



Rugae pattern in a Saudi population sample of males and females

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تهدف هذه الدراسة لمعرفة ومقارنة نمط التجاعيد اللثوية لقبة الحنك بين السعوديين من الذكور والإناث والتي ربما تكون طريقة إضافية لمعرفة هوية الأشخاص في حالات الحرائق وحوادث الطيران. تم أخذ طبقات لفك العلوي لمجموعة مختارة من النموذجيين وعددهم ٦٠ ذكراً و٦٠ أنثى بمادة الإلخيات وتم صنه بالجلس لعمل مثال لكل منهم، حال من الفقاغات الهوائية أو أي تشوهات، خاصة في المنطقة الامامية من الحنك. استعملت طريقة توماس وكوري في عام ١٩٨٣م والتي تشمل عدد وشكل ودرجة النخام التجاعيد باستخدام عدسة مكبرة ومسطرة بلاستيكية للقياس. تمّت جميع القياسات عن طريق شخص واحد بالمليمتر.

أوضحت الدراسة أنه لا يوجد فرق هام في عدد وطول التجاعيد بين الذكور والإناث ولكن وجد أن هناك فرقاً هاماً في إحصائياتها من حيث الشكل وهما:

تتميز الإناث بوجود تجاعيد ملتصقة للدخل، بينما يتميز الذكور بوجود تجاعيد دائرية. وهذه المعلومات تمكن من إضافة نمط التجاعيد كإحدى الوسائل للفرقة بين الإناث والذكور، أو كوسيلة إضافية، مع الوسائل الأخرى كالرؤية البصرية، البصمات أو خصائص الإنسان في حالات حوادث الطيران أو الحروق وما شابهها.

The aim of this study was to identify and compare the rugae pattern in Saudi males and females, which may be an additional method of identification in cases of crimes or aircraft accidents. Alginate impressions of the palate of selected 120 Saudis, 60 males and 60 females, were poured in stone. The casts were free of voids and air bubbles. The method of identification of rugae pattern followed, was that of Thomas (1983) which includes the number, shape and unification of rugae. A magnified lens was used for identification and a plastic ruler was used for measurements. All measurements were in mm and were done by one examiner. The study revealed that there was no significant difference in the total number or length of rugae between the two sexes. The different types of rugae between the male and female were statistically compared. The female showed a significant difference in the converge type while the male had a significant difference in the circular type. It may be concluded that the rugae pattern can be an additional method of differentiation between the Saudi male and female in conjunction with the other methods such as visual, fingerprints, and dental characteristics in forensic sciences.

Introduction

According to the Glossary of Prosthodontics¹, rugae are anatomical folds or wrinkles (usually used in the plural sense); the irregular fibrous connective tissue located on the anterior third of the palate behind the incisive papilla. They are also called plica palatinae. Rugae patterns have been studied for various purposes mainly in the fields of anthropology, comparative anatomy, genetics, prosthodontics and orthodontics.^{2,3} In forensic medicine, three main methods of identifications are used namely the visual, fingerprints and dental characteristics. In many instances, one or all of these methods may not be totally effective or conclusive.⁴ Many criminal investigations and victims of aircraft^{5,6} accidents have been identified by their dentition.^{7,8} The use of human palatal rugae⁹ was suggested as an alternative method of identification.¹⁰ Rugae are protected

from trauma by their internal position in the head and they are insulated from heat by the tongue and the buccal fat pads. In one study, it was reported that no two palates are alike in their configuration and that the palatal print did not change. Even between twins, the studies indicated that the patterns are similar but not identical.¹¹

The purpose of this paper was to study the rugae pattern in a Saudi male and female sample, and to compare the patterns between the two groups, which may be an additional method of identification in cases of crimes or aircraft accidents.

Materials and Methods

A total number of 120 Class I dentate subjects, 60 males and 60 females were selected among the students of the Dental College, King Saud University, Riyadh, Kingdom of Saudi Arabia. Their ages were between 20-26 years with a mean of 22 years. All subjects were healthy individuals free of congenital abnormalities, inflammation, trauma or orthodontic treatment.

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