Unexpected unilateral condylar hyperplasia despite successful completion of orthodontic treatment: a case report

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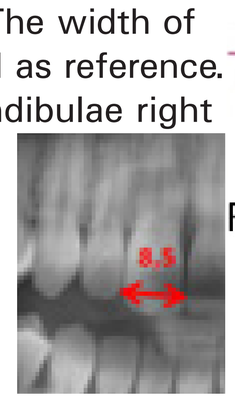
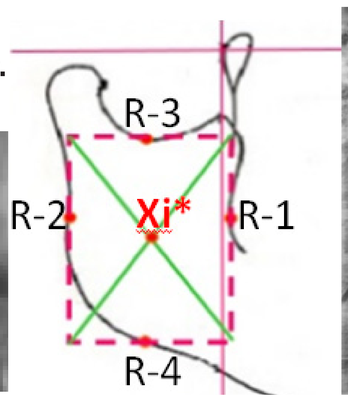
Aim
Literature describes that a secure occlusion prevents the appearance of unilateral condylar hyperplasia. Several cases in our office did not confirm this thesis. The analysis screens condylar hyperplasia after successful occlusal Class I adjustment.

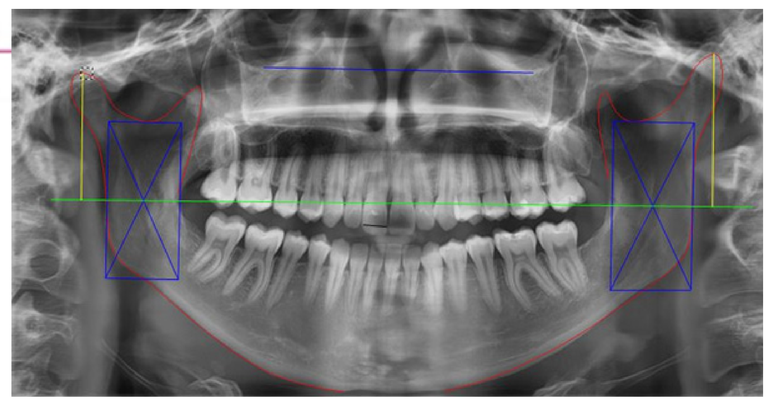
Materials (Subjects) and Method
Unilateral condylar hyperplasia is a rare disorder. In our office we could identify four patients within a period of 2 years developing unilateral condylar hyperplasia after successful occlusal Class I adjustment. X-rays and plaster models were analyzed as time series and compared with a control group.

The analysis of the OPG was carried out with Microsoft Visio. The width of tooth 11 measured on the plaster models of each patient served as reference. Perpendicular planes from the highest points of the Caput mandibulae right and left to the constructed plane Xi* was measured and compared in their time series.
Xi* point is located at the center of the ramus.
A plane through the Orbitale points was drawn

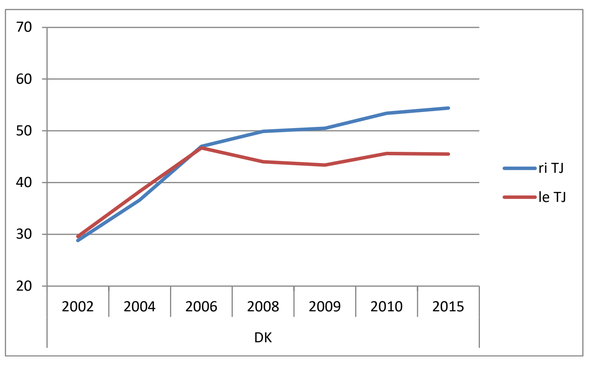
1. Four planes were constructed tangent to points R-1, R-2, R-3 and R-4 on the borders of the ramus
2. The constructed planes form a rectangle enclosing the ramus
3. Xi* point is located in the center of the rectangle at the intersection of the diagonals



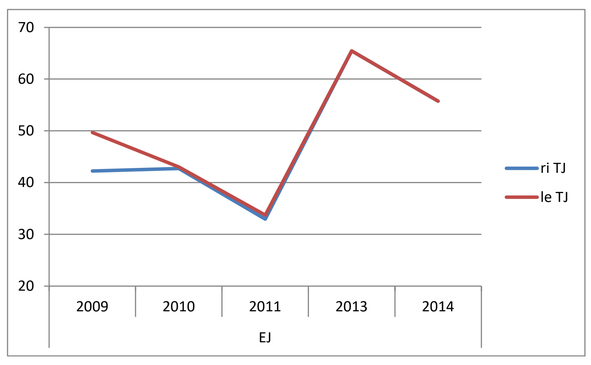




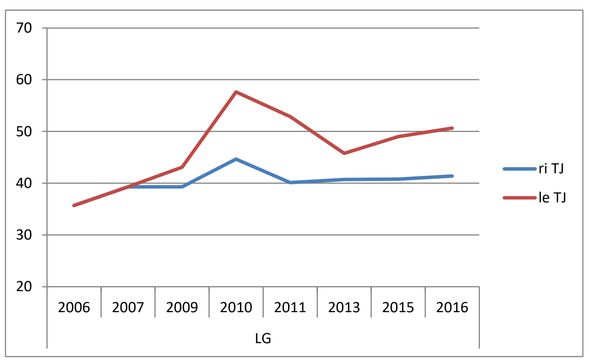
Data



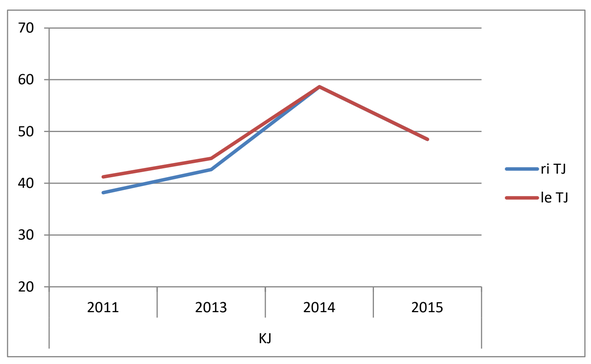
	ri TJ	le TJ
2002	28,8	29,6
2004	36,6	38,3
2006	47,0	46,7
2008	49,9	44,0
2009	50,5	43,4
2010	53,4	45,6
2015	54,4	45,5



	ri TJ	le TJ
2009	42,2	49,7
2010	42,7	43,0
2011	33,0	33,7
2013	65,5	65,5
2014	55,7	55,7

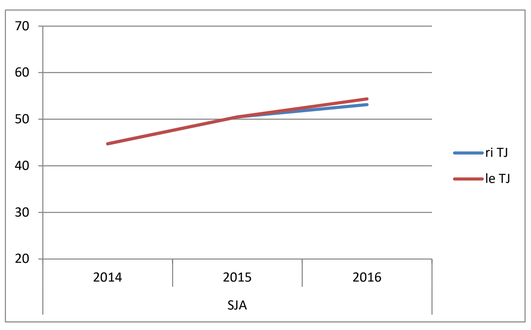


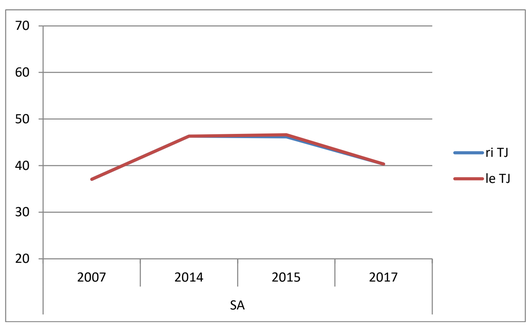
	ri TJ	le TJ
2006	35,7	35,7
2007	39,3	39,3
2009	39,3	43,1
2010	44,6	57,7
2011	40,1	52,9
2013	40,7	45,8
2015	40,8	49,0
2016	41,4	50,6

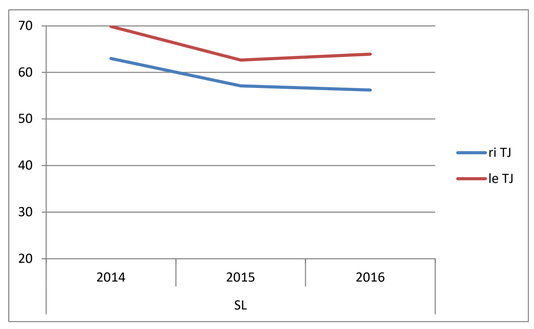


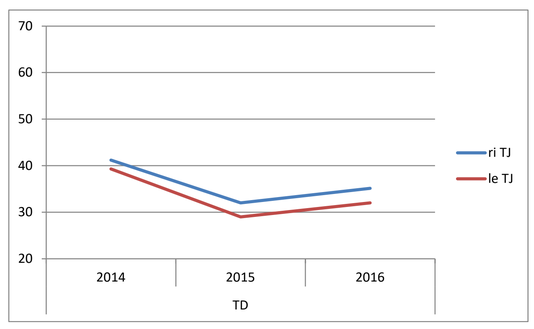
	ri TJ	le TJ
2011	38,2	41,2
2013	42,6	44,8
2014	58,7	58,7
2015	48,5	48,5

Data of the control group









Results
The one sided condylar hyperplasia seems to start in childhood, whereas the affected side keeps on growing in contrast to the „healthy“ side. With the previous orthodontic treatment dentoalveolar compensation and thus a secure occlusion was achieved. In defiance of a secure occlusion an unexpected late / post-tx growth spurt appeared in one condyle. Additional surgical intervention (Obwegeser / Dal Pont) was decided after scintigraphic exclusion of further idiopathic enchondrale growth. A sex-specific as well as a TMJ-disorder accumulation were detected.

Conclusion
A functional and definite occlusion is not able to prevent surely a one-sided post-orthodontic burst of growth. Consequently we can disporve Gola‘s (1) assertion. Females are affected more often (2-4). Orthognatic surgery can’t always be avoided and seems to provide stable results and an improvement of TMJ-disorder symptoms.

1 Gola R, Carreau JP, De Massiac G. Mandibular condylar hyperplasia. Therapeutic review. Rev Stomatol Chir Maxillofac. 1996;97(3):145-60.
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3 Villanueca-Alcojol L, Monje F, Gonzalez-Garcia R. Hyperplasia of the mandibular condyle: clinical, histopathologic, and treatment consideration in a series of 36 patients. J Oral Maxillofac Surg 2011;69:447-55.
4 Gray RJ, Sloan P, Quayle AA, Carter DH. Histopathological and scintigraphic features of condylar hyperplasia. Int J Oral Maxillofac Surg 1990;1965-71.

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