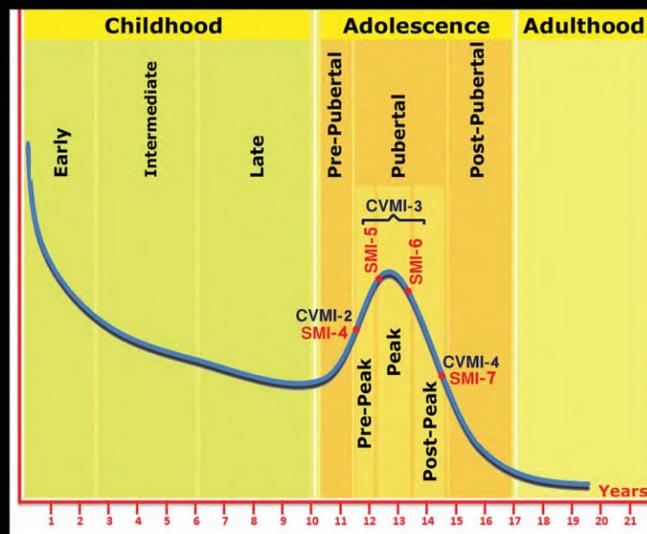


Correlation of Two Radiographic Methods of Skeletal Maturation Stages Determination in Skeletal Class II Malocclusion Patients at Puberty

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INTRODUCTION

Several studies² have been indicated that skeletal maturation index (SMI) and cervical vertebrae maturation index (CVMI) are strongly related.



AIM

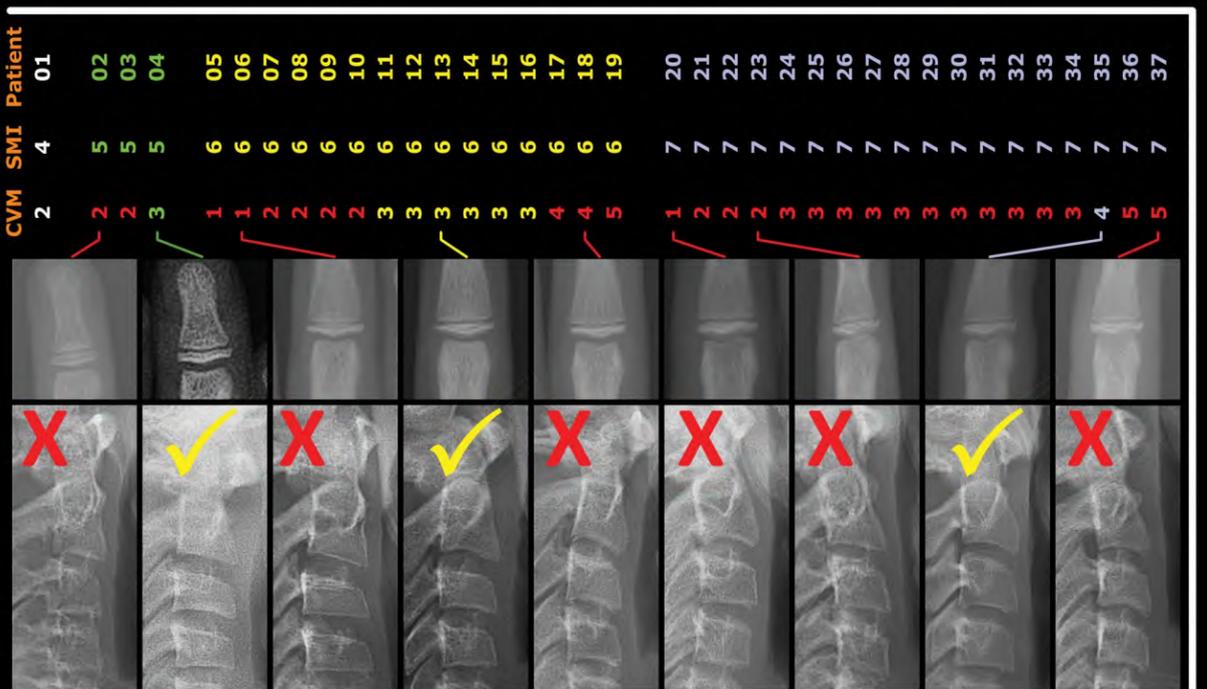
The purpose of the present comparative study was to evaluate the correlation between two radiographic methods used to evaluate skeletal maturation, hand-wrist analysis method and cervical vertebrae analysis method.

METHODS

Digital hand-wrist radiograph and digital lateral cephalograms from 37 Syrian adolescent untreated skeletal Class II patients (19 females and 18 males) at puberty averaged 13.12 years were obtained. Skeletal maturation stage of each hand-wrist radiographs were evaluated using the method described by (Fishman)¹, whereas skeletal maturation stage of cervical vertebrae were evaluated using the method described by (Hassel and Farman)². To define the relationship between the two used method, Spearman's correlation coefficient was calculated.

CONCLUSION

Within the limits of this study, the cervical vertebrae maturation method might mislead the clinician when treating adolescent skeletal Class II patients at the pubertal growth spurt since it is not correlated with hand wrist skeletal maturation method.



Fishman Method¹
1982

SMI 4 (S)
SMI 5 (DP3cap)
SMI 6 (MP3cap)
SMI 7 (MP5cap)

Skeletal Maturity Index

Cervical Vertebrae Maturity Index

1. Fishman LS. Radiographic evaluation of skeletal maturation. A clinically oriented method based on hand-wrist films. Angle Orthod 1982;52:88-112.
2. Hassel B, Farman AG. Skeletal maturation evaluation using cervical vertebrae. Am J Orthod Dentofacial Orthop 1995;107:58-66.

RESULTS

The number and percentage of patients were calculated according to (SMI) and (CVMI) index. The (SMI) and (CVMI) stages was not related, and Spearman's correlation coefficient (r_s) was found to be not statistically significant.

| Correlation Coefficient | Cervical Vertebrae | | | | | Hand - Wrist |
|----------------------------|--------------------|-------|-------|-------|-------|--------------|
| | CVM-6 | CVM-5 | CVM-4 | CVM-3 | CVM-2 | |
| $r_s = 0.25$ $P = 0.13$ | 0 | 0 | 0 | 0 | 1 | 0 |
| | 0 | 0 | 0 | 1 | 2 | 0 |
| | 0 | 1 | 2 | 6 | 4 | 2 |
| | 0 | 2 | 1 | 11 | 3 | 0 |