

# **Assessment of the Effect of Gap Arthroplasty on Salivary Immunoglobulin A and Serum Interleukin – 6 in patients of Temporomandibular Joint Bony Ankylosis**

Thesis

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By

**Hazim Mohamed Almustafa Salih**

B.D.S

Faculty of oral and dental Medicine  
Khartoum Collage of Medical Sciences (K.C.M.S)

**Cairo University**

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# SUPERVISORS

## **Dr. Mohammad El – Sayed Dehis**

Professor of Oral and Maxillofacial Surgery

Faculty of Oral and Dental Medicine

Cairo University

## **Dr. Abeer Mohammed Kamal**

Lecturer of Oral and Maxillofacial Surgery

Faculty of Oral and Dental Medicine

Misr University for Science and Technology

## **Dr. Engy Mohammed Alkhateeb**

Lecturer of Clinical Pathology

Faculty of Medicine

Kasr Aleiny

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

DEDICATION

*To My Parents*

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# INTRODUCTION

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## INTRODUCTION

Temporomandibular Joint ankylosis is a serious disabling condition affecting the facial skeleton at early ages of childhood. It complicates the life style of the affected subjects. Gap arthroplasty is a standard and simple procedure to release the ankylotic joint. The majority of the previous studies have directed the attention towards improving approaching techniques, sociodemography and classification of the condition <sup>(1, 2)</sup>. Review of literature has failed to link the effect of the surgery on immunocompetence and nutrition status of the affected subjects.

Salivary immunoglobulin A and serum interleukin – 6 were the immunological parameters utilized in the present study to assess the effect of gap arthroplasty on the immune system. Salivary immunoglobulin A is an important antibody involved in local mucosal immunity, it prevents pathogens from sticking to cell, therefore preventing local infection. It is easy to be obtained un-invasively, quantified and measured to assess stress response and effects of surgical procedures on the immune system. Salivary IgA secretion rate is sensitive to psychological variables. <sup>(3-5)</sup> Interleukin-6 is an important cytokine that is released by various cell types and plays an important role in immune responses. Moreover, IL-6 mediates acute phase protein response and is an indicator to evaluate magnitude of surgical tissue damage and associated with incidence of postoperative complications <sup>(6, 7)</sup>.

Since Nutritional status plays a key role in the function of the immune system as the adipose tissue is an endocrine organ where adipocytes are involved in complement activation and cytokine production; the current study utilized Body Mass Index (BMI), serum Albumin and serum transferrin to assess the nutritional status of patients with temporomandibular joint bony ankylosis <sup>(13, 14)</sup>.

The obtained data will contribute in the way of management of such patients. It will elucidate the significance of immunocompetence associated with temporomandibular joint surgery.



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# REVIEW OF LITERATURE

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## **REVIEW OF LITERATURE**

### **Temporomandibular Joint Ankylosis**

Temporomandibular Joint ankylosis (TMJA) is one of the commonest pathologies afflicting the facial skeleton; it is a serious disabling condition and one of the most difficult and complex problems managed by oral and maxillofacial surgeons. It usually develops before the age of 10, yet, it is the most over-looked and under managed problem in children. It starts insidiously after chin trauma, and in an overpopulated country, the child with trismus gets noticed only when bite off and mastication of solid food becomes difficult. The Temporomandibular Joint (TMJ) forms the very cornerstone of craniofacial integrity and hence ankylosis in growing children poses a severe psychological burden on their minds. In adults (TMJA) falls in the age group from twenty to thirty years and it is slightly commoner in males than females in a ratio of 1.4:1, however, it has been reported by Nida and associates that male to female ratio is 4:1.93 respectively.<sup>(15-19)</sup>

Temporomandibular joint ankylosis is most commonly associated with trauma (13–100%), local or systemic infection (0–53%), or systemic disease such as ankylosing spondylitis, rheumatoid arthritis, or psoriasis. Rarely it is congenital. In the case of trauma, it is hypothesized that intra-articular haematoma, scarring and excessive bone formation give rise to hypomobility. The majority of infections which give rise to ankylosis are secondary resulting from the spread of mastoiditis and otitis media. Tuberculosis, gonorrhoea and scarlet fever are systemic diseases which may lead to (TMJA) by the haematogenous route.<sup>(20-25)</sup>

The incidence of patients susceptible to develop (TMJA) is high in some parts of the world. The most striking finding is the perceived incidence of