see brain retractor.

Brain retraction is required for adequate exposure during many intracranial procedures. The incidence of contusion or infarction from overzealous brain retraction is probably 10% in cranial base procedures and 5% in intracranial aneurysm procedures. The literature on brain retraction injury is reviewed, with particular attention to the use of intermittent retraction. Intraoperative monitoring techniques–brain electrical activity, cerebral blood flow, and brain retraction pressure–are evaluated. Various intraoperative interventions–anesthetic agents, positioning, cerebrospinal fluid drainage, operative approaches involving bone resection or osteotomy, hyperventilation, induced hypotension, induced hypertension, mannitol, and nimodipine–are assessed with regard to their effects on brain retraction. Because brain retraction injury, like other forms of focal cerebral ischemia, is multifactorial in its origins, a multifaceted approach probably will be most advantageous in minimizing retraction injury. Recommendations for operative management of cases involving significant brain retraction are made. These recommendations optimize the following goals: anesthesia and metabolic depression, improvement in cerebral blood flow and calcium channel blockade, intraoperative monitoring, and operative exposure and retraction efficacy. Through a combination of judicious retraction, appropriate anesthetic and pharmacological management, and aggressive intraoperative monitoring, brain retraction should become a much less common source of morbidity in the future [1].

1)
Andrews RJ, Bringas JR. A review of brain retraction and recommendations for minimizing intraoperative brain injury. Neurosurgery. 1993 Dec;33(6):1052-63; discussion 1063-4. doi: 10.1227/00006123-199312000-00014. PMID: 8133991.