



How painful is pain during RME? The comparison between growing and adult



Aim of the study:

The aim of this study was the assessment of the interrelationship between pain, age and the opening of midpalatal suture in patients treated with the Haas appliance on acrylic splints by the semi-rapid maxillary expansion (semi-RME) protocol.

Material and method:

The questionnaires filled out by 74 patients (48 females and 26 males) treated simultaneously with the Haas appliance on acrylic splint and lower fixed appliance were used in the study. All patients were divided into two age groups: growing patient group (GPG) after pubertal growth peak (CS4-6) according to the Cervical Vertebral Maturation (CVM) method aged 12 to 18-years-old (33 patients) and adult patient group (APG) aged 18-years 1 month to 42 years (41 patients). The opening of the midpalatal suture was based on the presence or absence of midline diastema and maxillary occlusal radiograph. All patients were treated by the same protocol based on turning the screw once a day. The pain level was described by patients in numerical rating scale (NRS). To describe the pain level a comparison was made between the pain feeling in the same patient during two procedures i.e. turning the screw of the Haas appliance and standard fixed appliance treatment with the use of NiTi arches. The statistical analysis was made by the use of χ^2 chi-square method.

Results:

The midpalatal suture was opened in 47 patients (63.7%) of total sample, 63.6% of the opening in GPG and 63.4% of the opening in APG. The youngest patient without diastema was a 12-year-old girl, whereas the oldest patient with diastema was a 42-year-old woman. The differences between pain level during treatment with the Haas appliance in GPG compared to APG were statistically significant ($\chi^2(3) = 17.87$ $p=0.000467$). A higher pain level related to the use of Haas appliance (H) was recorded compared to the fixed appliance (FA) in 21 patients (63.6%) in GPG and 10 patients (24.4%) in APG. The comparisons related to pain level with and without diastema for GPG and APG were made as well. No statistically significant differences were observed.

Conclusion:

Contrary to common opinion about pain during RME in adult patients, high pain level occurred much less frequently in adults compared to growing patients.

Table 1: Age distribution in total sample

Age groups	Age distribution	Number of patients
Growing patients group (GPG)	12-18 y	33 patients
Adult patients group (APG)	18y 1mo - 43 y	41 patients
Total sample		74

Abbreviations: GPG: growing patients group; APG: adult patients group

Table 2: Distribution of gender and opening of midpalatal suture in total sample

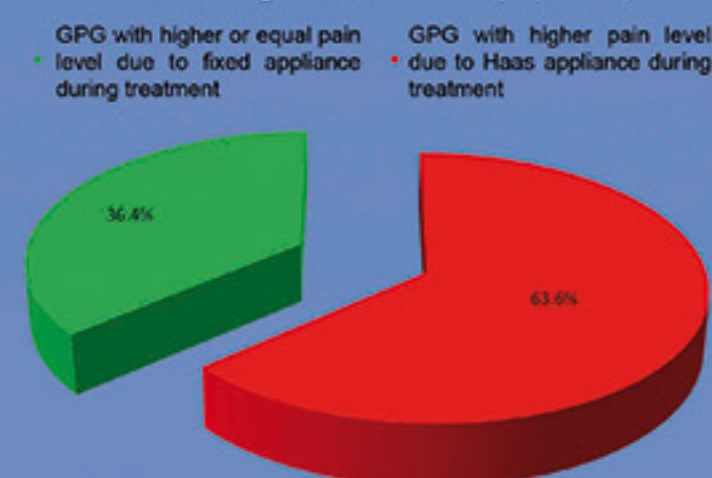
	Gender distribution in total sample	Opening of midpalatal suture (MS) in total sample
	48 female	47 patients (63.7%) opening of MS
	26 male	27 patients (26.3%) not opening of MS
Total sample	74 (100%)	74 (100%)

Table 3: Distribution of pain feeling in 2 age groups

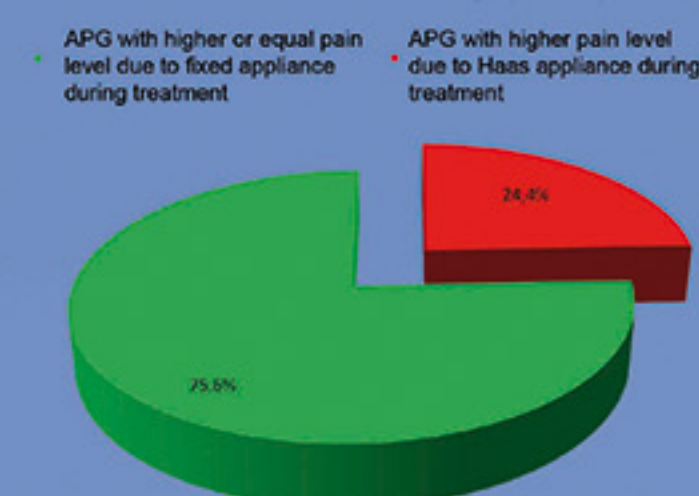
Age group	Pain feeling higher due to H compared with FA	Pain feeling lower or equal due to H compared with FA	Statistical data
GPG	21 patients (63.6%)	12 patients (36.4%)	$\chi^2(3) = 17.87$ $p = 0.000467$
APG	10 patients (24.4%)	31 patients (75.6%)	
Total sample	31 patients (41.9%)	43 patients (58.1%)	74 patients (100%)

Abbreviations: GPG: growing patients group; APG: adult patients group; H: Haas appliance; FA: fixed appliance

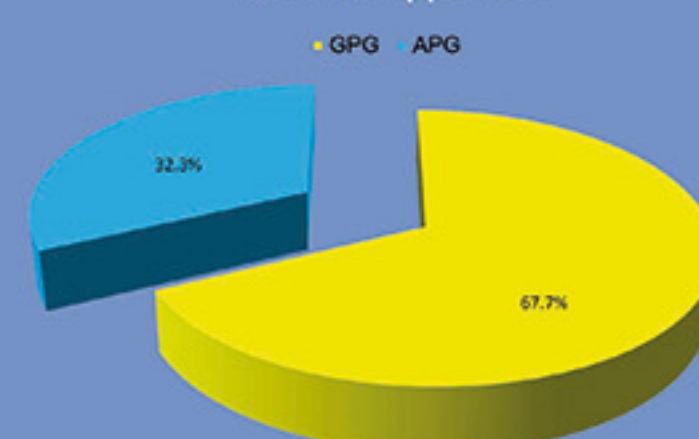
Percentage distribution of pain level for Growing Patient Group (GPG)



Percentage distribution of pain level for Adult Patient Group (APG)



Percentage distribution according to age in total group with higher pain level due to Haas appliance



19 years old



17 years old



26 years old

