.个案报道.

高原地区急性进展型硬膜外血肿致脑疝1例

桑　布　旦　增　桑　杰　尊珠曲宗　齐洪武

【摘要】急性硬膜外血肿(AEDH)是颅脑损伤后3 d内在硬脑膜和颅骨内板之间的潜在空间中出现的血肿。部分AEDH病例为进展型,早期症状较轻或被对冲伤症状掩盖,首次头颅CT检查未发现硬膜外血肿或血肿量较小,经过一段时间后复查头颅CT出现血肿或血肿增大,病情严重者,甚至出现脑疝,危及病人生命。本文报道1例高原地区的AEDH,为50岁男性,因高处坠落伤致头痛、头晕伴恶心呕吐0.5 h入院,GCS评分14分,首次头颅CT示左侧侧裂区片状高密度影,左侧颞枕部颅板下气体影,其内夹杂少量硬膜外血肿,右侧颞底硬膜下弧形高密度影。入院后6 h发生病情变化,GCS评分7分,左侧瞳孔散大至5 mm、对光反射消失,复查头颅CT示左侧颞枕部大面积硬膜外血肿形成,中线明显右移,左侧侧脑室受压变形。急诊全麻下行开颅血肿清除术。术后2 h复查头颅CT示左侧颞枕部硬膜外血肿清除彻底。术后6个月随访,病人GOS评分5分。这提示颅脑损伤病人,具有手术指征时要及早行开颅减压和血肿清除术。

【关键词】颅脑损伤;急性硬膜外血肿;高原地区;脑疝;显微手术;疗效

【文章编号】1009−153X(2024)02−0126−03　【文献标志码】B　【中国图书资料分类号】R 651.1+5; R 651.1+1

Brain herniation caused by acute progressive epidural hematoma in plateau area: a case report

SANG Bu[1], DAN Zeng[1], SANG Jie[1], ZUNZHU Qu−zong[1], QI Hong−wu[2]. 1. Department of Surgery, Luozha County People's Hospital, Shannan 851200, China; 2. Department of Neurosurgery, The 980st Hospital of the PLA Joint Logistics Support Force, Shijiazhuang 050082, China

【**Abstract**】Acute epidural hematoma (AEDH) is a type of hematoma that develops in the potential space between the dura mater and the inner plate of the skull within 3 days following cranial trauma. Some cases of AEDH are progressive, with initial symptoms being mild or obscured by contusion symptoms; the first head CT scan may not detect the epidural hematoma or it may be small, but upon reexamination after some time, the hematoma may become apparent or increase in size. In severe cases, brain herniation may occur, posing a life−threatening risk to the patient. This paper reported a case of AEDH in a plateau area involving a 50−year−old male who presented to the hospital 0.5 hours after falling from a height with headaches, dizziness, nausea, and vomiting. The patient had a GCS score of 14 on admission. The initial head CT scan showed linear high−density in the left fissure area, gas shadow below the left temporal−occipital skull plate, along with a small amount of epidural hematoma, and curved high−density below right temporal base dura. Six hours after admission, the patient's condition deteriorated with GCS score dropping to 7 and dilated left pupil up to 5 mm with loss of light reflex. A repeat head CT revealed formation of large epidural hematoma in left temporal−occipital region, significant midline shift, and deformation of left lateral ventricle. An emergency craniotomy for hematoma evacuation was performed under general anesthesia. Postoperative CT scan 2 hours after surgery showed complete clearance of left temporal−occipital epidural hematoma. At six−month follow−up visit, the patient had a GOS score of 5. This suggests that patients with traumatic brain injury should undergo decompression and hematoma evacuation as soon as possible when the patients have the indication of surgery.

【**Key words**】Traumatic brain injury; Acute epidural hematoma; Brain herniation; Plateau area; Microsurgery; Efficacy

1 病例资料

50岁男性,因高处坠落伤致头痛头晕伴恶心呕吐0.5 h于2022年6月11日入院。既往体健。入院体格检查:体温36.9 ℃,脉搏66次/min,呼吸18次/min,血压119/88 mmHg;意识清楚,GCS评分14分,左侧枕部有一大小约2 cm×1 cm头皮挫裂伤,略有渗血,周边头皮肿胀;双侧瞳孔等大等圆、直径2.5 cm、对光反射灵敏;左侧外耳道有不凝血性液体流出;颈略抵抗;四肢肌力、肌张力正常,腱反射存在,双侧Babinski征阴性。入院首次头颅CT示左侧侧裂区片状高密度影,左侧颞枕部颅板下气体影,其内夹杂少量硬膜外血肿,右侧颞底硬膜下可见弧形高密度影(图1A~C)。初步诊断:创伤性蛛网膜下腔出血;右侧颞部硬膜下血肿;颅底骨折并左侧脑脊液耳漏;左侧颞枕部硬膜外血肿;左枕部头皮挫裂伤。予以止血、预防感染、止吐等药物治疗,并密切监测生命体征、密切观察病人病情变化。入院6 h,病人病情变化,头痛加重,继之意识模糊,恶心、呕吐数次。体格检查:体温37.2 ℃,脉搏88次/min,呼吸12次/min,血压148/96 mmHg,神志嗜睡,GCS评分7分,左侧瞳孔直径约5 mm、对光反射消失,右侧瞳孔直径3 mm、对光反射存在;右侧Babinski征阳性,左侧Babinski征阴性;颈抵抗。立即复查头颅CT显示左侧颞枕部大面积硬膜外血肿形成,中线明显右移,左侧脑室受压变形(图1D~F)。病人已出现脑疝征象,故急诊全麻下行开颅血肿清除术。采用左侧颞枕部马蹄形切口,长约25 cm,掀开皮瓣,即见骨面斜行骨折线;手摇钻钻骨孔5枚,线锯锯下骨瓣,

doi:10.13798/j.issn.1009−153X.2024.02.014

作者单位:851200 西藏山南,洛扎县人民医院外科(桑　布、旦　增、桑　杰、尊珠曲宗);050082 石家庄,联勤保障部队第九八〇医院神经外科(齐洪武)

通信作者:齐洪武,Email:827104781@qq.com

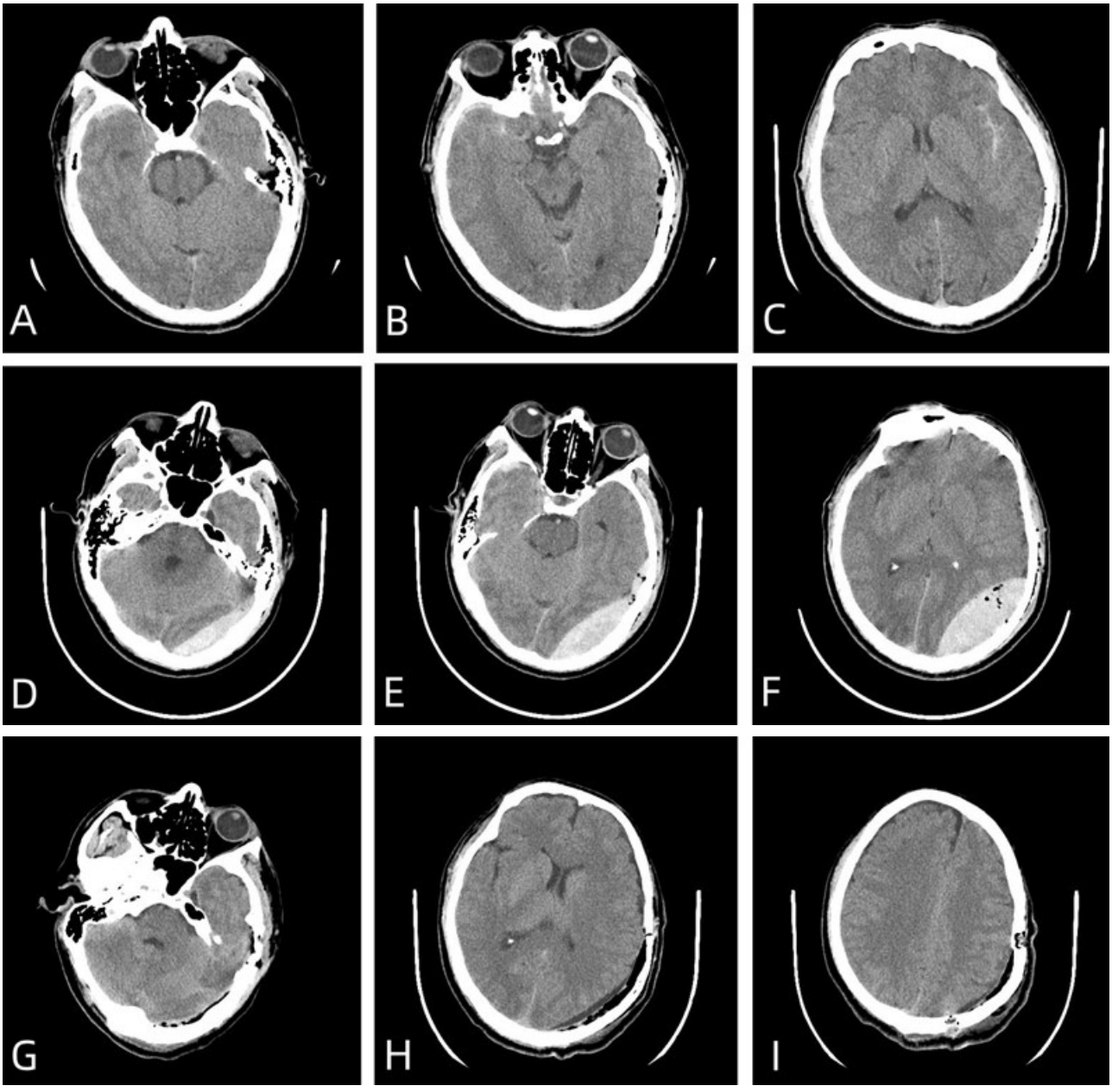

图1 1例高原地区性急性进展型硬膜外血肿手术治疗前后影像表现

A~C. 入院首次头颅CT显示右侧颞底薄层硬膜下血肿，左侧颞枕部颅板下气体影，其内夹杂少量硬膜外血肿，左侧侧裂区片状高密度影；D~F. 入院6 h复查头颅CT示左侧颞枕部大面积硬膜外血肿形成，血肿骑跨横窦，中线明显右移，左侧脑室受压变形；G~I. 术后2 h复查头颅CT示左侧颞枕部硬膜外血肿清除彻底，左侧侧裂区未形成血肿，右侧硬膜下血肿并未增大

Figure 1 Imaging findings of a case of acute progressive epidural hematoma in a plateau area before and after surgical treatment

A-C: The initial head CT scan on admission showed a thin layer of epidural hematoma on the right temporal base, gas below the left temporal-occipital skull plate, with a small amount of epidural hematoma, and a linear high-density in the left fissure area. D-F: Repeat head CT scan 6 hours after admission showed a large amount of epidural hematoma in the left temporal-occipital region, hematoma crossing the transverse sinus, significant midline shift, and deformation of the left lateral ventricle. G-I: Postoperative CT scan 2 hours after surgery showed complete clearance of the epidural hematoma in the left temporal-occipital region, no hematoma formation in the left fissure area, and no enlargement of the epidural hematoma on the right side.

见大量暗红色血肿；清除血肿量约80 ml，近横窦处渗血，予以明胶海绵填塞压迫，并骨窗周缘硬膜悬吊；骨窗周缘及骨瓣以骨科克氏针钻孔，骨瓣复位，丝线穿孔固定。术后病人意识清楚，左侧瞳孔回复，双侧瞳孔等大、等圆，直径2.5 mm，对光反射灵敏。术后2 h复查头颅CT示左侧颞枕部硬膜外血肿清除彻底，左侧侧裂区未形成血肿，右侧硬膜下血肿并未增大（图1G~I）。术后10 d拆除头皮切口缝线，切口愈合良好。病人恢复良好，术后2周出院。术后6个月随访，GOS评分5分，无任何后遗症。

2 讨 论

洛扎县人民医院地处海拔4030米的高原地区，氧含量63%左右。随着西藏经济、旅游业的飞速发展，流动人口基数相应增加，高海拔地区颅脑损伤病例也呈逐年上升趋势。高原颅脑损伤病人会发生严重的低氧血症，脑组织缺氧并存在着组织器官摄取和利用氧的障碍，从而促使脑水肿加剧，引发颅内压力持续增高，造成不可逆的脑坏死。所以，急诊入院的颅脑损伤病人，具有手术指征时，要及早行开颅减压和血肿清除术[1]。

病人的预后最终取决于管理的速度和质量，尤其是在发生不可逆转的脑损伤之前进行确定性手术。然而，创伤前病人的状态、病因和当地的医疗资源对预后是有影响的[2]。一般来说，这种颅脑外科手术只能在拥有一些最佳手术条件措施的专用医疗机构中以最佳方式进行，例如1级或2级创伤中心、专用神经重症监护设施，重要的是全身麻醉，涉及神经麻醉学和多模式监测。洛扎县人民医院为二甲医院，既往未开展颅脑相关手术，接诊的此类病人大多转诊至山南市或拉萨市医院，但转诊至少需4~5 h，大部分道路是山路，路况复杂，易受地质灾害影响，转运风险极大。近年来，军队和国家卫健委制定了援藏帮扶计划，使县医院初步配备神经外科手术的条件，包括人员培训和手术设备及器材设施。接诊本例病人后，向病人及家属交代颅内情况可能进展，并询问转运意愿，病人及家属要求在县医院继续诊治。

美国脑外伤基金会指南建议，无论病人的GCS评分如何，任何>30 cm^3的急性硬膜外血肿都应进行手术处理。该指南还建议在创伤后6~8 h内对非手术病例进行CT复查[3]。症状性急性硬膜外血肿手术治疗的目标是三管齐下[4]：①清除血肿以缓解升高的颅内压；②控制所有硬膜外来源的出血；③防止血液在硬膜外空间重新积聚。与急性硬膜外血肿相关的发病率和病死率是由于血肿扩大并将硬脑膜从颅骨上剥离，从而压迫大脑形成脑疝造成的。本文病例为进展型硬膜外血肿，且血肿骑跨横窦，出血来源可能为硬膜剥离、撕裂出血和颅骨骨折板障出血等，多出血源同时存在。血肿迅速增大压迫横窦时，造成颅内压进一步增高。术中实际上不需要将硬脑膜清理至光滑，更谨慎的做法是在硬脑膜表面留下一些血凝块残留物，覆贴于出血点，避免引发新鲜出血。另外，可应用明胶海绵贴敷，骨蜡进行骨窗周缘封堵出血，骨窗下尤其是邻近静脉窦的出血，可填塞明胶海绵后行硬膜悬吊止血。高原地区监测血氧饱和度十分重要，可以间接反映大脑缺血缺氧状况，及时控制脑水肿，因此建议术后给予氧气支持。

【利益冲突声明】：本文不存在任何利益冲突。

【作者贡献声明】：桑布、齐洪武负责收集资料、资料分析、撰写论文及修改论文；旦增、桑杰参与修改论文及最后定稿；尊珠曲宗参与收集资料、资料分析。

【参考文献】

[1] SRINIVASAIAH B, VENKATARAMAIAH S, SADASHIVA N, *et al*. Impact of perioperative factors on short-term outcomes after emergency surgery for acute traumatic extradural hematoma--a retrospective cohort study [J]. Clin Neurol Neurosurg, 2023, 232: 107874.

[2] BISEN YT, KORDE P, DIGHE O, *et al*. Decompressive craniectomy in the management of low glasgow coma score patients with extradural hematoma: a review of literature and guidelines [J]. Cureus, 2023, 15(1): e33790.

[3] SOON WC, MARCUS H, WILSON M. Traumatic acute extradural haematoma--indications for surgery revisited [J]. Br J Neurosurg, 2016, 30(2): 233-234.

[4] ADELEYE AO, IDOWU OK, GHADIRPOUR R, *et al*. Minicraniotomy under local anesthesia and monitored sedation for the operative treatment of uncomplicated traumatic acute extradural hematoma [J]. World Neurosurg, 2020, 142: 513-519.

（2022-11-01收稿，2023-02-13修回）