INTRODUCTION

When have humans not been fixated on eyebrows? from the Egyptian pharaohs who blackened their arches with kohl to 17th century women who used mouse hide brow wigs, to fashion’s current swings between bleached and bold brow extremes; cultures have long prized the eyebrow in its limitless forms. Ancient Greeks had their own strange eyebrow rituals. Women used powdered minerals or soot to paint their brows black and appeared to have preferred a unibrow. Romans also had elaborate beauty rituals and favored a unibrow.[1]

Eyebrows are not just beauty fixation; they play an essential role in communication and facial recognition too. In a study, participants were able to identify personalities only with eyebrows on face with eyes digitally edited out of images, 60% of the time.[2]

Taber’s dictionary defines Synophrys as “the fusion of eyebrows above the bridge of nose.”[3] It is the presence of abundant hair between the eyebrows so they seem to join to form one long eyebrow hence also known as unibrow or monobrow.[4] Besides it is a recognized feature of Cornelia De Lange syndrome and many other genetic disorders associated with it.[5]

Synophrys and unibrow is part of variation of normal human eyebrow too. Historically, in some cultures synophrys are regarded as an attractive quality in men and women alike while Western culture finds it unappealing and is viewed as lack of sophistication.[4]

Arabian culture associates the fusion of eyebrows as a sign of beauty. The immense popularity tempts several women who have normal eyebrow to draw a black line thus joining them to fake a unibrow.

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Thus, synophrys is an important facial feature which
does not have a known prevalence; hence, we have attempted to find out the prevalence of
synophrys in Omani population.

**MATERIALS AND METHODS**

This study was undertaken from May 2014 to January 2015 after ethical clearance from ethics and review committee. All the patients attending dermatology clinic and people accompanying them for whatsoever reason were also observed for the presence of synophrys. The data were recorded on a format, detailing the demographic features. The identities of participants were masked using identity number issued by record section for the electronic health records (EHR) system Al Shifa 2.5,© Ministry of Health, Sultanate of Oman instead of names of the participants. The data were tabulated in form of age, sex, presence of synophrys, reason for attending the clinic, and any associated genetic or chronic lifestyle diseases and analyzed using SPSS software 22 (IBM Corporation, U.S.A.).

**RESULTS**

In the duration of 8 months, we observed 927 participants for the presence of synophrys; one hundred and ten cases (11.87%) were found with synophrys [Figure 1]. The participants were within 4 months to 69 years of age. The data are shown in Table 1. The pattern of fusion of eyebrows was partial in some while it was complete in others. In participants with partial fusion eyebrows grew medially just short of joining, with a bunch of hair present on the glabella [Figure 2]. Some (11.82%) first-degree relatives [Table 2] of the cases with synophrys also had synophrys and this was not statistically significant ($P = 0.767$).

**DISCUSSION**

Texts⁷ describe synophrys, when eyebrows may be profuse with a tendency to meet in the center of the face. There is a wide variation in the color, distribution, and density of the eyebrow hair. The inheritance of the appearance of the eyebrows is polygenic. Some hereditary variations are of no known significance, but others are associated with developmental defects or are part of a recognized syndrome.

Several genetic syndromes are associated with synophrys, this can be imagined when a search on OMIM⁸ index (Online Mendelian Inheritance in Man) with the term as “synophrys” returns 113 results. Apart from normal variation, syndromes⁹ associated with synophrys are:

1. Cornelia De Lange syndrome (OMIM # 122470 –
   congenital muscular hypertrophy – cerebral syndrome)

| Table 1: Age distribution of cases with synophrys |
|-----------------------------------------------|
| Age group (years)    | Males | Females | Total (%) |
|----------------------|-------|---------|-----------|
| <12                  | 12    | 11      | 23 (20.91)|
| 12–50                | 54    | 31      | 85 (77.27)|
| >50                  | 2     | Nil     | 02 (1.82)|
| Total (%)            | 68 (61.82)| 42 (31.18)| 110          |

| Table 2: Synophrys in first-degree relatives |
|---------------------------------------------|
| Relationship                  | n (%)             |
| Father                        | 6 (46.15%)        |
| Mother                        | 1 (7.69%)         |
| Brother/sister                | 2 (15.38%)        |
| Son/daughter                  | 3 (23.09%)        |
| Twins                         | 1 (7.69%)         |
| Total                         | 13 (n=110, 11.82%)|

Figure 1: Complete unibrow

Figure 2: Partial unibrow
2. Basal cell nevus syndrome (Gorlin syndrome)
3. Deletion 3p syndrome
4. Duplication 3q syndrome
5. Frontometaphyseal syndrome
6. Hirschhorn-Cooper syndrome (chromosome partial deletion syndrome)
7. Labard syndrome
8. Partial trisomy chromosome 15
9. Waardenburg's syndrome (interoculoldermatodentodigital dysplasia)
10. Smith–Lemli–Opitz syndrome (cerebrohepatorenal syndrome)
11. Thirteen trisomy syndrome (Patau syndrome)
12. Mucopolysaccharidoses type III
13. May also present in cretinism.

Kwashiorkor is also mentioned as an association in textbooks of dermatology though it has not been substantiated with a valid reference.

In this study, however, we did not encounter any case of genetic disorder.

A recent study has found that eyebrow thickness is determined by a gene overlapping FOXL2 while synophrys has been shown to be associated with PAX3 gene in a genome-wide association scan involving 6357 Latin Americans from five countries.

Fusion of eyebrows may be complete as is viewed [Figure 1] or sometimes may be evolving or partial [Figure 2], when the two brows are spaced and there are hair on glabella. Hair may or may not grow later to complete such presentation. Thus, synophrys could be staged as Stage 1 when the brows are distant apart and there are distinct hair on glabella; stage 2 when the brows join to form unibrow without any empty space visible between them.

We have included the relatives of the cases in this study; therefore, there is obvious selection bias involved; a survey of general public different from those attending hospital would have been an ideal sample. This study included only Omani people hence it represents one ethnic group; however, recognizing the global prevalence of synophrys may be possible only after surveys in different population samples are available.

CONCLUSION

We have studied the prevalence (11.87%) of synophrys which has not been performed earlier. Many (11.82%) first-degree relatives also presented with synophrys. However, this association was not significant.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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