Diagnostic Accuracy of Cone Beam Computed Tomography in Detection of Arthritic Changes of Rat's Temporomandibular joint Condyle in Correlation with Histological Findings

Thesis

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Presented by

SAHAR MOHAMED SAMIR MORSY

B.D.S, Ain shams University (2007)

Supervised by

Dr.Mona Abou-el Fotouh

Assistant Professor of Oral Radiology and Diagnostic Sciences
Faculty of Dentistry
Ain Shams University

Dr. Walaa Mohamed Hamed

Lecturer of Oral Radiology and Diagnostic Sciences
Faculty of Dentistry
Ain Shams University

Faculty of Dentistry
Ain Shams University
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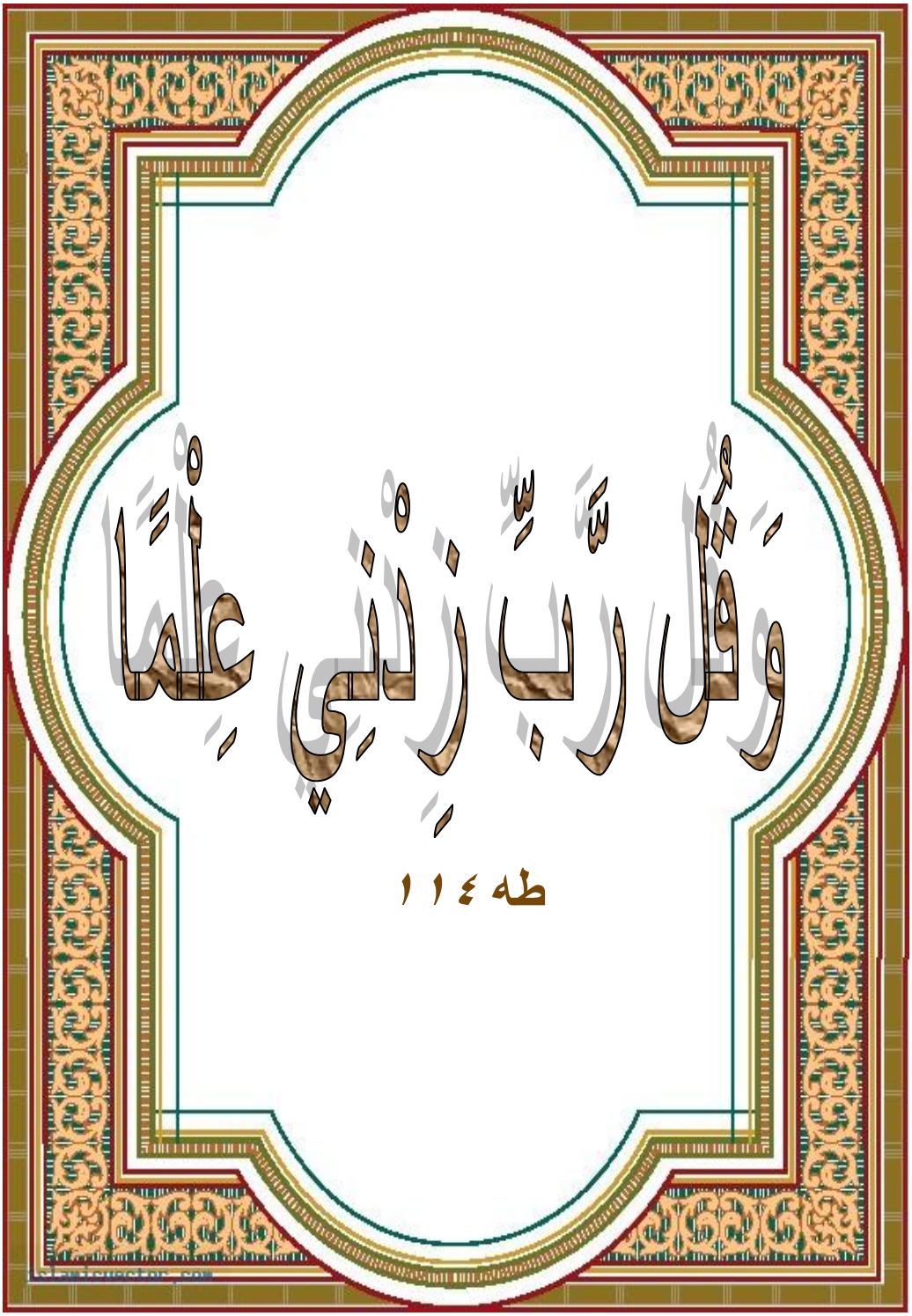
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABRREVIATIONS

Abbrev.	Full Term
2D	Two dimensional
3D	Three dimensional
ACFT	Axially Corrected Frontal Tomography
ACST	Axially Corrected Sagittal Tomography
AIA	Adjuvant induced arthritis
a-Se	Amorphous Selenium
CBCT	Cone Beam Computed Tomography
CCD	Charged Couple Device
CFA	Complete Freund's Adjuvant
CsI	Cesium Iodide
CT	Computed Tomography
DICOM	Digital imaging and Communication in Medicine
EDTA	Ethylene Diamine Tetra-acetic acid
EEGE	Exponential edge gradient effect
FDK	Feldkamp Algorithm

FOV	Field Of View
FPD	Flat Panel Detector
H&E	Haematoxylin and Eosin
HCT	Helical CT
HRUS	High Resolution Ultrasound
HU	Hounsfield unit
IID	Image Intensifier Detector
JIA	Juvenile idiopathic arthritis
MDCT	Multi Detector CT
MIP	Maximum Intensity Projection
MPR	Multiplanar Reformatted
MRI	Magnetic Resonance Imaging
NPV	Negative predictive value
OA	Osteoarthritis
OBS	Observer
PPV	Positive Predictive value
TFT	Thin Film Transistor
TMDs	Temporomandibular Disorders
TMJ	Temporomandibular Joint
VV	Voxel Value

INTRODUCTION AND REVIEW OF LITERATURE

Temporomandibular joint (TMJ) is one of the most complex joints in the human body. Its primary function is to facilitate mandibular movements, thus it plays a great role in mastication and speech. Joint movement is controlled by strong muscles and ligaments which guide its complex movements ***(Ingawalé and Goswami, 2009).***

TMJ is a synovial joint formed by the mandibular condyle fitting into the glenoid fossa of the temporal bone. Condyle is the mobile portion during mandibular movements while the fossa remains stationary. Articular disc separates these two bones from direct contact and aids in the distribution of forces. The disc is attached to the condyle medially and laterally by collateral ligaments **(*Laskin and Hylander, 2006*) Fig (1)**.

Histologically, articulating surfaces are covered by fibrocartilage with a greater capacity to resist degenerative changes and regenerate itself more than the hyaline cartilage of other synovial joints **(*Pertes and Gross, 1995 and Ingawalé and Goswami, 2009).*** Dense fibrous connective tissue disc divides the joint cavity into upper and lower components. It has a thin central area while the anterior and posterior regions are thicker ***(Toriya et al., 2006 and Shibukawa et al., 2007)*** **Fig (2).**

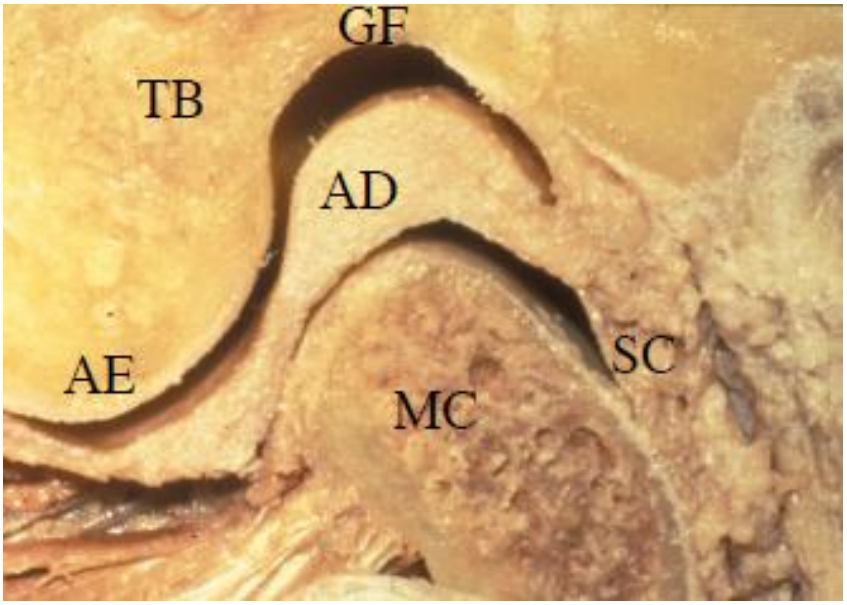

Figure (1): Autopsy specimen showing components of human's TMJ; glenoid fossa (GF), articular eminence (AE) of the temporal bone (TB), mandibular condyle (MC), articular disc (AD) and synovial capsule (SC) (***Wadhwa and Kapila, 2008).***

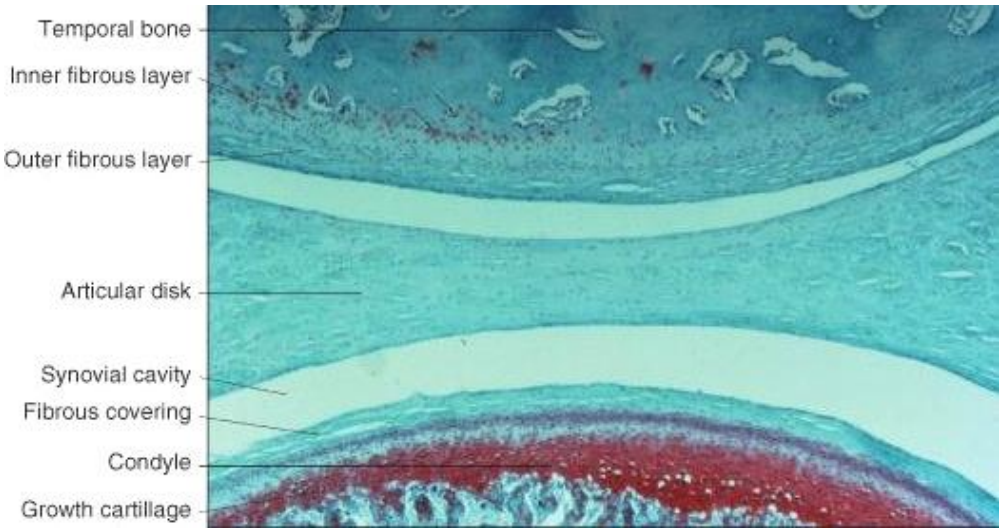

Figure (2): Showing normal histological section of human's TMJ ***(Cate's and Nanci, 2008).***