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Hair line characteristics of young Kurdish males

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Abstract: *This is a descriptive cross sectional study of hair line characteristics conducted on 225 young Kurdish males aged 15-25 years old(mean=21), the purpose of this study is to define a model and characteristics of this age group's hair line in terms of shape and level of the hair line, the shape was assessed by the presence or absence of the macro irregularities (widows peak 85%, lateral mound 90%) and the mean distances between them (widows peak to lateral mound Rt=4.25 ; Lt=4.18 cm, widows peak to temporal point Rt=97.8; Lt=7.8cm), the* ***mean*** *dimensions of the mid frontal macro irregularity (the widows peak height 1.49, width=2.73 cm), the height assessed by the mean distance from the inter eye brows point to the mid frontal point (5.65 cm), and the vertical distance from the temporal point to the lateral eye brow (Rt.=3.38cm, Lt=3.39cm), these measurements resulted in a rather low hair line and the shape was irregular and a wave like in (85%) with the presence of both the widow's peak and lateral mounds, irregular with* ***W*** *or inverted* ***V*** *shape in (5%) with the presence of the lateral mounds only, and straight hair line in (10%) with the absence of both types of macro irregularities.*

Keywords: *Kurdish; hair line; macro-irregularities; micro-irregularities; Norwood-Hamilton class*

I. INTRODUCTION

Close examination of normal hairlines reveals that small, "intermittent", triangular shaped areas of higher density contribute a great deal to the appearance of irregularity. This form of irregularity is referred to as "micro-irregularity" because it is more noticeable under close examination than from a distance[1]. Parsley has called these areas of "intermittent" density "clusters" and the area between them 'gaps' [2]. If one stands back and looks at a normal the hairline from a distance the path of the anterior border is seen to be more serpentine or curvaceous than linear. This form of irregularity is referred to as "macro-irregularity" because it is more obvious when the hairline is observed more globally from a distance[1]. Martinique has used the term "snail-tracking" to describe this appearance[3]. Parsley has attributed this macro-irregularity to existence of one to three "mound" or "protrusions" along the path of the hairline. He describes one central mound (the widows peak) and up to two lateral mounds on either side of this central mound[2]. There are considerable ethnic variation of the hair lines shapes, dimensions, density and height[4,5,6], those variables should be taken into account during planning of multiple facial esthetic and reconstructive surgeries especially hair restoration surgery, hair line advancements and brow and face lift surgeries[7,8,9,10]. Patient's race influence the hair line ,black , Asian and Hispanic for example often have broader

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and falter hair line compared to whit or Caucasian[4]. Ethnic backgrounds and cultures can play a role in influencing their perception of beauty and desired surgical goals, an esthetic result that may be considered desirable in one culture may be less attractive in another, even individuals of the same ethnic group can differ in their expectations ,ethnic individuals tend to be more satisfied with cosmetic surgery if post operatively there is high degree of facial harmony as well as preservation of their ethnic facial characteristics and identity[7]. Regarding hair restoration it requires the application of universal principles A long with variations that apply to specific ethnic population[9]. Usually the patients goals in hair restoration surgery is to get back theirs juvenile or early youthful hair ,in terms of low hair line, shape and thickness, although it's sometimes considered high or unrealistic expectations ,especially for the low hair line in younger patients whom should be approached cautiously, at least three situations call for higher line (mid frontal point): (1) recessed temple; (2) limited donor hair and; (3) present or anticipated advanced baldness[4], however the shape and thickness can be Simulated to satisfactory level. We tried in this study to define a reasonable model of hair line for the Kurdish males that my enhance The result of the future hair transplantation or other facial esthetic surgeries where the shape and level of hair line is crucial to the final esthetic result and facial proportions.

II. MATERIALS AND METHODS

A descriptive cross sectional study was performed on 225 hair line of young Kurdish males volunteers from the medical staff , workers, patients family members of the in patients and outpatient departments of Sulimani Burn and Plastic Surgery Hospital, and also Medical College and Medical Institute students, over a period of 7 months (May 2015 – September 2015). A detailed history including patient's demographic data, history of chronic medical illnesses, previous surgery or scar involving the forehead, the scalp or the eye brows ,allergy to soaps, shampoos, or other cosmetics hair products and family history of baldness were taken through using an interview and questionnaire designed by the researchers. The hair lines were examined carefully and systematically for the shape whether: straight or curved, the hair type whether: straight, wavy, curly or coiled, the hair color ,the presence or absence of the central macro irregularity (The widow's peak) and the literal mounds, and Norwood-Hamilton male pattern baldness class was documented. standardized photographs were taken to whom they agreed. Those who were under 18 years the interview and examination were done in the presence of their responsible adult persons.

III. INCLUSION AND EXCLUSION CRITERIA

The inclusion criteria of this study were: Kurdish, healthy males aged 15 years to 25 years old with normal hair or Norwood-Hamilton class I & II [11,12] males pattern baldness. Exclusion criteria include; persons with previous surgeries , scars or cranial skeletal deficits whether acquired or congenital that may affect the scalp, forehead, or the eyebrows, those with chronic diseases such diabetes mellitus, connective tissue auto immune diseases, blood diseases and those with Norwood– Hamilton class III or higher male pattern baldness.

IV. MEASUREMENTS

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Using a tape measure the measurements of hair line used in the study were taken: Widow's peak height; Widow's peak width; Widow's peak — inter eye brows point; Right Widow's peak — Lateral mound; Left Widow's peak — Lateral mound; Right Widow's peak — temporal point; Left Widow's peak — temporal point; Right temporal point— lateral eye brow; Left temporal point— lateral eye brow. Statistics, graphs, and charts were done using excel spreadsheet of Microsoft office program.

V. RESULTS

The mean age of the participants was 21 years old. The hair line shapes, the prevalence of macro irregularities, the hair types, and colors, and the family history of baldness are presented in figures 2, and 3, respectively.

Figure 1. a. The white line shows the micro- irregularities, present in 100% of the cases; b. Macro-irregularities. A. Central Mound (widows peak), B. Lateral mound, C. Temporal point, present in 85%; c. Straight hair line. Absent widow's peak and lateral mound, presented in 10%; d. Absent widow's peak with prominent lateral mound, presented in 5%.

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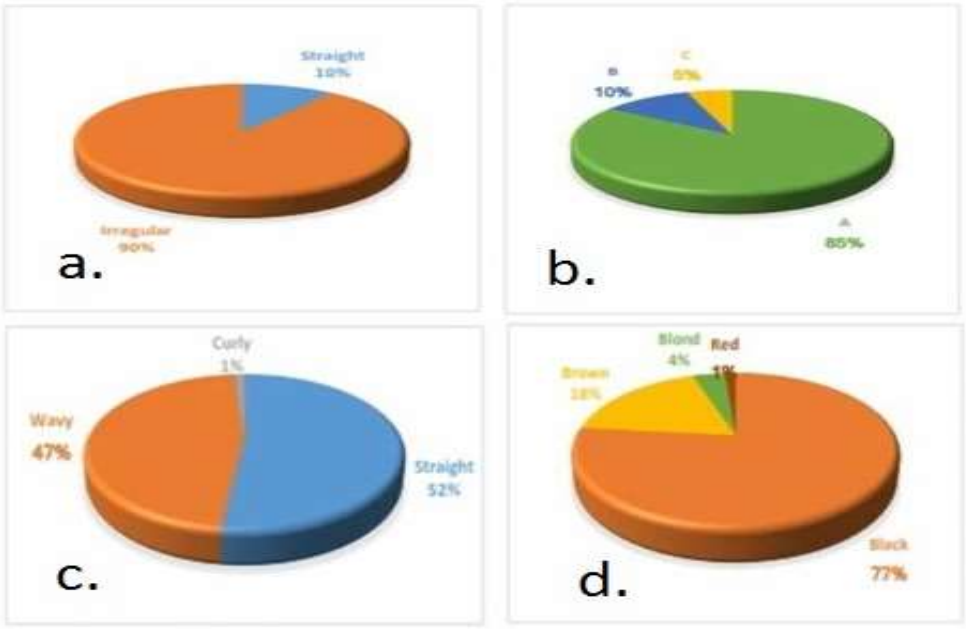

Figure 2. a. Hairs line shape; b. **A.** Both widow's peak and lateral mounds were present, **B.** Both widow's peak and lateral mounds were absent (**Straight hair line**), C. Only the widow's peak absent; c. Hair types; d. Hair colors.

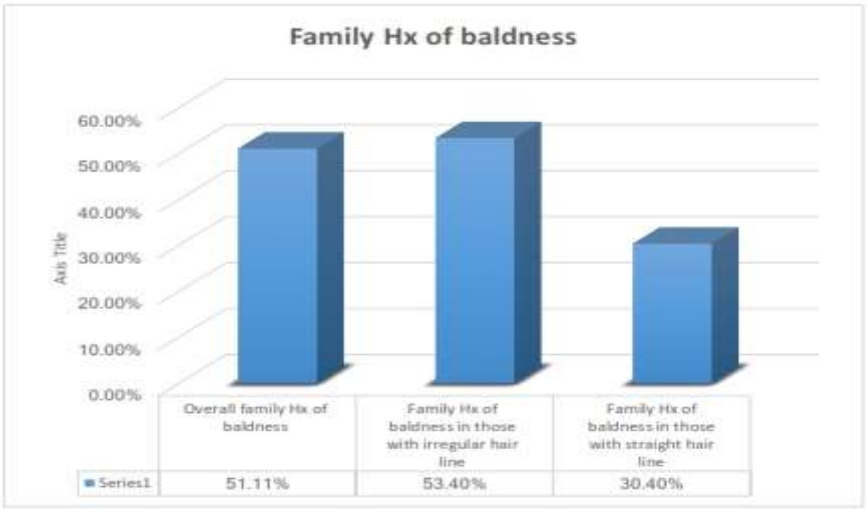

Figure 3. Family history of baldness.

VI. MEASUREMENTS AND DIMENSIONS

Our results showed in tables 1, 2.

Table 1: Hair lines dimensions.

		Mean	SD	CI 95%	MAX	MIN	MEDIAN
Widow's peak dimensions	**Height (cm)**	1.424	0.586	0.144	3.2	0.5	1.25
	Width (cm)	2.659	0.618	0.151	4	1.4	2.5
Widow's peak—lateral mound*	**Right (cm)**	4.246	0.914	0.216	6	2	4.3
	Left (cm)	4.180	0.894	0.211	6.5	2.4	4

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Temporal point —lateral eye brow	**Right (cm)**	3.383	0.832	0.186	6	1.6	3.3
	Left (cm)	3.398	0.743	0.166	5.2	1.7	3.4
Widow's peak — Temporal point**	**Right (cm)**	7.810	0.789	0.176	9.5	6	8
	Left (cm)	7.812	0.833	0.186	10	5.9	7.7
Widow's peak— Inter eye brows***	**(cm)**	5.650	0.825	0.184	8	3.5	5.5

***** Those with absent Widow's peak, med frontal hair line point was taken instead, and those with straight hair lines were excluded.

****** Those with absent Widow's peak were excluded, instead med frontal hair line point taken.

******* Those with absent Widow's peak were excluded, instead med frontal hair line point taken.

Table 2: Prevalence of positive family history of baldness in those with irregular hair line versus those with straight hair line.

Variables	No	+ve Family history	%	
Those with irregular hair line	202	108	53.4	Z score=2.0936
Those with straight hair line	23	7	30.4	P value=0.0366
Total	225	115	51.1	

VII. DISCUSSION

Our finding suggest that the young Kurdish males have mostly irregular anterior hair lines due to the presence of at least one or mostly both of the macro irregularities (the med frontal that is called the widow's peak and the lateral mound), with relatively low hair lines. The most frequent hair lines shape was a wave like in the presence of both types of the macro irregularities (85%), a straight line in the absence of both macro irregularities (10%), and W shaped or inverted V shape in the absence of the widow's peak and prominent lateral mounds (5%). Comparing our results to other very little studies results conducted elsewhere in the world were inconsistent ,in study done in Nigeria by Ordu and Agi in 2014 they stated a prevalence of straight hair line of 86.3% and a curved hair line of 13.7%[13], depending on the absence or presence of the widow's peak respectively, they conducted their study on different ethnicity, on both genders ,wide ranged age group ,larger dimensions of the widow's peak, they Considered the overall curved hair lines as a widow's peak and they didn't take the contribution of the lateral mound to overall shape of the hair line. Smith and Cohen in 1973 they stated also a very low rate of widow's peak (3%) [14], their study conducted on multi- racial, both genders, younger aged group and strict definition of the widow's peak. In contrary Nausbaum and Fuentefria in 2009 in a study conducted on females customers of hair dressing salons stated an 81% presence of widow's peak [15], similar study by Ceballos et al [16], which conducted on 103 Spanish Caucasian females of child's bearing age resulted in a higher rate of the Presence of widow's peak (94.17 %), they also measures the dimensions of the widow's Peak and relatively similar parameters except that they didn't measure the temporal point to lateral eye brows distance and we didn't measure the lateral mound to the temporal point distance, however the comparison is not relevant because they conducted their study on females. Those different results of those different studies reflects more the effect of the different designs of those studies, different

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populations, genders, age groups and different concepts of the major hair line structure, rather than the bias of each individual study. We used only 225 males subjects in our study ,we think that the future studies should include more subjects to decrease the bias and margins of errors and include the females in the same studies.

VIII. CONCLUSIONS

In this study we described for the first time the shape and dimensions of the hair line of healthy young Kurdish males we had described the major components that makes up the hair line and the distances between them , we think those measurements are valuable to be considered in planning hair restoration surgeries ,scalp advancing or scar camouflage of the anterior scalp and upper forehead ,and treatment of fibrosing alopecia. In the absence of previous studies this study can be used as pilot study for future researches. The advent of follicular units (FU) hair transplant gave the hair restoration surgeons a fine brush that enable them to create a very fine touches so with aid of these measurements we think they will get more superior esthetic results that meets the needs of the more demanding patients. Regarding the height of the hair line which was relatively low in our sample , the surgeons should resist the urge to do a low hair lines especially for young patient and those established or advancing baldness.

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Conflict of Interest- nil

REFERENCES

1. Shapiro R. Principles and techniques used to create a natural hairline in surgical hair restoration. Facial Plastic Surgery Clinics of North America. 2004;12(2):201-217.
2. Parsley W. Comparison of Natural and Surgically Created Transition Zones. 7th Annual Meeting of International Society of Hair Restoration Surgery. San Francisco, CA; 1999.
3. Martinick JH. Hairline Placement: Getting It Right the First Time. Hair Transplant Forum International 1999; 9(3): 65-71.
4. Haber R, Stough D. Hair transplantation. Philadelphia: Elsevier Saunders; 2006. (59-63).
5. Fang F, Clapham P, Chung K. A Systematic Review of Interethnic Variability in Facial Dimensions. Plastic and Reconstructive Surgery. 2011;127(2):874-881.
6. Hair-science.com. L'OREAL ELSEWHERE IN THE WORLD: ASIAN HAIR, AFRICAN HAIR, CAUCASIAN HAIR. 2015, Available from: http://www.hair-science.com/_int/_en/topic/topic_sousrub
7. Carniol P, Monheit G. Aesthetic rejuvenation challenges and solutions. London: Informa Healthcare; 2010. (3).
8. Epstein J, Bared A, Kuka G. Ethnic Considerations in Hair Restoration Surgery. Facial Plastic Surgery Clinics of North America. 2014;22(3):427-437.
9. Lam S, Karamanovski E. Hair Restoration in the Ethnic Patient and Review of Hair Transplant Fundamentals. Facial Plastic Surgery Clinics of North America. 2010;18(1):35-42.

Received: 23 Dec 2019 | Revised: 05 Jan 2020 | Accepted: 27 Feb 2020

10. Konior R, Gabel S. Hair Restoration, An Issue of Facial Plastic Surgery Clinics. London: Elsevier Health Sciences; 2013.(58)
11. NORWOOD O. Male Pattern Baldness: classification and Incidence. Southern Medical Journal. 1975;68(11):1359-1365.
12. Hamilton J. PATTERNED LOSS OF HAIR IN MAN: TYPES AND INCIDENCE. Annals of the New York Academy of Sciences. 1951;53(3):708-728.
13. Ordu K, Agi C. Inheritance of hairline shape amongst Nigerian population. International journal of current microbiology and applied science. 2014,2:61-65.
14. SMITH D, Cohen M. WIDOW'S PEAK SCALP-HAIR ANOMALY AND ITS RELATION TO OCULAR HYPERTELORISM. The Lancet. Elsevier BV; 1973;302(7838):1127–8.
15. NUSBAUM BP, FUENTEFRIA S. Naturally Occurring Female Hairline Patterns. Dermatologic Surgery. Ovid Technologies (Wolters Kluwer Health); 2009;35(6):907–13.
16. NUSBAUM BP, FUENTEFRIA S. Naturally Occurring Female Hairline Patterns. Dermatologic Surgery. Ovid Technologies (Wolters Kluwer Health); 2009;35(6):907–13.
17. Ceballos C, Priego C, Méndez C, Hoffner MV, García-Hernández MJ, Camacho FM. Study of Frontal Hairline Patterns in Spanish Caucasian Women. Actas Dermo-Sifiliográficas (English Edition). Elsevier BV; 2013;104(4):311–5.

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