

DOI:10. 12138/j. issn. 1671—9638. 20262833

· 病例报告 ·

甘肃省首例成人 Y 群脑膜炎奈瑟菌感染致化脓性脑脓肿及其重症管理

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[摘要] 流行性脑脊髓膜炎(流脑)是由脑膜炎奈瑟菌(Nm)感染引起的急性呼吸道传染病,常在冬春季发病和流行,主要表现为脑膜炎和血流感染,两者可同时出现,但多以单一脑膜炎或血流感染为主要表现。根据荚膜多糖的抗原成分可将 Nm 分为 12 个血清群,其中 A、B、C、W、X 和 Y 为最常见血清群。2025 年 2 月 14 日兰州大学第二医院报告 1 例成人流脑疑似病例,根据其流行病学特征、临床表现并结合实验室检测结果,诊断为 Y 群流脑病例。该病例是甘肃省首例由 Y 群 Nm 引起的成人流脑病例,患者继发脑脓肿及菌血症。临床团队通过精准诊断、多模态生命支持及规范重症管理,为患者争取了生存机会,成功避免其出现永久性神经功能缺损。此病例提示需加强 Y 群流脑的病原学监测与预防,并重视重症病例的早期识别、抗菌药物的精准选择及综合救治。

[关键词] 流行性脑脊髓膜炎; Y 群脑膜炎奈瑟菌; 重症管理; 脑脓肿; 甘肃省

[中图分类号] R741.05

The first adult case of purulent brain abscess caused by group Y *Neisseria meningitidis* infection and critical care management in Gansu Province

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[Abstract] Epidemic cerebrospinal meningitis (CSM) is an acute respiratory infectious disease caused by *Neisseria meningitidis* (Nm) infection, often occurring and spreading in winter and spring. It primarily manifests as meningitis and bloodstream infection, which may occur simultaneously, but often presents with either meningitis or bloodstream infection alone as the main symptom. Based on the antigenic components of capsular polysaccharides, Nm can be classified into 12 serotypes, with A, B, C, W, X, and Y being the most common serotypes. On February 14, 2025, the Second Hospital of Lanzhou University reported one suspected adult case of epidemic CSM. Based on epidemiological characteristics, clinical manifestations, and laboratory test results, the case was diagnosed with group Y CSM. This case was the first adult case of epidemic CSM caused by group Y Nm in Gansu Province, with secondary brain abscess and bacteremia. The clinical team strived for the survival opportunity for the patient through precise diagnosis, multimodal life support and standardized critical care management, and successfully preventing permanent neurological deficits. This case highlights the need to strengthen pathogen surveillance and prevention of group Y epidemic CSM, with a focus on early identification of severe cases, precise selection of antimicrobial agents, and comprehensive treatment.

[收稿日期] 2025-08-04

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[Key words] epidemic cerebrospinal meningitis; group Y *Neisseria meningitidis*; critical care management; brain abscess; Gansu Province

脑膜炎奈瑟菌(*Neisseria meningitidis*, Nm)是健康个体正常鼻咽微生物菌群的组成菌之一,可导致易感者发生败血症和脑膜炎,并通过呼吸道飞沫传播^[1],其引起的流行性或散发性脑膜炎和/或败血症在全球儿童和年轻人中发病率和病死率均较高^[2]。流行性脑脊髓膜炎(流脑)疫苗的普及,使流脑发病率逐年下降。近年来,我国流脑菌群分布发生变化,由常见的 Nm A 群逐渐转为非疫苗覆盖血清群,给流脑防控带来新挑战^[3-4]。Nm Y 群在我国少见,本文报告甘肃省首例成人 Y 群流脑病例及其重症管理,以期对流脑的预防及临床诊治提供参考。

1 病例资料

患者,男,21 岁,主因“突发四肢抽搐伴发热 5 d”于 2025 年 2 月 14 日就诊于兰州大学第二医院神经重症监护科。患者入院前 5 天晨起后突发四肢抽搐,呈强直阵挛发作,持续 4 min 左右缓解,意识模糊,体温 38.9℃,就诊于当地医院行脑脊液、血培养提示 Nm。患者既往有脑外伤病史,入院前左耳

流水史,当地医院予以抗感染治疗后患者病情未见好转,遂转入兰州大学第二医院神经重症监护科治疗。专科查体:中度昏迷,气管插管接呼吸机辅助通气,双瞳等大等圆,直径约 3 mm,对光反射迟钝,角膜反射存在,眼位居中无眼震,四肢肌力查体不合作,肌张力适中,腱反射存在,双侧病理征阴性,颈软无抵抗。辅助检查:血常规示白细胞计数 $13.38 \times 10^9/L$ 、中性粒细胞比率 76.20%,降钙素原 1.3 ng/mL,肌酸肌酶 21 114 U/L;腰穿压力 200 mmH₂O,脑脊液颜色淡黄色透明,白细胞计数 $2 098 \times 10^6/L$,单核细胞百分比 11%,葡萄糖 1.51 mmol/L(同期血糖 7.6 mmol/L),总蛋白 1.56 g/L,氯 131.50 mmol/L;脑脊液十二项细胞因子中,白介素-6 为 11 276.96 pg/mL,白介素-8 为 5 121.69 pg/mL,白介素-10 为 154.62 pg/mL。甘肃省疾病预防控制中心脑脊液回报结果显示为 Nm Y 群,为甘肃省成人首例。心肺腹相关检查未见慢性异常。2 月 26 日头颅磁共振成像(MRI)示双侧额部、右侧顶部、颞部硬膜下及大脑纵裂积脓,右侧额颞叶软化灶,见图 1。

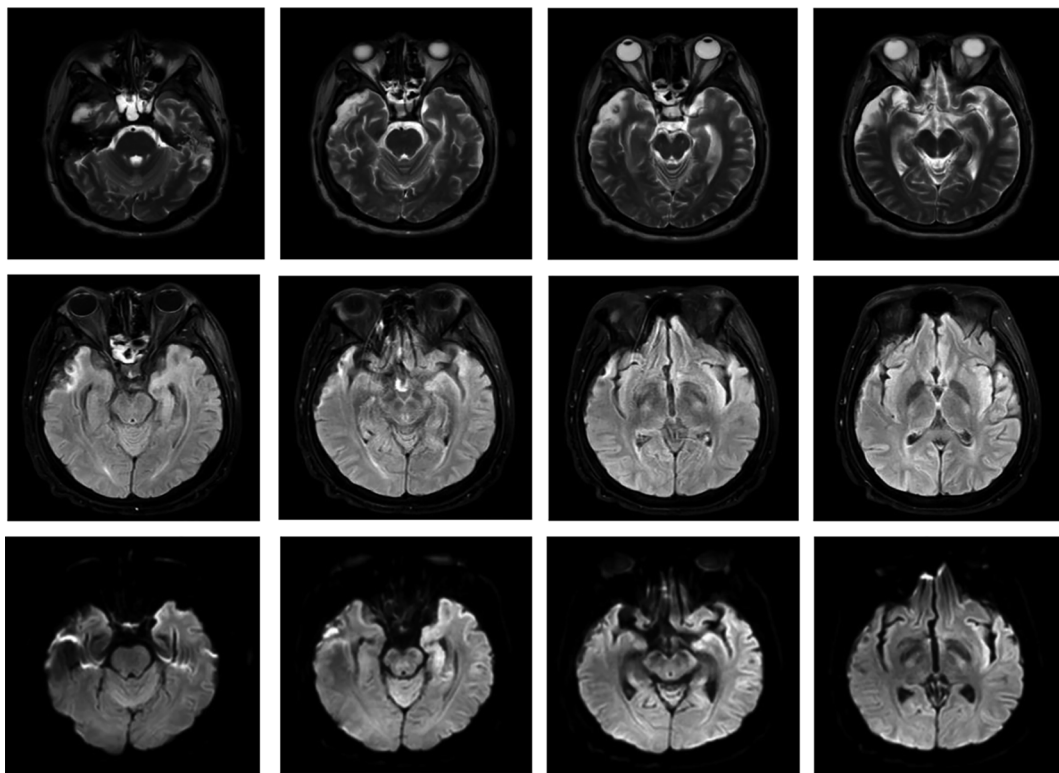


图 1 患者治疗前头颅 MRI 检查结果

Figure 1 Cranial magnetic resonance imaging findings of patient before treatment

流行病学调查采集患者密切接触人员咽拭子,结果均未见阳性。该病例发病前无外出史,也无与其他类似病例接触史。根据药敏结果选用美罗培南抗感染治疗后病情好转,于 2 月 25 日顺利脱机拔管,转出监护病房。3 月 10 日复查头颅 MRI:双侧额部、大脑纵裂积脓,对比前片范围缩小;右侧额颞叶、

左侧颞叶软化灶,见图 2。腰穿:脑脊液清亮,压力 50 mmH₂O,脑脊液白细胞计数 $16 \times 10^6/L$,葡萄糖 2.63 mmol/L,总蛋白 0.36 g/L,氯 127.40 mmol/L;脑脊液十二项细胞因子:白介素-6 25.28 pg/mL、白介素-8 497.24 pg/mL、白介素-10 17.18 pg/mL。患者于 3 月 17 日出院返家。

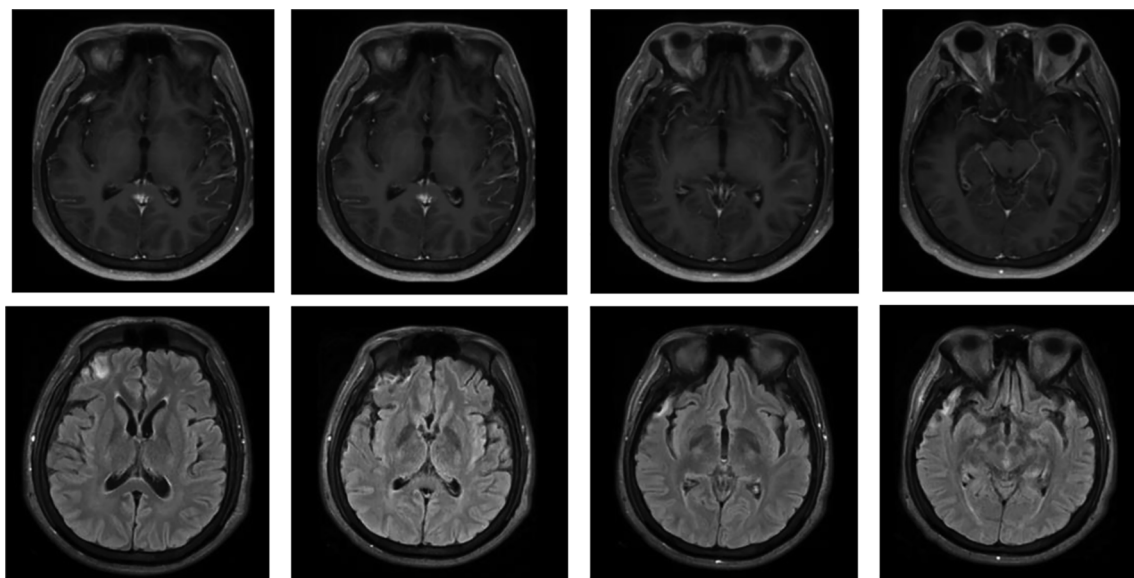


图 2 患者治疗后头颅 MRI 检查结果

Figure 2 Cranial magnetic resonance imaging findings of patient after treatment

2 讨论

Nm 是一种人类特异性革兰阴性双球菌,是脑膜炎或菌血症的病原体^[5]。流脑疫苗普及后,我国流脑菌群分布发生变化,致病株以 B 群、C 群、W 群为主, Y 群呈上升趋势^[6],并在多个省市相继出现^[7-8]。

本文报告了甘肃省首例成人 Y 群流脑重症病例。该患者起病急、病情危重,表现为化脓性脑炎与菌血症。流行病学调查确认为本地感染。结合其脑外伤及耳部流水病史,其发病原因可能为带菌状态或隐性感染,细菌入血、入颅导致继发化脓性脑膜炎及菌血症。确认 Y 群 Nm 感染后,根据药敏结果选用美罗培南控制感染,治疗后患者脑脊液检验结果明显好转。患者因癫痫发作、意识昏迷入住神经重症监护室,以确保氧合、气道保护和循环支持,以及预防和治疗可能影响预后的继发性并发症。针对患

者出现发热、脑水肿、颅内压升高及癫痫持续状态,给予了物理降温、冰毯冰帽亚低温、甘露醇及丙戊酸钠和丙泊酚控制癫痫等综合治疗,经过重症监护综合管理,患者意识恢复且未遗留残疾,治疗效果满意。

综上所述,这是甘肃省首例 Y 群流脑成人化脓性脑脓肿患者,病情危重,经精准抗感染与重症监护综合救治后康复。期待通过该病例报告,为该病的早期识别与重症管理提供临床参考价值。

利益冲突:所有作者均声明不存在利益冲突。

[参考文献]

- [1] Caugant DA, Brynildsrud OB. *Neisseria meningitidis*: using genomics to understand diversity, evolution and pathogenesis [J]. Nat Rev Microbiol, 2020, 18(2): 84-96.
- [2] Rouphael NG, Stephens DS. *Neisseria meningitidis*: biology, microbiology, and epidemiology [J]. Methods Mol Biol, 2012, 799: 1-20.

- [3] Wang JF, Caugant DA, Li X, et al. Clonal and antigenic analysis of serogroup A *Neisseria meningitidis* with particular reference to epidemiological features of epidemic meningitis in the People's Republic of China[J]. Infect Immun, 1992, 60(12): 5267–5282.
- [4] Xu J, Chen YQ, Yue MM, et al. Prevalence of *Neisseria meningitidis* serogroups in invasive meningococcal disease in China, 2010–2020: a systematic review and Meta-analysis[J]. Hum Vaccin Immunother, 2022, 18(5): 2071077.
- [5] Sridhar S, Greenwood B, Head C, et al. Global incidence of serogroup B invasive meningococcal disease: a systematic review[J]. Lancet Infect Dis, 2015, 15(11): 1334–1346.
- [6] 李军宏, 吴丹, 尹遵栋, 等. 2015—2017 年中国流行性脑脊髓膜炎流行特征分析[J]. 中华预防医学杂志, 2019, 53(2): 159–163.
- Li JH, Wu D, Yin ZD, et al. Analysis of epidemic characteristics for meningococcal meningitis in China during 2015–2017[J]. Chinese Journal of Preventive Medicine, 2019, 53(2): 159–163.
- [7] 芮莉萍, 刘婷婷, 刘铭, 等. 2023 年贵州省首例 Y 群流行性脑脊髓膜炎病例调查[J]. 中国疫苗和免疫, 2024, 30(2): 165–168.
- Rui LP, Liu CT, Liu M, et al. Investigation of the first case of group Y meningococcal meningitis in Guizhou province, 2023[J]. Chinese Journal of Vaccines and Immunization, 2024, 30(2): 165–168.
- [8] 高亚东, 梁雪晨, 郑恩惠, 等. 福建省 Y 群脑膜炎奈瑟菌病原学和基因组学分析[J]. 中华微生物学和免疫学杂志, 2024, 44(10): 879–885.
- Gao YD, Liang XC, Zheng EH, et al. Etiological and genomic analysis of *Neisseria meningitidis* serogroup Y in Fujian Province[J]. Chinese Journal of Microbiology and Immunology, 2024, 44(10): 879–885.

(本文编辑:翟若南)

本文引用格式:杨宝慧,张春霞,张秉玲,等. 甘肃省首例成人 Y 群脑膜炎奈瑟菌感染致化脓性脑脓肿及其重症管理[J]. 中国感染控制杂志, 2026, 25(1): 123–126. DOI: 10.12138/j.issn.1671-9638.20262833.

Cite this article as: YANG Baohui, ZHANG Chunxia, ZHANG Bingling, et al. The first adult case of purulent brain abscess caused by group Y *Neisseria meningitidis* infection and critical care management in Gansu Province [J]. Chin J Infect Control, 2026, 25(1): 123–126. DOI: 10.12138/j.issn.1671-9638.20262833.