سامية محمد مصطفى

شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

سامية محمد مصطفى

شبكة المعلومات الجامعية

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التوثيق الالكتروني والميكروفيلم

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سامية محمد مصطفى

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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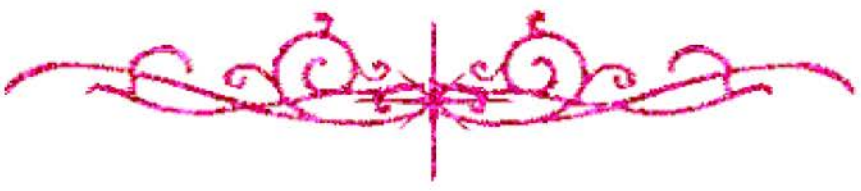

سامية محمد مصطفى

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بالرسالة صفحات لم ترد بالأصل

THE EFFECT OF DIETARY CONSISTENCY ON THE GROWTH OF MANDIBULAR CONDYLE IN RATS

Thesis
Submitted in the Partial Fulfillment of the Requirement for the Master Degree in Anatomy

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بسم الله الرحمن الرحيم

﴿قالوا سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم﴾

صدق الله العظيم

"سورة البقرة آية ٣٢"

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INTRODUCTION AND AIM OF THE WORK

INTRODUCTION

In 1962, Sicher reported that the orientation and growth patterns in the condylar cartilage are important determinants of co-ordinated craniofacial growth.

Simon (1977) concluded that the condylar cartilage is mainly a growth cartilage, but this is not true for the articular cartilage of long bones except at the very beginning of their growth. This assumption is based on the suggestion given by *Durkin et al. (1973)* that these two cartilages represent a two different developmental stages.

Whetten and Johnston (1985) and Watanabe (1990) had reported the significance of mastication on craniofacial growth. Compressive forces have an effect on proliferation and chondrogenic differentiation of progenitor cells in mandibular condylar cartilage.

Tuominen et al. (1994) mentioned that the change in the amount of chewing force alters the growth of the condylar process.

Sasaguri et al. (1998) reported that mechanical forces have an effect on bone formation, maintenance and remodeling. And

there is an evidence that the development of the mandibular condyle in the rats is influenced by the consistency of the diet.

Aim of the work:

The purpose of this study is to evaluate the effect of mechanical forces on the growth of mandibular condyle in albino rats. This is achieved by changing the consistency of the diet and observing its effect on the condylar growth.

REVIEW OF LITERATURE

ANATOMY OF THE MANDIBLE

The mandible is the only movable skull bone and it is the lowest bone in the face. It has a horizontally curved body and two broad rami ascending posteriorly.

The mandibular body has an external and internal surfaces separated by an upper and lower borders. The external surface shows a faint median ridge indicating fusion of the two halves of the foetal bone (symphysis menti). Inferiorly, this ridge divides to enclose a triangular mental protuberance, its base is centrally depressed but raised on each side as mental tubercle. Below the interval between the premolar teeth or the second premolar lies the mental foramen. The internal surface is divided by an oblique mylohyoid line extending from behind the third molar tooth to the symphysis menti. Below this line lies the slightly concave submandibular fossa, while the area above it widens anteriorly into a triangular sublingual fossa. The posterior symphyseal aspect has a small elevation often divides into upper and lower part the mental spines (genial tubercles). The mylohyoid groove extends downwards and forwards from the ramus below the mylohyoid line. The lower border of the body extends posterolaterally from the symphysis into the ramus, showing a rough digastric fossa near the median plane on each side. The

upper border of the body contains the sockets for roots of teeth varying in size and depth ***(Williams et al., 1995).***

The mandibular ramus is quadrilateral with two surfaces, four borders and two processes. The flat lateral surface of the mandibular ramus has oblique ridges in its lower part. The medial surface of the ramus presents a little above the center an irregular mandibular foramen, leading into the mandibular canal. The canal is curved downwards and forwards into the body to its mental foramen. The foramen is overlapped anteromedially by a thin triangular lingula. The inferior border of the ramus continues with the mandibular base and meets the posterior border at the angle. The thin upper border of the ramus bounds the mandibular notch, which is bounded infront by the triangular flat coronoid process, and behind by a strong condylar process. In the rat; the mandibular ramus has three processes: dorsal coronoid process, middle condyloid process and ventral angular process. The angular process is strong, hook-shaped, and bears a distinct crest laterally along its ventral edge ***(Warren and Dominique, 1997).*** The posterior border of the ramus is thick, rounded and extends from the condylar process down to the angle of the mandible. The anterior border of the ramus is thin above, continuous with that of the coronoid process and is thicker below, continuous with the oblique line on the body of the mandible. The condylar process