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Characteristics of arrangement of 10 nm and 30 nm chromatin fiber necleosomes in cerebral cell nuclei in rats of different ages

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Abstract **Objective:** To observe the characteristics of arrangement of 10 nm and 30 nm chromatin fiber necleosomes in cerebral cell nuclei in rats of different ages and explore the molecular mechanism for the inducing effects of aging on decline in transcription activities of the cerebral cell nuclei. **Methods:** Micrococcal nuclease (MCN) was used as the probe to study chromatin structure and agarose gel electrophoresis and sucrose density gradient centrifugation were employed to investigate the changes of cerebral chromatin structure in rats of different ages. **Results:** The 10 nm chromatin fiber of the cerebral nuclei in young, adult and old rats had a repeat length of 176± 4, 175± 6 and 178± 7 bp respectively. In 30 nm chromatin fiber oligomers, the number of nucleosomes was 39± 0.47, 42± 0.26 and 46± 0.02 when 30% chromatin had been digested by MCN, but 18± 0.12, 21± 0.41 and 26± 0.27 when 50% chromatin had been digested by MCN in the young, adult and old rats respectively. **Conclusion:** The repeat length of the nucleosomes in 10 nm chromatin fibers in the cerebral nuclei is not associated with aging. The size of oligomers in 30 nm chromatin fibers is positively correlated to aging. These suggest that the changes of the cerebral nuclear chromatin against MCN digestion occur during aging, which might be one of the important reasons for decline in transcription of the cerebral nuclei caused by aging.

Key words cerebrum; chromatin; nucleosome; structure; rat

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颌面刀砍伤并发颅内血肿 1例报告

A case report of intracranial hematoma accompanying maxillofacial cut wound

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颌面部和颅脑解剖位置相连,在高速交通事故伤和火器伤中常见并发损伤[1,2],但面部刀砍伤致颅内血肿少见报道。

1 一般资料

患者王某,男,10岁,因右颞颧区菜刀砍伤 6 h入院。入院时检查神志清楚,呼吸平稳,脉搏稍快, 130次/min,血压 12 kPa/8 kPa。面部检查见:右眶外侧至右枕部有一长 10 cm的软组织裂伤,深达颞骨、枕骨骨面,另有一裂伤自右颧骨下方至右耳屏,长 6 cm,伤口已无明显出血,伤口内充满凝血块。立即输血、补液,同时送手术室急诊全麻下清创。术中见右颞骨、枕骨骨面均有线形骨折,但颅骨无凹陷,清创后放引流分层对位缝合。术后 6 h患者仍未清醒,但生命体征平稳,急诊头颅 CT检查,报告:右颞部硬膜外血肿。立即转脑外科急诊开颅手术,清除颅内血肿,术后 8 h患者清醒,术后 7~ 10 d面部、头部拆线,伤口愈合良好,神经系统检查无明显异常发现。

2 讨论

由于颌面和颅脑间的特殊解剖关系,各种类型损伤时均易发生并发损伤。本文报告的病例即为面部刀砍伤并发颅内血肿,由于初诊时无任何颅内损伤的症状和体征,未作特殊检查和处理。面部手术后密切观察病情,发现异常表现后立即作相应检查,迅速作出诊断和治疗,使患者转危为安。

关键词 颅内血肿;面部损伤

中图法分类号 R782.4

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