

# 骨刺微細結構的研究

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## 摘要

一般人在他一生中，都會有下背痛的經驗。許多有持續性下背痛的病患，其腰椎都有骨刺的問題。骨刺一般長在椎體一角，造成椎體型態的改變。放射學家常以 X 射線來檢查骨刺，但此法卻無法觀察到骨刺的微細結構。所以本實驗的主要目的，在以放射影像及大體之骨骼檢體作整體的檢測。此實驗設計在觀察腰椎椎體骨刺的結構，不同的測量參數包括骨小樑與皮質骨的厚度及骨刺數目等。將十位大體分成兩群：正常組與骨刺組。結果骨小樑厚度在正常組為  $0.37 \pm 0.01$  mm，骨刺組為  $1.06 \pm 0.22$  mm；皮質骨厚度在正常組為  $0.47 \pm 0.04$  mm，骨刺組為  $2.24 \pm 0.16$  mm；骨刺數目在  $K \leq 1.01$  時數目為  $0.5 \pm 0.5$ ，在  $K \geq 1.02$  時骨刺數目為  $9.75 \pm 2.1$ 。本實驗結果顯示骨小樑和皮質骨厚度與椎體骨刺之存在與否有關，而骨刺數目則與兩側髖骨的重量比值有相關性。由此結果可推測骨刺的生成與生物力學反應有關，如對骨組織的壓迫力。

關鍵字：骨刺、皮質骨、骨小樑

## Study on Microstructure of Osteophyte

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### Abstract

People might suffer low backache some time in their life. Many patients who have persistent low backache might result from lumber vertebral osteophyte. Osteophytes might locate appear at the vertebral corners, resulting in the change in the vertebra' s shape. Radiologists often use x-ray of osteophytes, but the x-ray method can not show the microstructure of osteophyte. Then the subjects with full set of data for radiographs and cadavers bone specimens were examined. The study was designed to assess the osteophyte structure of lumber vertebral body. Different in parameters of the thickness of trabecular bone, cortex, and the number of osteophyte was measured. A total of 10 cadavers was divided into two groups (normal vertebral body and osteophyte ): the thickness of trabecular bone of normal vertebra was  $0.37 \pm 0.01$  mm, and that of the osteophyte group was  $1.06 \pm 0.22$  mm; the thickness of cortical bone of normal vertebra was  $0.47 \pm 0.04$  mm, and that of the osteophyte group was  $2.24 \pm 0.16$  mm. The weight of right and left hip bones was obtained to determine K value, which was defined as a ratio of the higher weight to the lower weight of the bones. The number of osteophytes was  $0.5 \pm 0.5$  (for the group of  $K \leq 1.01$  ) and  $9.75 \pm 2.1$  for the group with  $K \geq 1.02$ . The results showed that the thickness of cortical and trabecular bone of vertebral body was correlate with osteophyte, and the prevalence rates of osteophytes is correlate with the rate of the weight of hip bone. The results suggested that the formation of osteophyte are correlate with biomechanical response such as stress force.

Key Words : osteophyte; cortical bone; trabacular bone