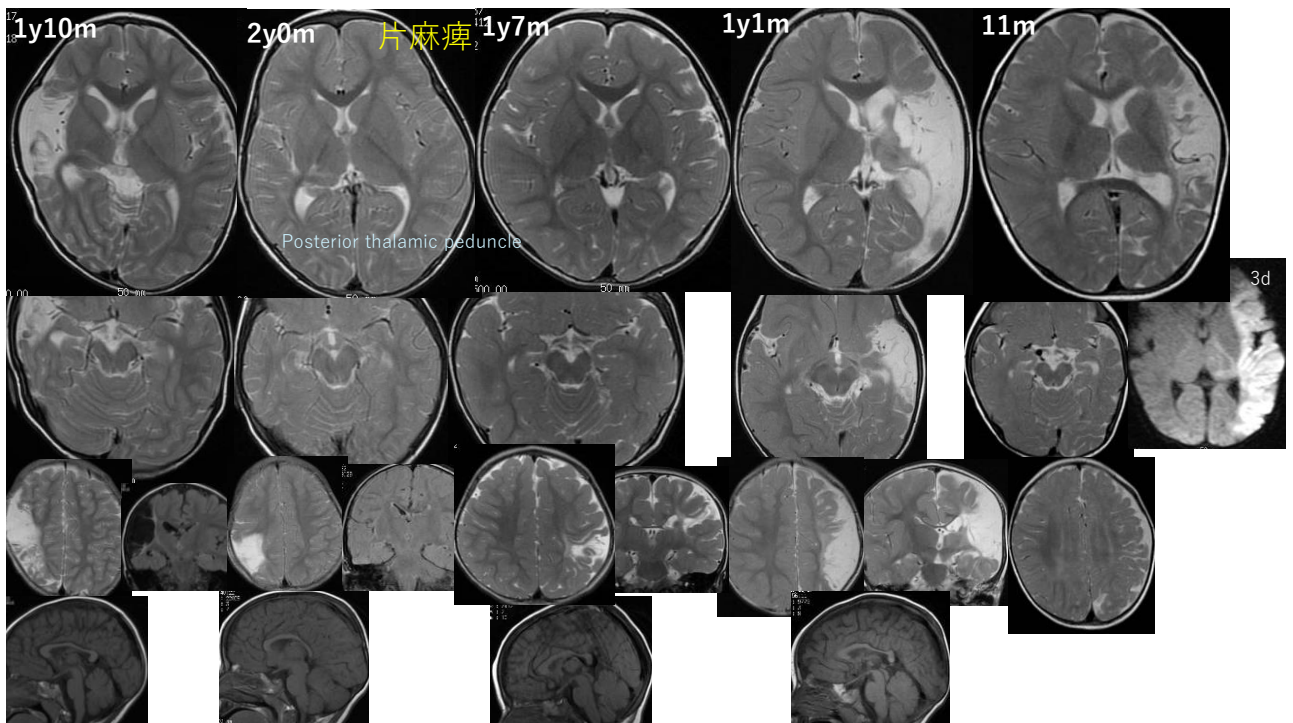


Thalamic peduncle

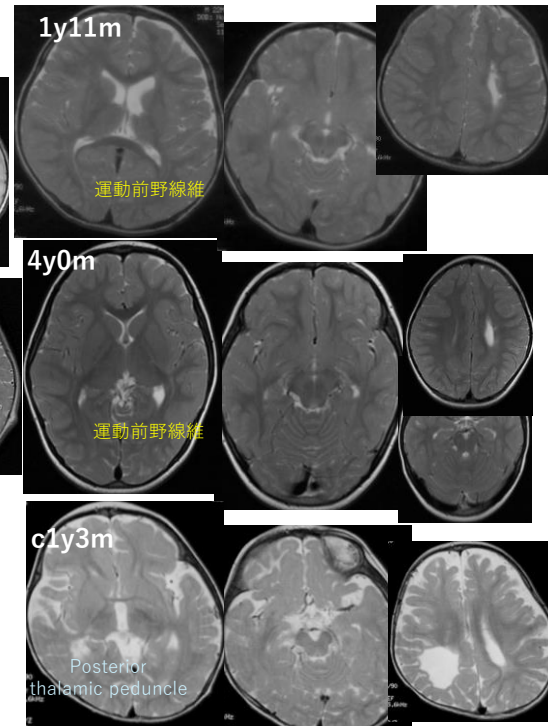
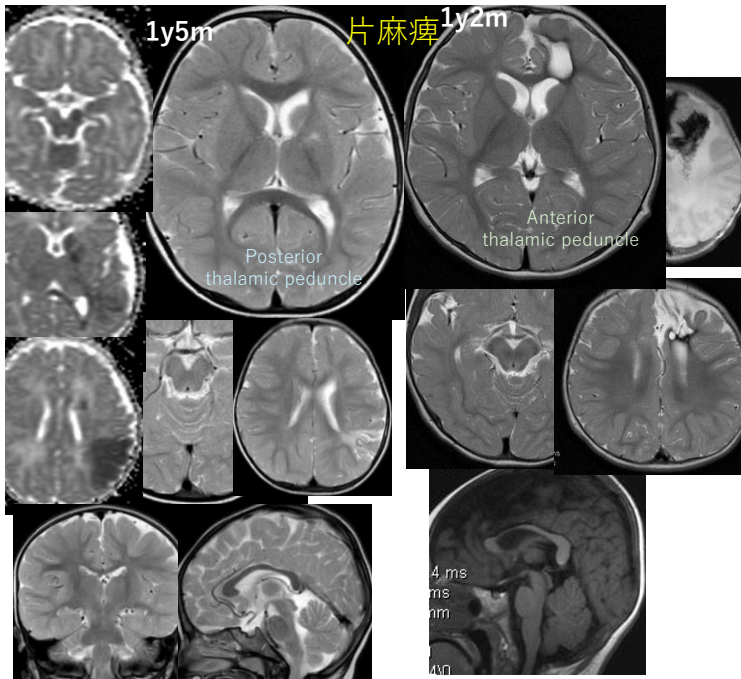
- 内包前脚
12: **Anterior thalamic peduncle**
前頭前皮質・眼窩前頭皮質と帯状回の相互連絡
- 内包後脚
7: **Superior thalamic peduncle**
8: **Posterior thalamic peduncle**
頭頂中央部・後頭側頭部と視床の相互連絡
- 内包後脚の内腹側
14: **Inferior thalamic peduncle**
眼窩前頭皮質・島皮質・扁桃体と視床の相互連絡
- 15: **Ansa peduncularis**

内包後脚走行線維は未確定

13

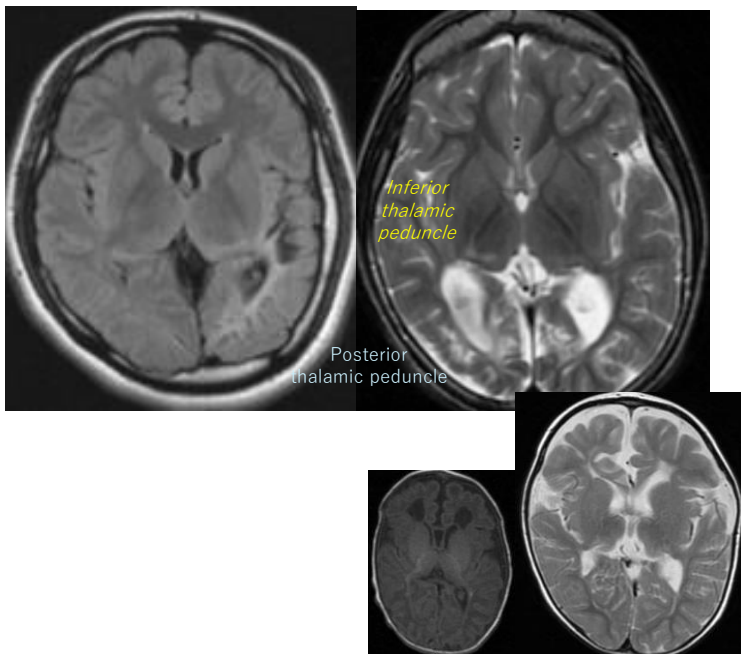


14

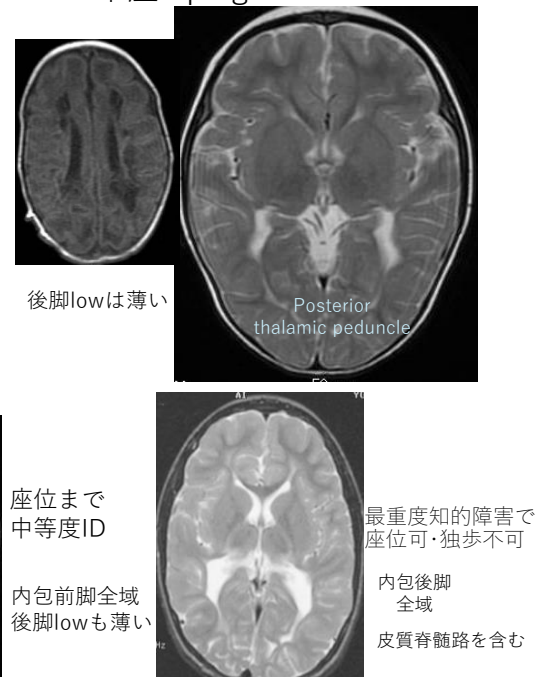


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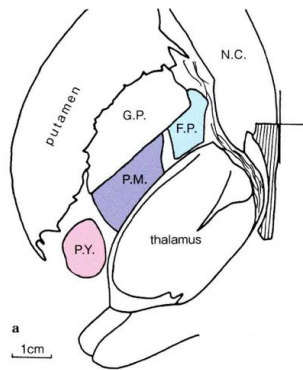
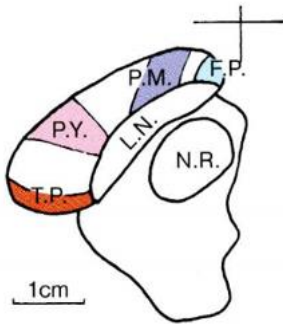
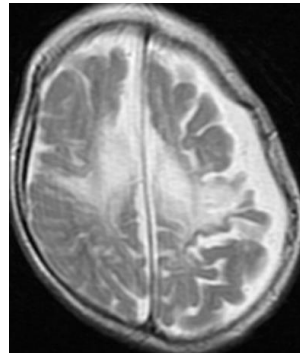
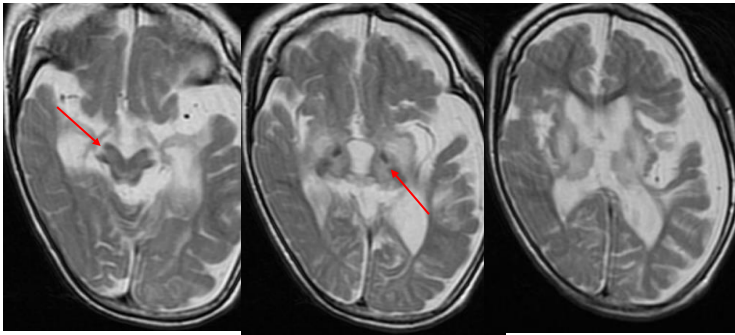
周生期外部型脳低血流障害（境界域梗塞）



早産diplegia



16



内包後脚・大脳脚の最強病変部は
P.M.：運動前野線維 である
皮質脊髓路の侵襲は軽い