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**Immunohistochemical Expression of
Sonic hedgehog and Snail in Oral
Epithelial Dysplasia and Squamous Cell
Carcinoma**

Thesis submitted to Faculty of Dentistry

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In partial fulfillment of the requirements for Master's

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By

Nouran Ali Mohamed Sahl

Demonstrator in Oral Pathology Department

Faculty of Dentistry

Ain Shams University

B.D.S

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Faculty of Dentistry

Ain Shams University

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Supervisors

Dr. Houry Moustafa Baghdadi

Professor of Oral Pathology
Head of Oral Pathology Department
Faculty of Dentistry
Ain Shams University

Dr. Rehab Fouad Fathi

Lecturer of Oral Pathology
Faculty of Dentistry
Ain Shams University

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

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To the Soul of My Father

My Great Mother

My Beloved Husband

My lovely Daughter

And My Great Father in law and Mother in law

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Table of Contents

List of Abbreviations.....i

List of Figures.....iii

List of Tables.....viii

Introduction.....1

Review of Literature.....3

I. Oral Epithelial Dysplasia.....3

 • Risk factors.....3

 • Cytological and architectural changes in OED.....3

 • Different grading systems of OED.....4

II. Oral Squamous Cell Carcinoma.....5

 • Risk factors of OSCC.....6

 • Histopathological features.....7

 • Grading of OSCC.....7

III. Hedgehog signaling pathway.....8

 • Activation of the Hh pathway.....8

 • Role of Hh during embryogenesis.....10

 • Role of Hh in carcinogenesis 12

IV. Sonic hedgehog.....14

V. Epithelial Mesenchymal Transition 16

 Introduction..... 16

 EMT mechanism of action..... 18

 Role of EMT in tumorigenesis 19

VI. Snail..... 21

VII. The link between Shh and EMT processes.....23

Aim of the Study.....24

Material and Methods.....25

 I. Case Selection.....25

 II. Histopathological Examination.....25

 III. Immunohistochemical Staining.....30

 A. Reagents 30

 B. Immunostaining Procedures 31

 IV. Immunohistochemical Assessment.....35

 V. Statistical Analysis.....36

Results.....38

 I. Immunohistochemical Results.....38

 II. statistical Results.....56

Discussion.....67

Conclusion.....76

Recommendations.....77

Summary.....78

References.....81

Arabic Summary.....98

List of Abbreviations

ANOVA: Analysis of Variants

CSCs: Cancer Stem Cells

DAB: Diaminobenzine

Dhh: Desert hedgehog

DNA: Deoxyribonucleic acid

DPX: Dibutylphthalate polystyrene xylene

EGF: Epidermal Growth Factor

EMC: Extracellular Matrix Components

EMT: Epithelial Mesenchymal Transition

FGF: Fibroblast Growth Factor

FU: Fused

GLI: Glioma-associated-oncogene

H&E: Hematoxylin and eosin

Hh: Hedgehog signaling pathway

HNSCC: Head and Neck Squamous Cell Carcinoma

HPV: Human papillomavirus

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IHC: Immunohistochemistry

Ihh: Indian hedgehog

MET: Mesenchymal Epithelial Transition

NES: Nuclear Export System

OED: Oral Epithelial Dysplasia

OSCC: Oral Squamous Cell Carcinoma

PBS: Phosphate Buffered Saline

PTCH: Patched gene

SCC: Squamous Cell Carcinoma

SD: Standard deviation

Shh: Sonic hedgehog

SMO: Smoothened gene

SPSS: Statistical Package for Social Science

SRD: Serine-rich domain

SUFU: Suppressor of fused

TGF- β : Transforming Growth Factor-Beta

WB: Western blot

WHO: World Health Organization

List of Figures

Fig. 1: The hedgehog activation and inhibition pathway.....9

Fig. 2: A schematic representation of dual lipid modification of Shh protein..... 15

Fig. 3 : Structure of Snail..... 22

Fig. 4: A photomicrograph of mild epithelial dysplasia (H&E, original magnification 20X). 26

Fig. 5: A photomicrograph of moderate epithelial dysplasia (H&E, original magnification 20X).... . 26

Fig. 6: A photomicrograph of severe epithelial (H&E, original magnification 20X) 27

Fig. 7: A photomicrograph of well differentiated squamous cell carcinoma (H&E, original magnification 20X)..... 27

Fig. 8: A photomicrograph of moderately differentiated squamous cell carcinoma (H&E, original magnification 20X)..... 28

Fig. 9: A photomicrograph of poorly differentiated squamous cell carcinoma (H&E, original magnification 20X)..... 28

Fig. 10: A plate showing steps of the immunohistochemical assessment37

Fig. 11: A photomicrograph of mild epithelial dysplasia showing positive Shh immunostaining (Shh, original magnification 20X).....	44
Fig. 12: A photomicrograph of mild epithelial dysplasia showing positive nuclear and cytoplasmic Shh immunoreaction (Shh, original magnification 40X).	44
Fig. 13: A photomicrograph of moderate epithelial dysplasia showing positive Shh immunostaining (Shh, original magnification 20X).....	45
Fig. 14: A photomicrograph of moderate epithelial dysplasia showing positive nuclear Shh immunostaining (Shh, original magnification 40X).....	45
Fig. 15: A photomicrograph of severe epithelial dysplasia showing positive Shh immunostaining (Shh, original magnification 20X).....	46
Fig. 16: A photomicrograph of severe epithelial dysplasia showing positive nuclear and cytoplasmic Shh immunostaining (Shh, original magnification 40X).....	46
Fig. 17: A photomicrograph of well differentiated squamous cell carcinoma showing positive Shh immunostaining (Shh, original magnification 20X).....	47
Fig. 18: A photomicrograph of well differentiated squamous cell carcinoma showing positive nuclear, cytoplasmic and membranous Shh immunostaining (Shh, original magnification 40X)	47

Fig. 19: A photomicrograph of moderately differentiated squamous cell carcinoma showing positive Shh immunostaining (Shh, original magnification 20X)	48
Fig. 20: A photomicrograph of moderately differentiated squamous cell carcinoma showing positive nuclear, cytoplasmic and membranous Shh immunostaining (Shh, original magnification 40X).	48
Fig. 21: A photomicrograph of poorly differentiated squamous cell carcinoma with positive Shh immunostaining (Shh, original magnification 20X).....	49
Fig. 22: A photomicrograph of poorly differentiated squamous cell carcinoma showing positive cytoplasmic and membranous Shh immunostaining (Shh, Original magnification 40X).....	49
Fig. 23: A photomicrograph of mild epithelial dysplasia showing positive Snail immunoreactivity (Snail, original magnification 20X).....	50
Fig. 24: A photomicrograph of mild epithelial dysplasia showing positive cytoplasmic Snail immunostaining (Snail,original magnification 40X)..	50
Fig. 25: A photomicrograph of moderate epithelial dysplasia showing positive Snail immunostaining (Snail, original magnification 20X).....	51
Fig. 26: A photomicrograph of moderate epithelial dysplasia showing positive nuclear Snail immunostaining (Snail, original magnification 40X)	51

Fig. 27: A photomicrograph of severe epithelial dysplasia showing positive Snail immunostaining stain (Snail, original magnification 20X).52

Fig. 28: A photomicrograph of severe epithelial dysplasia photomicrograph showing positive nuclear and cytoplasmic Snail immunostaining (Snail, original magnification 40X) 52

Fig. 29: A photomicrograph of well differentiated squamous cell carcinoma showing positive faint nuclear and cytoplasmic Snail immunostaining (Snail, original magnification 40X). 53

Fig. 30: A photomicrograph of well differentiated squamous cell carcinoma with positive cytoplasmic Snail immunostaining (Snail, original magnification 40X) 53

Fig. 31: A photomicrograph of moderately differentiated squamous cell carcinoma showing positive nuclear and cytoplasmic Snail immunostaining (Snail, original magnification 40X) 54

Fig. 32: A photomicrograph of moderately differentiated squamous cell carcinoma showing positive nuclear and cytoplasmic Snail immunostaining (Snail, original magnification 40X)..... 54

Fig. 33: A photomicrograph of moderately differentiated squamous cell carcinoma showing positive nuclear and cytoplasmic Snail immunostaining (Snail, original magnification 40X)..... 55

Fig. 34: A photomicrograph of poorly differentiated squamous cell carcinoma showing positive nuclear and cytoplasmic Snail immunostaining (Snail, original magnification 40X).....55

Fig. 35: Bar chart representing mean and standard deviation values for Shh expression in different grades of dysplasia.....58

Fig. 36: Bar chart representing mean and standard deviation values for Shh expression in different grades of SCC.....60

Fig. 37: Box plot representing median and range values for Snail expression in different grades of dysplasia.....62

Fig. 38: Box plot representing median and range values for Snail expression in different grades of SCC.....64

Fig. 39: Scatter diagram representing direct correlation between Shh and Snail expressions.....66

List of Tables

Table 1: The number of collected cases in each group.....	25
Table 2: Frequency distribution and MAF of Shh immunopositivity in different grades of OED.....	38
Table 3: Frequency distribution and MAF of Shh immunopositivity in different grades of OSCC.....	40
Table 4: Frequency distribution and MAF of Snail immunopositivity in different grades of OED.....	41
Table 5: Frequency distribution and MAF of Snail immunopositivity in different grades of OSCC	43
Table 6: Descriptive statistics and results of one-way ANOVA test for comparison between Shh expression in different grades of dysplasia.	57
Table 7: Descriptive statistics and results of one-way ANOVA test for comparison between Shh expression in different grades of SCC	59
Table 8: Descriptive statistics and results of Kruskal-Wallis test for comparison between Snail expression in different grades of dysplasia.....	60
Table 9: Descriptive statistics and results of Kruskal-Wallis test for comparison between Snail expression in different grades of SCC	63
Table 10: Results of Spearman's correlation coefficient for the correlation between Shh and Snail expressions.....	65
