munohistochemical localization of LEPR and study the effect of leptin on the expression of dentin sialophosphoprotein (DSPP) by human pulp cells .

Materials and Methods
Twenty-five dental pulp samples were obtained from freshly caries- and restoration- free extracted human third molars. The pulp samples were processed and mineralization produced by odontoblasts in response to leptin was determined analyzing the expression of DSPP by immunoblot and by real time PCR (qRT- PCR). LEPR localization was examined by immunohistochemistry using anti-human LEPR monoclonal antibody.

Results
The immunoreactivity for antibodies anti- LEPR was localizated in the odontoblastic layer and the predentine . Leptin dose-dependently stimulated dentin sialophosphoprotein expression in human dental pulp. Western blot analysis of leptin-stimulated human dental pulp samples revealed the presence of a protein with an apparent molecular weight of approximately 100 kDa, which corresponds, to the estimated molecular weight of DSPP. The expression of DSPP mRNA was confirmed by qRT-PCR analysis, and the size of the amplified fragments was confirmed by agarose gel electrophoresis.

Conclusions
For the first time it has been demonstrated that human odontoblasts express the leptin receptor (LEPR) , and the binding of leptin to LEPR results by DSPP production by odontoblasts . These findings suggest that leptin plays a role in the defensive response pulp and dentinogenesis

- Oral Presentation 48

TITLE: Activation of PKB Pathway signaling by leptin in human dental pulp

AUTHORS: Martín Jiménez M, Martín González J, Crespo Gallardo I, Sánchez Domínguez B, Segura Egea JJ.
SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S23.

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http://dx.doi.org/10.4317/jced.17643832

Objectives
Leptin, initially described as an adipocyte-derived hormone to regulate weight control, as well as its receptor (LEPR), are expressed in human dental pulp. Both leptin and LEPR are up-regulated during pulp experimental inflammation. This study aims to assess if leptin signal transduction in human dental pulp involves PKB phosphorylation.

Materials and Methods
Fifteen dental pulp samples were obtained from freshly caries- and restoration- free extracted human third molars. Pulp samples were processed and leptin signalling was determined analyzing PKB phosphorylation by immunoblot. To measure activation of PI3K pathway in human dental pulp in response to human leptin, the activation of the central kinase of this pathway, i.e. PKB, was measured using antibodies that specifically recognize the phosphorylated form of PKB (P-PKB). Anti-β-tubulin antibodies were used for the control of the immunoblot.

Results
Leptin stimulated PKB phosphorylation. The phosphorylated band corresponded with an apparent molecular mass of about 60 kDa, which corresponds, to the estimated molecular weight of P-PKB. An increase in phosphorylation was observed at 0.1 nM leptin, maintaining the effect at 1 and 10 nM leptin. The relative amount of PKB in stimulated pulps was significantly higher than in unstimulated pulps ($p < 0.05$).

Conclusions
PKB is involved in leptin signalling pathways in human dental pulp.

- Oral Presentation 49

TITLE: Root perforations in central incisors: 12 years of evolution

AUTHORS: Martínez Osorio J, Canalda Salhi C, Berástegui Jimeno E.
SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S23.

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Introduction
In the endodontics field, iatrogenesis is a common and very complex issue, we had the chance to perform a retreatment in a patient with two root perforations performed while trying to access the pulp chamber of 1.1 and 1.2, due to lack of direction in the access opening.

Case report
A 65 years-old patient was referred to our clinic to retreat endodontically both central incisors after a previous failed attempt to in which the deviation of the axis to access cavity did a root perforation iatrogenically in

each of the teeth. Clinical photos and RX of the endodontic files introduced in the perforations and the correct location of the root canals are presented, as well as the root canal treatments performed in 2002.
The teeth perforations were exposed afterwards to perform a vestibular gigivectomy and were sealed with composite, after complete healing of the gingiva, the two teeth were treated with full coverage crowns. Images of the entire treatment were taken.Throughout these 12 years, we have been making regulars checks, the patient never again had any pathology. The clinical and esthetic evolution as well as the evolution of the root canal treatment and the perforations were successful. We present photos of the progress of the case and of the current state.

Conclusions
The orientation of the access cavity to pulp chamber and the anatomical knowledge of the tooth are very important to perform endodontic treatments. It must be taken into account the possible abnormalities in the size and shape of the tooth, the position in the arch, possible destruction by caries, abrasions or scuffs when we start to opening the chamber access. The evolution of the case shows that Conservative Dentistry should always be the first treatment option.

- Oral Presentation 50

TITLE: Fluorescence of resin composites: Comparison between shade types of various brands

AUTHORS: Meller C, Connert T, Klein C.
SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S24.

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Objectives
The aim of this study was to determine the fluorescence properties of different commercially available resin composite shades.

Materials and Methods
A total of 234 different colors (122 enamel, 80 dentin, and 32 special shades) of 16 different brands (Miris®2: Coltène-Whaledent, Esthet-X®HD, Ceram-X®Duo, Spectrum®: Dentsply-DeTrey, EcuSphere®: DMG, ENAMEL-Plus HFO/HRi®: GDF, Venus®, Venus® Diamond, Charisma®: Heraeus-Kulzer, Tetric-EvoCeram®, IPS-Empress® Direct: Ivoclar-Vivadent, Filtek-TM SupremeXT , FiltekTMZ250: 3M-Espe, Amaris® and Grandio®: VOCO) were analyzed. The composites were light-cured for 40s with a polymerization lamp (Bluephase®, Ivoclar-Vivadent) in 96-well assay microplates (Corning®) and fluorescence measurements conducted at 37°C using the monochromator-based fluorescence microplate reader SynergyTM Mx (BioTek®). The maximum fluorescence and the corresponding excitation and emission wavelength were evaluated for each shade.

Results
Maximum fluorescence was achieved at a nearly comparable combination of excitation and emission wavelength between shades, but with strongly varying intensities. Only two brands, Filtek™Supreme XT (dentin shades: 1585±507 RFU, enamel shades: 4473±330 RFU) and Filtek™Z250, (enamel shades: 867±279 RFU) resembled the fluorescence of natural human enamel and dentin probes. The shades of the other brands showed as much as three to fifteen times higher mean maximum fluorescence (dentin shades: 10331-47774 RFU; enamel shades: 19283-38264 RFU; special shades: 35934-60001 RFU). No relevant differences were recognized at the mean excitation (395-400 nm) and emission (450-458 nm) wave length for the assessed groups.

Conclusions
The results demonstrate that the analyzed composite brand shade types reached their maximum fluorescence at nearly the same excitation emission wavelengths combination, but with varying optical fluorescence intensities. The results provide fluorescence data of a vast sample of different well-known composite shades, data needed not only for the development of new aesthetic materials, but also for diagnostic reasons in routine (re- treatment, forensic and epidemiological research/ analyses.

- Oral Presentation 51

TITLE: Comparative study of the fatigue resistance of different rotary systems

AUTHORS: Mena Álvarez J, Zubizarreta Macho A, Rico Romano C.
SOURCE: J Clin Exp Dent. 2014 1;6 (Supplement1):S24.

* doi:10.4317/jced.17643835
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Objectives
The aim of this study is to compare the fatigue resistance of different rotary systems with different transverse section contributing files of taper and similar diameter apical, emphasizing Hyflex and F360 as new systems of rotary instrumentation.