



# OSAS – ENT – MAXILLA UNDERDEVELOPMENT CARDIAC INFARCTION

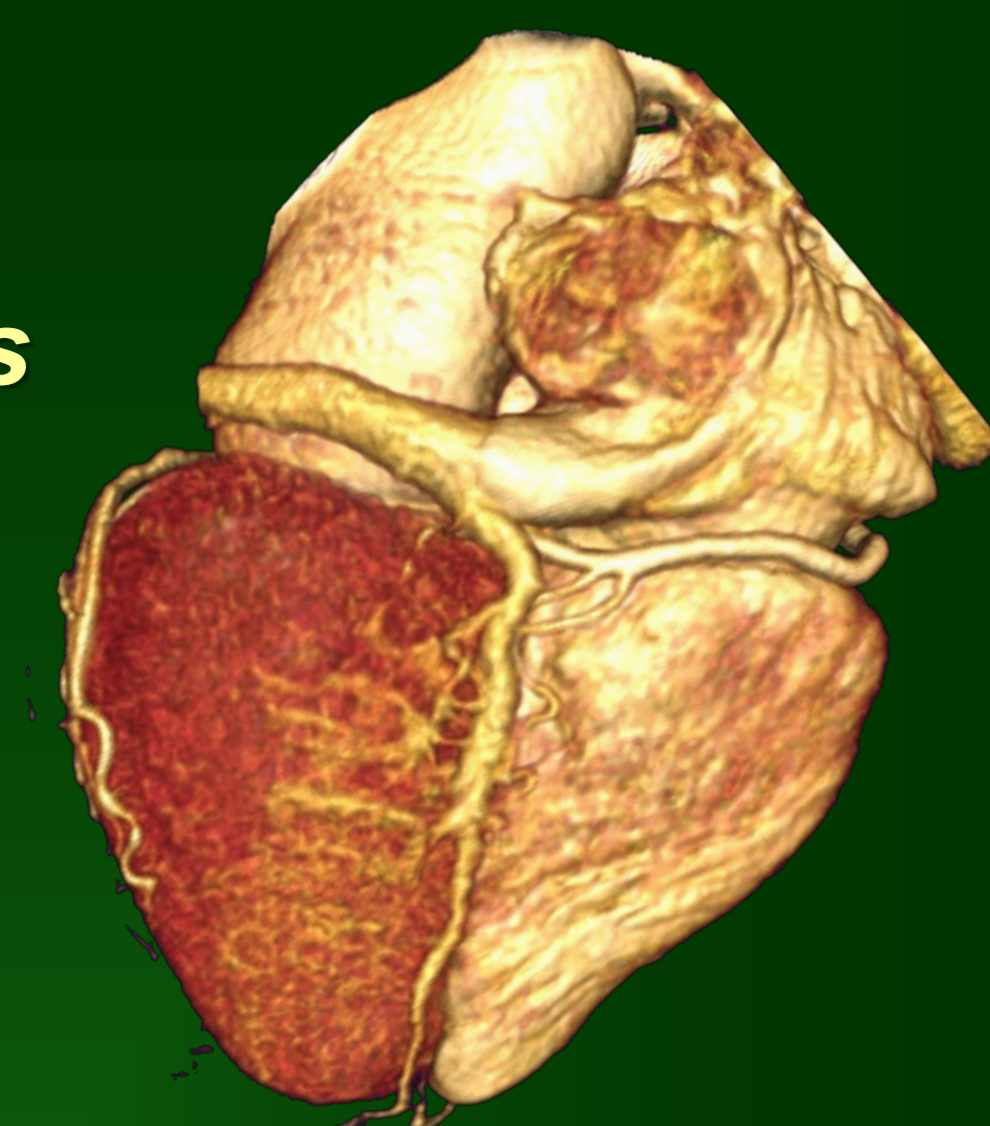
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ISTANBUL

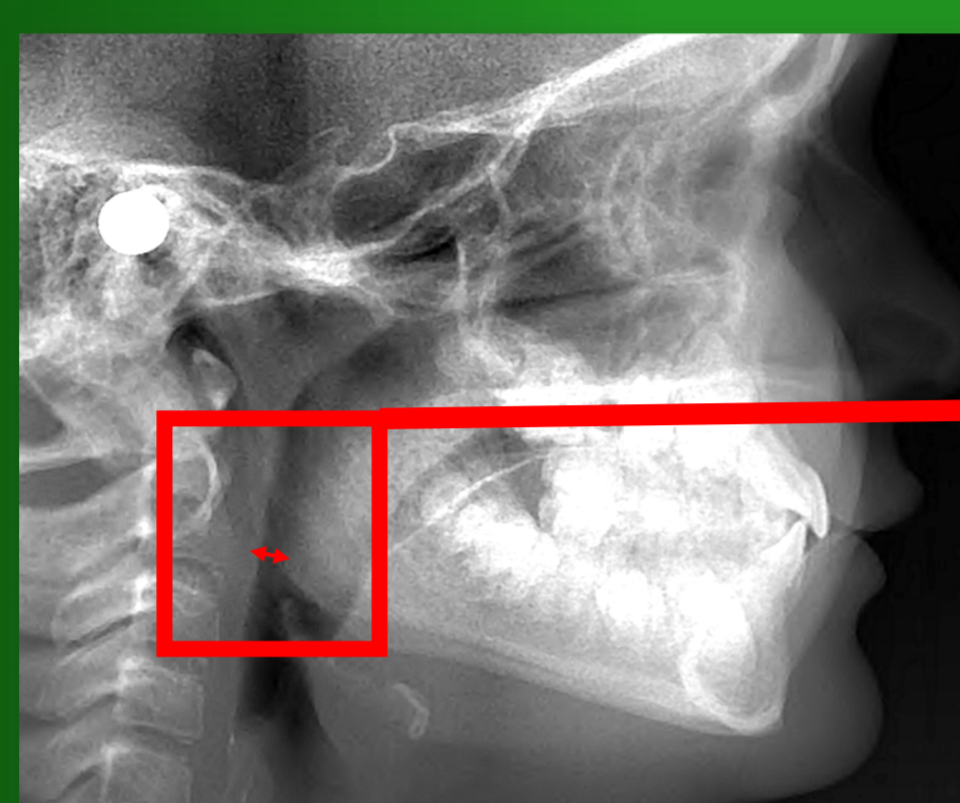
**Objectives:** Does pharyngeal airway restriction affect the growth of the maxilla? Which findings can be ascertained? Is there a relation between the extent of obstruction and the developmental disorders of the maxilla?

**Materials and Methods:** The narrowest transversal area of the pharynx is measured with transversal MRI image. The results are compared to the transversal width of the maxilla and its pathological findings. In total 124 patients got to be investigated with MRI respiratory imaging. All Patients with class II okklusion, open bite or tonsillectomy or orthodontic pretreatment have been excluded so that these patientgroup could not adulterate the result.

## EXAMPLE



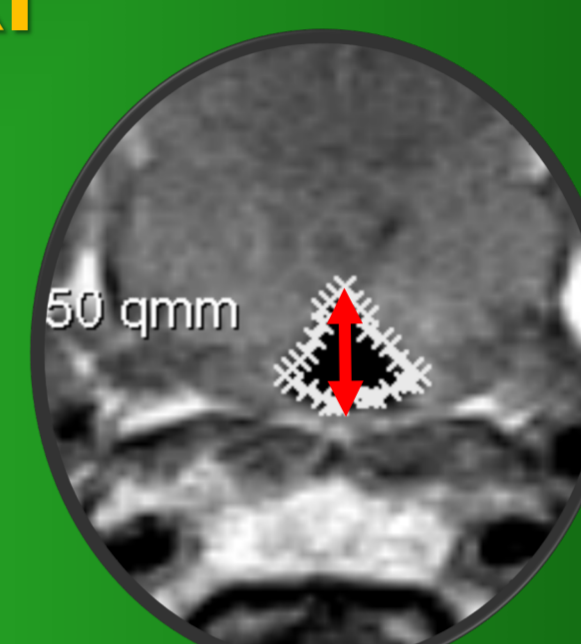
Bilateral Crossbite



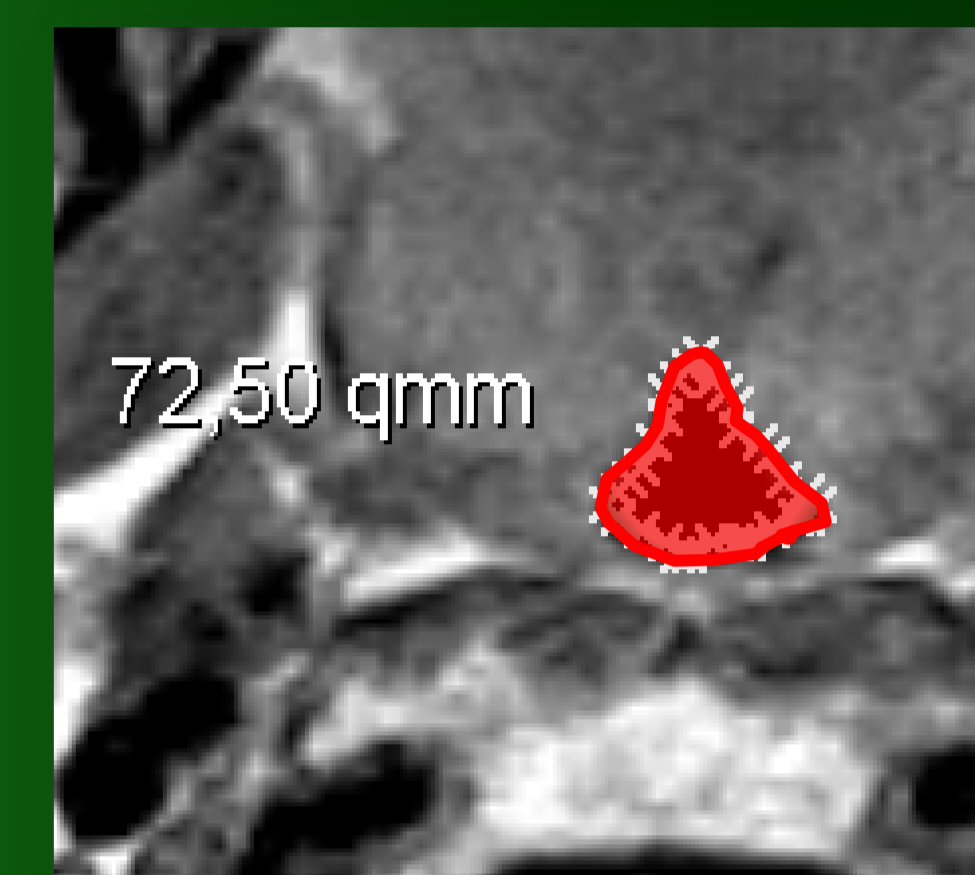
## CEPH



## MRI

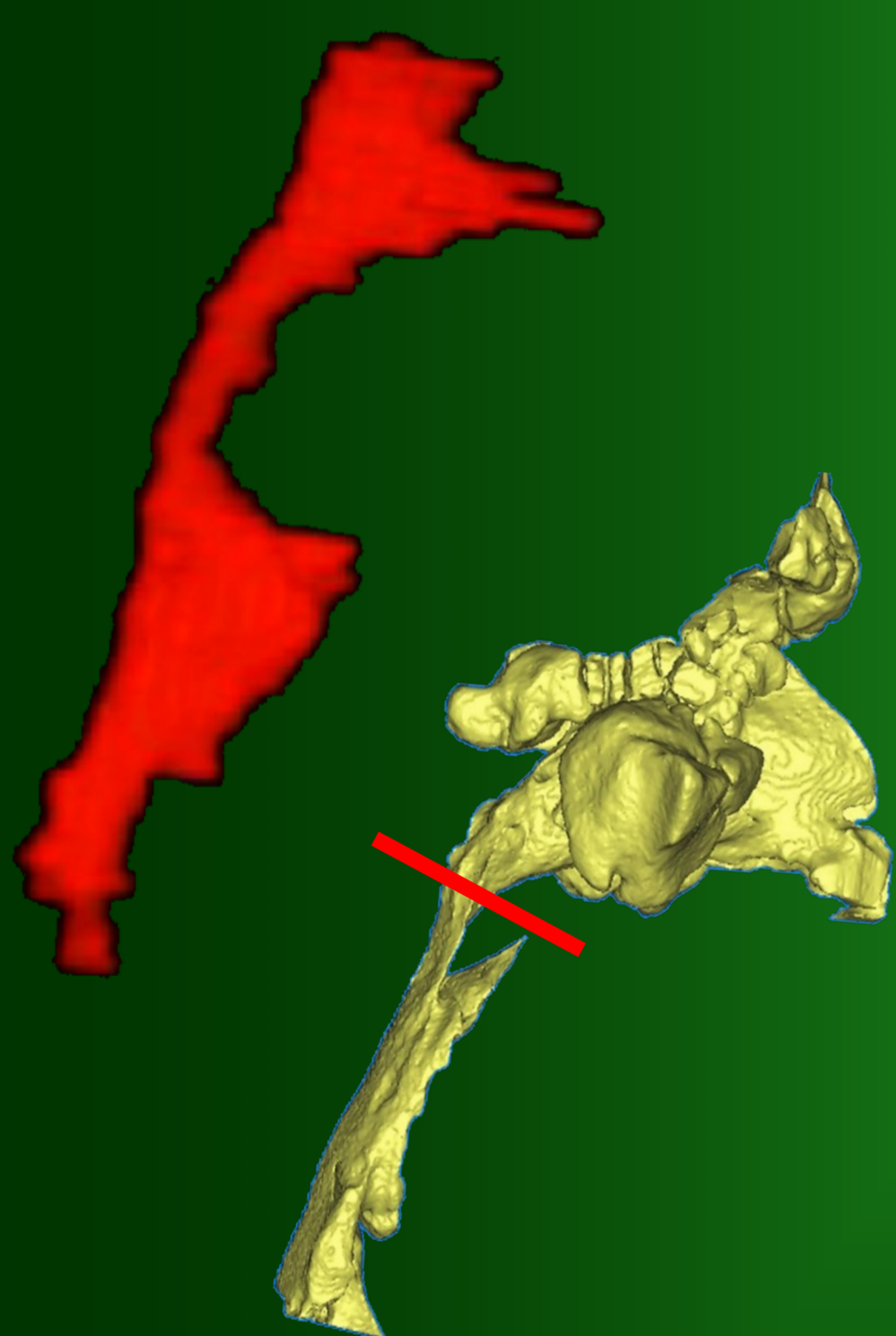


## MRI

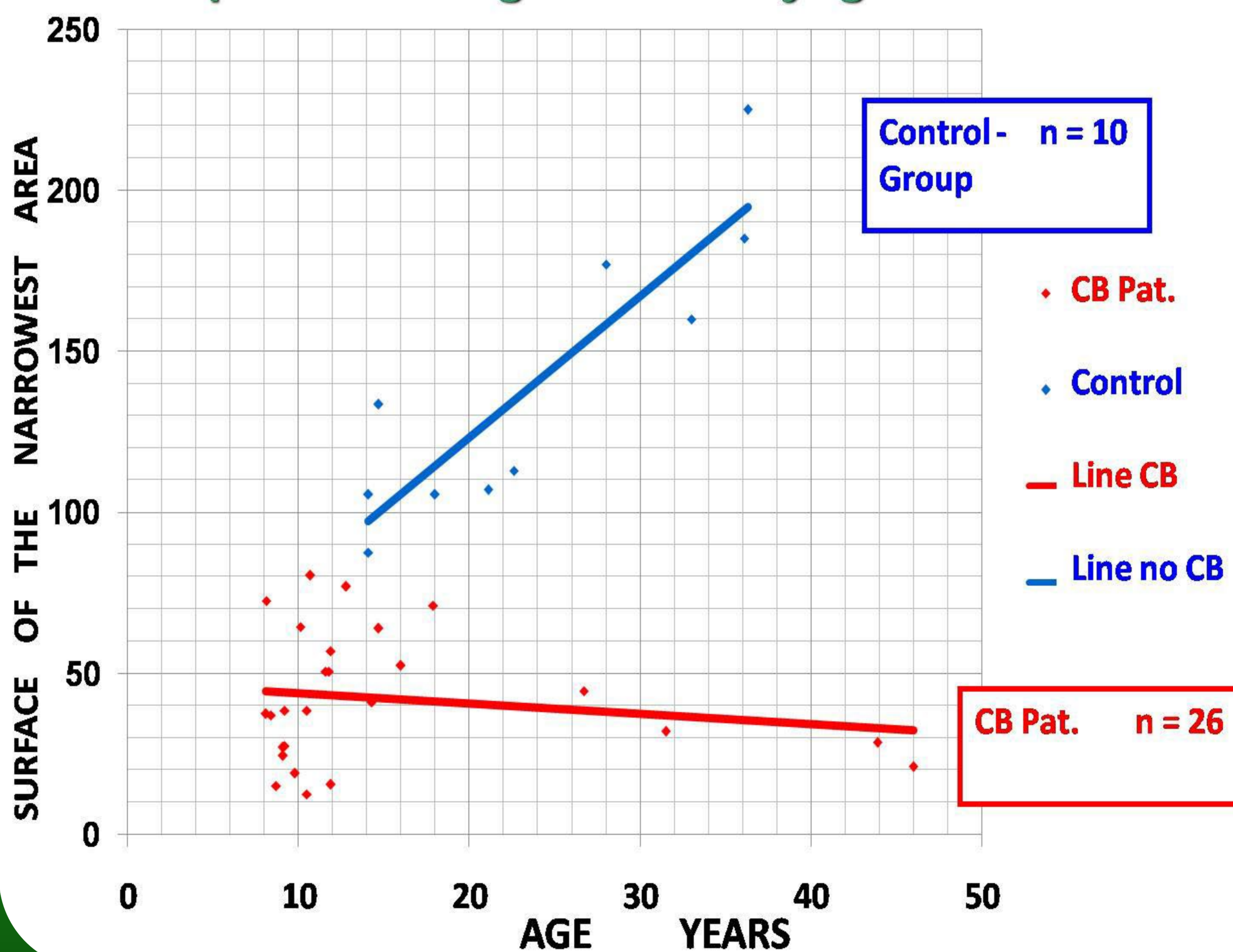


**Result:** The analysis of 26 patients with frontal or lateral crossbite as a sign of minor maxillary growth had an average square footage of 42,29 mm<sup>2</sup> at the pharyngeal isthmus. The values range from 12 mm<sup>2</sup> to 80 mm<sup>2</sup>. Female patients had lower values than male. The reference control group of 10 Patients with regular developed maxilla and no ENT findings or anamnesis had distinct better pharyngeal areas with measured values from 87mm<sup>2</sup> to 225mm<sup>2</sup>. The square footage on this control group was totally different to the group with reduced maxillary growth and had 139,9 mm<sup>2</sup>. The control group verifies an extension of the airways with advanced age, whereas the crossbite group increase a stenosis.

Lower:  
3D MRI  
Compared to  
a 3D CT of  
the upper  
airways



## Comparison of Age and Pharyngeal Isthmus



Tab. 2  
Age-related  
pharyngealer  
Isthmus of  
patients with  
(red)  
and without  
(blue) maxillary  
growth defency.

## Discussion:

It is obvious that pharyngeal obstruction effect maxillary development disorders which result in lateral or frontal cross bite or canine shortage of space. Every patient with a verified pharyngeal obstruction had one of these pathological findings. Even though it could not be prove that there will exist a closely coherence between the measure of the transversal width and the narrowness of the pharynx, this study verifies the association between respiratory obstruction and maxillary growth inhibition. Another Important fact is, that the crossbite-patients show a negative development of the isthmus tonsillar with alliterated age!

**Conclusion:** The study proves the thesis that respiratory obstruction induce developmentally disorders of the maxilla. Interdisciplinary aspects, such as ENT-OSAS and cardiologic (heart attack) are probably, whereas with the increase of age a reduction of the retropharyngeal Airway space could be ascertained on the crossbite-patient-group. The hypothesis, that orthodontic development could be a prophylaxis against cardiac infarction has to be investigated.

G. Polzar