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Prevalence of Gingival Stippling in Teenagers

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Abstract: *The texture of the gingival surface may be similar to orange peel and is referred to gingival stippling. It is caused by intersection of epithelial rete ridges that causes the depression and the interspersing of connective tissue papillae between these intersections giving rise to the small bumps.*
Objective:*The aim of the study was to determine the prevalence of gingival stippling in teenagers.*
Results:*Among hundred and sixty-eight teenagers, 63 was male and 105 female.* 86.9% *of the teenagers showed gingival stippling;*88.9% *of the male and* 85.7% *of the female. The percentages of presence of gingival stippling in upper and lower jaws of male and female were 88.9%, 44.4% and 85.7%, 59.9% respectively.*
Conclusion:*Female showed higher percentage of gingival stippling than males, and stippling was higher in upper jaw than lower jaw.*
Key words:*Gingiva, Gingival stippling, Teenagers,*

I. Introduction

Gingival stippling is a characteristic of the healthy attached gingiva and its diminution or loss has been considered as a sign of gingival disease. The clinician however, must take in consideration that its pattern and extent varies in different mouth areas, among persons and with age. Gingiva is a fibrous investing tissue, covered by keratinized epithelium, that immediately surrounds a tooth and contiguous with its periodontal ligaments and with mucosal tissues of the mouth (1). According to Glossary of Periodontal Terms 2001; attached gingiva is the portion of the gingiva that is firm, dense, stippled, and tightly bound to the underlying periosteum, tooth and bone, while gingival stippling is the pitted, orange-peel appearance, frequently seen in attached gingiva (2). The stippling, however, is only present about 40%of adults 68.2% of children (3), so the texture of gingiva can be highly stippled or smooth, or have intermediate texture between these two extremes (4). The aim of the study was to determine the prevalence of gingival stippling in teenagers.

II. Materials And Methods

This cross-sectional study was conducted from April to June 2015 on one hundred and sixty eight teenagers. Subjects that involved in this study were from different intermediate schools in the Sulaimani city.Any participant with systemic disease and gingivitis or periodontitis were excluded from the study. The gingival stippling was classified by presence or absence of stippling**Fig. 1**and **Fig. 2**. If gingival stippling was present then sub-classified into only papillaryand (papillary and mid-gingival) for both sexes**Fig.3** and **Fig. 4**.Ethical approval has been obtained from the University Research Ethics Committee, School of Dentistry – University of Sulaimanithat is in accordance with Helsinki Declaration.

Mouth retractors were used for retracting lips of the attendees in order to increase the visibility of the gingiva. Gingiva of both jaws were cleaned and dried by sterile gauze for each participant from soft debris. The gingiva was examined under ample light by two examiners. Photos of the mouth of participants were taken for further gingival stippling analysis by using Canon EOS Rebel T6s Digital SLR camera.

III. Results

Among hundred and sixty-eight teenagers, 63 was male and 105 female. 86.9% of the teenagers showed gingival stippling;88.9% of the male and 85.7% of the female. The percentages of presence of gingival stippling in upper and lower jaws of male and female were 88.9%, 44.4% and 85.7%, 59.9% respectively.

Moreover, the percentages of absence of gingival stippling in upper and lower jaws of male and female were 11.1%, 55.5% and 14.2%, 40% respectively. Papillary gingival stippling percentage in upper jaws (52.3%) of the male was higher than lower jaw (44.4%), in contrary females showed higher percentage of papillary stippling in the lower jaw (52.3%) than upper jaw (44.7). for mid-gingival stippling, male had (36.5%:0%) and female (41%:7.65) for upper and lower jaws respectively as shown in Table 1.

The statistical analysis using Chi-square test showed non-significant difference (p>0.05) of the prevalence of gingival stippling between male and female teenagers (Table 1). The result was also showed non-significant association of gingival stippling between upper and lower jaws as the P value was 0.23501 (Table 2).

IV. Discussion

The texture of the gingival surface may be similar to orange peel and is referred to gingival stippling (5). It is caused by intersection of epithelial rete-ridges that causes the depression and the interspersing of connective tissue papillae between these intersections giving rise to the small bumps(6).

The current study has found that 86.9% of teenagers had gingival stippling. This result is higher than thePhark et al(7) study that found 68.2% of gingival stippling in children. Male also showed higher percentage of stippling than female (88.9% maleand 85.7% female);Phark et al (67.2% male and 69% female) found opposing result. Another study(1) found 56.4% of gingival stippling in children; this result is also opposing to the current study. It also found that the upper jaw had higher percentage of stippling than lower jaw by (47.2% versus 41.7%) similar to our study that shown similar higher percentages of gingival stippling in upper jaw than lower 88.9% versus 44.4% and 85.7% versus 59.9% for male and female respectively, but the percentages were quite higher than the later study. Another study (8) found higher percentage (74.79%) of gingival stippling in children. The current study with the latter two studies found no any significant associations between sex and gingival stippling (P>0.05).

Gingival stippling is a normal characteristic of the healthy keratinized gingiva and can be found in human gingiva as early as age one year. Its presence and absence does indicate neither gingivitis nor periodontitis, but stippling is regarded as a feature of normal healthy gingiva. Although gingival stippling is considered as a characteristic of attached gingiva not free gingiva (5), in some cases, it seems free gingiva has stippling too **Fig. 4**. Presence of gingival inflammation in attached gingiva particularly those have participated in study should provide them meticulous oral hygiene instruction in order to be followed and reexamined again for presence and absence of gingival stippling for better and reliable survey rather than excluding them. In addition to that, presence of subclinical gingivitis and/or marginal gingivitis may affect the presence and sharpness or appearance of juxtaposed gingival stippling **Fig. 3**and **Fig. 5**. Finally, further studies must be conducted to determine the effects of proclined and retroclined teeth on gingival stippling of both papillary and mid-gingival areas.

V. Conclusion

Male showed higher percentage of gingival stippling than females, and stippling was higher in upper jaw than lower jaw.

Table 1: Percentages of gingival stippling (n: number)

Sex	**Stippling**		**No stippling**		**Total**		**Significance**
	n	%	N	%	n	%	
Male	56	88.9	7	11.1	63	37.5	P= 0.7184*
Female	90	85.7	15	14.3	105	62.5	
Total	146	86.9	22	13.1	168	100	

* Non-significant result.

Table 2: Relation of gingival stippling to upper and lower jaws

Sex	**Relation to jaws**	**Papillary**		**Papillary and mid-gingival**		**Total stippling**	**Total non-stippling**	**Significance**
		n	%	N	%			
Male	Upper	33	52.3	23	36.5	56 (88.9%)	7 (11.1%)	P=0.23501*
	lower	28	44.4	0	0	28 (44.4%)	35 (55.5%)	
Female	Upper	47	44.7	43	41	90 (85.7%)	15 (14.3%)	
	Lower	55	52.3	8	7.6	63 (59.9%)	42 (40%)	

* Non-significant result.

Figure 1: Stippling on maxillary gingiva

Figure 2: no gingival stippling on maxillary gingiva

Figure 3: papillary stippling on mandibular gingiva

Figure 4: papillary and mid-gingival stippling on mandibular gingiva

Figure 5: marginal gingival inflammation

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