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Author(s)	加藤, 剛士
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学位論文内容の要約

学位論文題目

成長期におけるソフトフード摂取が
ラット顎関節に与える影響

博士の専攻分野名称　博士（歯学）　氏 名　加藤　剛士

Title: Effects of soft diet on the temporomandibular joint of growing rats

Authors: Tsuyoshi Kato, Shigeru Takahashi, Takanori Domon

Summary

Objective: Experimental studies have examined the unfavorable effect on masticatory muscles and craniofacial bone induced by the soft modern diet. The aim of the present study was to clarify the effects of soft diet on the temporomandibular joint (TMJ) in growing rats. ***Materials and Methods:*** Twenty-four male Wistar rats were weaned at 21 days and divided into control and experimental groups. Control rats were fed a solid diet and experimental rats were fed a liquid diet for periods from 1 to 8 weeks. After injection with 5-bromo-2'-deoxyuridine (BrdU), the animals were perfused and the heads were removed. Serial coronal sections of the TMJ were stained with hematoxylin and eosin or underwent BrdU- immunohistochemistry. Three dimensions and the thicknesses of cartilage layers of the TMJ were measured, and cell proliferation in the TMJ was examined. ***Results:*** After 4 weeks, the height and width of the mandibular fossa and the width and length of the mandibular condyle were smaller in the experimental groups than in the control groups. The cartilage layer in these areas was also thinner at 4 weeks. BrdU levels in the intermediate zone of the mandibular fossa (at 4 weeks) and the mandibular condyle (at 1 and 4 weeks) were lower in the experimental groups than in the controls. ***Conclusion:*** These findings suggest that growth of the mandibular fossa and mandibular condyle of rats was inhibited by the low proliferative activity of the intermediate zone cells induced by liquid feeding. However, liquid feeding had no effects on the articular disk.