

成人顱骨之微小裂隙

Microfissures of Adult Temporal Bones

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摘要

人類顱骨微小裂隙(micro fissure)之形成咸信與骨性迷路成熟時及顱骨乳突氣化時所產生之內部壓力有關。因此類研究十分困難，故相關文獻極為少見。而關於台灣及日本成人顱骨微小裂隙之研究則罕見諸文獻報告，本研究檢讀台灣及日本成年人之顱骨切片，研究觀察台灣及日本成人顱骨內微小裂隙之存在情形，建構台灣及日本成人顱骨於微小裂隙相關研究之基本資料。方法：70件取自解剖學實驗室之台灣及日本成人顱骨標本，經固定、脫鈣、脫水、包埋後製成厚20 μm 之連續水平切片、每隔10片切片取一片，以Harris' hematoxylin染色，封片後於光學顯微鏡下檢讀。結果：研究標本僅59件切片成功。其中40件可於所檢讀之切片中發現微小裂隙(67.4%)；其位置可見於顏面神經管與中耳腔之間(40%)、顏面神經管與鐙骨肌之間(37.5%)、卵圓囊壁(30%)、顏面神經管及卵圓囊壁之間(15%)、圓窗龕及後半規管壺腹之間(15%)、卵圓囊及內聽道之間(15%)、顏面神經管與匙狀突間(12.5%)、卵圓窗旁(7.5%)、內頸動脈管壁(7.5%)、後半規管壁(2.5%)，及鼓岬壁(2.5%)。結論：台灣及日本成人顱骨之微小裂隙除了沿著顏面神經管壁至圓窗龕發現大量存在之外，亦可見於前庭四周、內頸動脈管壁及鼓室岬。此結果顯示台灣及日本成人顱骨微小裂隙之形成除了可能有咬合應力之影響外，亦可能混合了胚胎發育及顱骨內顯微環境變化等因素。

Abstract

BACKGROUND: The existence of microfissures has been reported in the literature since 1905. Microfissures are found mainly between the round window niche and the posterior semicircular canal ampulla as well as in the oval window area. The formation of these microfissures may due to the internal pressures caused by maturation of the bony labyrinth and pneumatization of mastoid. Only a few publications have identified microfissures of the temporal bone. This study is aimed at evaluating the location of microfissures in the temporal bones of Taiwanese and Japanese adults. **METHODS:** After fixation, decalcification and embedding, seventy temporal bones obtained from Taiwanese and Japanese adults were cut to a thickness of 20 μm horizontally. Light microscopy examination was performed after Harris' hematoxylin staining. **RESULTS:** Fifty-nine temporal bones were successfully processed. Of these temporal bones, 40 (67.4%)

exhibited microfissures. Microfissures could be identified between the fallopian canal and tympanic cavity (40.0%), between the fallopian canal and stapedial muscle (37.5%), at the utricle (30.0%), between the fallopian canal and the utricle (15.0%), between the fallopian canal and the posterior semicircular canal ampulla (15.0%), between the fallopian canal and choleariform process (12.5%), beside the round window niche (7.5%), at the bony wall of internal carotid artery (7.5%), at the bony wall of posterior semicircular canal (2.5%) and at the promontory wall (2.5%). CONCLUSION: Microfissures of the temporal bones of Taiwanese and Japanese adults do not only exist along the fallopian canal to the round window niche in the main, but also exist around the bony vestibular wall, the bony wall of internal carotid artery and the promontory wall. The locations of these microfissures suggest that the cause of the microfissures may involve complex factors such as the mechanical stress of mastication, fetal development and changes in the microscopic environment within the temporal bone.