

these materials with sandblasting (to increase roughness), plasma cleaning (to increase wettability) and laser micropatterning. Then the adhesion and the proliferation of cell lines and bacterial strains (hDPSCs, MG63, NIH-3T3 and *Staphylococcus aureus*) on these materials were evaluated.

Methods: Samples consist in disks with 8 mm of diameter and 4 mm of height. Aluminium oxide powder (125µm) was used for the procedure of sandblasting; plasma cleaning process was performed with a PDC-32G plasma cleaner at low power (6.8W) for 5 minutes. The laser modification was performed by Geass s.r.l.. Surface roughness and wettability were measured with profilometry and contact angle analyses, also the presence of external contaminations was tested with Scanning Electron Microscopy coupled with Energy Dispersive Spectroscopy. The analyzed cell lines are MG63 (human osteosarcoma cells), NIH-3T3 (mouse embryonic fibroblast cells), hDPSCs (human Dental Pulp Stem Cells) and the bacterial strain *Staphylococcus aureus*. Cell adhesion and proliferation were evaluated with the Alamar Blue assay at the day 1, 3, 6 and 9 from incubation. The specimens were also analyzed with SEM. MTT assay was used to test the metabolic activity of the *Staphylococcus aureus* biofilm on the material surfaces after 1 day of incubation.

Results: Sandblasting and plasma cleaning are both effective treatments to improve PEEK and titanium roughness and wettability. No external contamination occurs during all procedures. All of the surfaces analyzed showed biocompatibility towards cell lines used for the in vitro studies. For the MG63 and NIH-3T3 adhesion at day 1, sandblasted-plasma treated PEEK seems to be the best performing material, no differences were observed for hDPSCs. A better proliferation of NIH-3T3 was observed on sandblasted and sandblasted-plasma treated titanium, and a plateau reached from day 6 to day 9 was observed for all the surfaces. Regarding MG63 proliferation, a linear growth was observed for all the specimens, with a higher rate on sandblasted and plasma treated titanium. The hDPSCs showed no differences among the surfaces till day 6; from day 6 to day 9 a slowdown of proliferation was observed for both laser-treated titanium and laser treated-plasma treated titanium. The analysis of the metabolic activity of the bacterial biofilm showed no significant differences between all the materials, however a lower optical density was quantified for lasertreated and plasma-treated titanium.

Conclusion: The materials and the surface treatments tested in this study show similar properties in terms of cell adhesion and proliferation, and of biofilm formation. Further studies are necessary to clarify if which of these materials and treatments is able to induce a differentiation of hDPSCs, and the mineral matrix deposition from the osteoblasts. Another

critical issue for the future is the investigation of the adhesion of bacteria involved in the development of the peri-implantitis.

Application of L-PRF for socket preservation of an anterior fractured tooth in a young patient: a case report

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Aim: In order to preserve soft and hard tissue following dental extraction, several socket preservation techniques have been proposed. Indeed, especially in aesthetic areas, successful prosthetic-implant rehabilitations are no more based only on function stability of the prosthesis, it is fundamental to achieve the best white and pink aesthetic. Among several proposed graft materials, lately, autologous platelet concentrates (APC) have been applied in dentistry for tissue regeneration due to their capability to release supraphysiological doses of autologous growth factors. Among APC, Leukocyte and platelet-rich fibrin (L-PRF) possess excellent physical stability, advantageous for its application in post-extractive socket. The aim of this study is to present a case of socket preservation achieved by mean of L-PRF, and successive implant placement in the aesthetic area of a young patient.

Methods: We report the case of a woman, who was referred to the Department of Surgical, Oncological and Oral Sciences of University of Palermo due to a suspicious fracture of the upper right central incisor.

Results: A 48 year-old female presented to our attention with a suspected fracture of the upper right central incisor. Anamnestically, the patient reported no health concern and no consumption of tobacco or high consumption of alcohol. The patient presented an orthodontic splint of upper anterior teeth, placed by a colleague to avoid tooth crown loss. Clinical and radiological examination confirmed the tooth fracture of the 1.1. After signed informed consent, we performed the extraction of 1.1 and applied L-PRF clots, until the post extractive socket was completely filled. The tooth crown was adapted on the previous orthodontic splint. Post-surgical antiseptic therapy has been prescribed to the patient. After 3 follow-up months, the patient performed a CT scan. The clinical-radiological evaluations showed the presence of

adequate and ample bone; so the implant placement was planned and performed. During the follow-up period the patient had no complications, 3 months after surgical procedures, the implant was successfully loaded. At the latest follow-up, the clinical examination showed a good pink and white aesthetics.

Conclusion: L-PRF is purely autologous, inexpensive to harvest and easy to prepare. Although all the limitations of a single case-report, the use of L-PRF as a filling material for socket preservation seems promising in order to maintain an adequate volume of soft and hard tissues in order to obtain aesthetic rehabilitations.

Hypercementosis or cementoblastoma? An updated analysis of 790 cases in Abruzzo, Italy

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Aim: Cementoblastoma is an odontogenic benign tumour, characterized by the proliferation of functional cementoblasts that form a large mass of cementum or cementum-like tissue on the root of a vital tooth. This tumor consists of a rounded or nodular mass, attached to one or more tooth roots, criterion which differentiates it from an osteoblastoma (WHO, 2005). Hypercementosis is a non-neoplastic condition in which excessive cementum is deposited in continuation with the physiological radicular cementum. Apart from the idiopathic nature of hypercementosis, this condition is associated with several local and systemic factors. Although hypercementosis and cementoblastoma are typical conditions with distinct clinical evolution, atypical cases may challenge their diagnosis. Cementoblastoma is a neoplasm with unlimited growth potential, so the usual treatment is complete surgical resection, whereas conservative treatment is recommended for hypercementosis. The purpose of this study is to analyse the occurrence of this condition, its location and distribution between age and sex groups in a sample population in Abruzzo, Italy.

Methods: An orthopantomography analysis of 790 cases was performed. All radiographs with radiopaque areas contiguous with roots of vital teeth were considered positive for the inclusion criteria. Samples were divided by age, sex, location groups in order to assess the incidence rate of this disorder.

Results: Among the analyzed radiographs, 11 cases out of 790 showed radiopaque regions related to vital roots, representing 1,4% of the whole relevant population. In our sample, 45,5% of the patients presenting this condition were males while 54,5%

were female. 27% of the findings belonged to patients aged between 20 and 30 years old; 27% of the positive patients were aged between 30 and 40 years old; 18% belonged to patients aged between 40 and 50 years old; 9% of the findings belonged to patients aged between 70 and 80 years old; 9% of the positive patients were aged between 80 and 90 years old; finally, 9% belonged to patients aged 90 years and over. With regard to the status analysed, 46% of the findings were associated with first molars; 27% were connected to II premolars; 18% were related to first premolars and 9% to the canine. No lesions were found in the upper jaws or related to deciduous teeth. This radiographic sign was an occasional finding for all the positive patients.

Conclusion: Results are in accordance with literature, revealing that this kind of condition is rare and it is more frequently related to the roots of lower first molars. The prevalence of this finding is equally distributed between males and females. More than 50% of the total radiographic findings have been found in young patients aged between the second and third decades, and the prevalence decreases with increasing age. No patients came to our attention complaining about swelling, pain or neurological signs. This leads diagnostic hypothesis in most cases towards hypercementosis, which is totally asymptomatic and does not require any treatment. However problems may arise when endodontic treatment or extraction of the affected teeth are necessary. Luckily patients did not require any of these therapies at the present time. Therefore, every subject has now been included in a follow-up program scheduled as one-year endoral radiography, barring any complications.

Ameloblastoma or follicular cyst due to the presence of a third molar included? When the biopsy denies the radiographic hypothesis: a retrospective study

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Aim: Ameloblastoma is a benign tumor that, even if widely known, still today presents problems concerning its nosological and etiopathogenetical characteristics and differential diagnosis. Regarding its epidemiology, however, it is well known with a distinctive onset prevalence in the mandibular angle and within the first 3 decades of life. Due to this frequent localization the formulation of a differential diagnosis with frequent pathologies located in the same region, such as follicular and germinal cysts and keratocyst, is needed. In addition an impacted