THE TONGUE AS A CLINICAL INDICATOR FOR DERMATOLOGICAL AND NON DERMATOLOGICAL DISEASES

Essay submitted for fulfillment of M.Sc. degree in Dermatology and Andrology

BY

Amira Ebrahim Othman Ebrahim

(MB. BCH)

Faculty of Medicine – Cairo University

Supervised by

DR. Amr Abdel Hakim Rateb

Professor of Dermatology – Faculty of Medicine

Cairo University

DR. Tahra Mohamed Leheta

Assistant Professor of Dermatology – Faculty of Medicine

Cairo University

DR.Mohamed Hussein Medhat El Komy

Assistant Professor of Dermatology – Faculty of Medicine

Cairo University

Faculty of Medicine

Cairo University - 2010

قال الله عز و جل

بسم الله الرحمن الرحيم

﴿ قَالُوا سُبْحَانَكَ لا عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ﴾

صدق الله العظيم

سورة البقرة الأية ٣٢

Acknowledgements

Thanks to Allah for giving me the power and strength to carry out this work.

Words stand short where they come to express my gratefulness to my supervisors.

I would like to express my thanks and deepest gratitude to Prof Dr.Amr Abdel Hakim Rateb, Professor of Dermatology, Faculty of Medicine, Cairo University for his remarkable effort, help and his continuous guidance which were the major factor behind the completion of this work.

My deep gratitude goes for Assistant Prof Dr. Tahra Mohamed Leheta, Assistant Professor of Dermatology, Faculty of Medicine, Cairo University, for her kind help and great support throughout this work.

My deep gratitude goes for Assistant Prof Dr.Mohamed Hussein Medhat El – Komy Assistant Professor of Dermatology, Faculty of Medicine, Cairo University, for his valuable advice.

I would like to express my great thanks to all members of my family especially my father ,my mother ,my sister, my husband and my lovely kids for providing love and care till I finished this work and forever.

Dedication

This work is dedicated to my great father, my mother and rest of my family who stood beside me through my entire life and gave me all the support.

Dear parents nothing deserves to be back for your great deed.

Thank you for every thing.

Abstract

The tongue is a fleshy highly mobile mass of muscular tissue attached to the floor of the mouth and covered with mucous membrane. Some lesions that appear on the tongue in the form of vesicles, spots, discoloration, erosions, fissures and others may indicate presence of dermatological diseases such as herpes simplex infection, lichen planus, psoriasis, dermatomyositis and others or may hide behind them, some of systemic diseases such as inflammatory bowel diseases, anemia, diabetes mellitus, allergy. So, careful examination of the tongue and also the entire buccal cavity with respect to the possible differential diagnoses of the existent lesion will help in accurate diagnosis of the condition giving rise to early and successful treatment helped by other methods of diagnosis such as histological examination, direct & indirect immunofluoresence and tumor markers.

Key words:

Tongue , erosions , ulcers , vesicles , swelling , redness , papillar hypertrophy , glossitis , macroglossia , fissuring.

List of content

List of figures

List of tables

List of abbreviations

AN	Acanthosis nigricans
BMG	Benign migratory glossitis
BMT	Bone marrow transplantation
BP	Bullous pemphigoid
cGVHD	Chronic graft versus host disease
CMV	Cytomegalovirus
DH	Dermatitis herpetiformis
DLE	Discoid lupus erythematosus
DM	Dermatomyositis or Diabetes mellitus
DNA	Deoxyribonucleic acid
EB	Epidermolysis bullosa
EBA	Epidermolysis bullosa acquisita
EBV	Epstein – Barr virus
EM	Erythema multiforme
FDE	Fixed drug eruption
FT	Fissured tongue
GCT	Granular cell tumor
GVHD	Graft versus host disease
HIV	Human immunodeficiency virus
HL	Hairy leukoplakia
HPV	Human papilloma virus
HSV	Herpes simplex virus
IgA	Immunoglobulin A
KCl	Potassium chloride
LABD	Linear Immunoglobulin A bullous disease
MAN	Malignancy – associated acanthosis nigricans

MMP	Mucous membrane pemphigoid
NaCl	Sodium chloride
OFM	Oral focal mucinosis
RMS	Rhabdomyosarcoma
SAM	Stomatitis areata migrans
SJS	Stevens – Johnson syndrome
SLE	Systemic lupus erythematosus
SS	Sjögren syndrome
TAS2RS	Taste receptors type 2
TEN	Toxic epidermal necrolysis
VX	Verruciform xanthoma
VZV	Varicella – zoster virus

Introduction

The tongue is a fleshy highly mobile organ consisting mainly of muscles (extrinsic & intrinsic) that allow it to move in nearly every direction. It is highly innervated and supplied by blood vessels.

Its main functions are taste sensation, helping in swallowing and helping in speech.

Many microbial infections may affect the tongue together with the skin including herpes simplex, varicella, herpes zoster, cytomegalovirus, tuberculosis and syphilis.

The tongue is involved in inflammatory bowel diseases, celiac disease, chronic liver diseases and some nutritional deficiency diseases leading to glossitis , glossodynia , glazed tongue and other manifesrations.

Some blood and vascular disorders cause different lesions on the tongue. These disorders include anemia, leukemia, multiple myeloma and others.

Multiple tumors may affect the tongue itself as primary tumors e.g. squamous cell carcinoma of the tongue, rhabdomyoma , hemangioma , fibroma …..etc or the tongue may be affected by metastases.

Some connective tissue disorders may affect the tongue as lupus erythematosus, Sjögren syndrome, dermatomyositis and scleroderma leading to different lesions.

Some lesions of the tongue may hide a systemic endocrinal or metabolic disease especially diabetes mellitus that affects the tongue morphologically and functionally leading to decreased salivary production , taste alterations , burning mouth syndrome , greater tendency to buccal infections and coated tongue. Other endocrinal disorders that affect the tongue include thyroid disorders, acromegally and hypoadrenocorticism.

The tongue is one of the organs that show manifestations of hypersensitivity reactions in several forms including angioedema, erythema multiforme, fixed drug eruption , graft versus host disease and others.

The tongue being a part of the oral mucous membrane is affected by many vesiculobullous disorders leading to erosions, ulcers or scarring in some cases.

Other miscellaneous disorders may affect the tongue directly or indirectly leading to various changes in shape & function.

Aim of the work

The aim of this essay is to revise what may affect the tongue, and the diseases that may be indicated by different tongue lesions whether dermatological or systemic.

Chapter 1

Anatomy and Physiology of the tongue

Definition of the tongue :

A fleshy highly mobile mass of muscular tissue attached to the floor of the mouth and covered with mucous membrane .It is the chief organ of taste and aids in mastication, swallowing and speech **(Vidiri et al., 2007)**. Its average length from the oropharynx to the tip is 10 cm **(Suzuki, 2007)**.

Muscles of the tongue :

The tongue is able to move in nearly every direction, expand, compress and display a fine degree of articulation.
Such muscular control allows us to manipulate our food and speech.
The organ's ability to transform into a variety of shapes comes from its composition of skeletal muscles interspersed with fat.

The tongue and its muscles are bilaterally symmetrical:
a **median septum** divides the organ into two halves.
The tongue is made up of two types of muscles: extrinsic and intrinsic.

Extrinsic muscles originate from elsewhere in the body and attach to the tongue. They connect with surrounding bones and help the organ move up and down, from side to side and in and out.

The tongue's extrinsic muscles all end in " glossus " which , unsurprisingly , means " tongue ". They include genioglossus, styloglossus, palatoglossus and hyoglossus muscles.
The **genioglossus** originates from the mental spine of the mandible and is inserted into the hyoid bone and the dorsum of the tongue. It depresses the tongue and thrusts it out.
The **styloglossus** originates from the anterior and lateral surfaces of the styloid process near its apex and from the stylomandibular ligament and is inserted into the side and the undersurface of the tongue. It raises and withdraws the tongue.
The **palatoglossus** originates from the undersurface of soft palate and is inserted into the side of the tongue. It raises its back.