BOND STRENGTH OF GUTTA PERCHA ROOT CANAL FILLING TO DENTIN AFTER DIFFERENT IRRIGATION PROTOCOLS

Thesis

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قياس قوة الرابطة بين مادة الجتا بركا لحشو الجذور وعاج الأسنان بعد استخدام محاليل مختلفة لغسيل قنوات الجذور

رسالة

لكلية طب الأسنان جامعة عين شمس للحصول على درجة الماجستير في علاج الجذور

مقدمة من الطبيبه

سماح أحمد عبدالعزيز

بكالوريوس طب وجراحة الفم والأسنان

جامعة عين شمس

{ قَالُواْ سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ}

صدق الله العظيم

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The main objectives of root canal therapy; are removal of diseased tissue, elimination of microorganisms present in the canals and prevention of recontamination after treatment. Current techniques of root canal debridement leave many areas of the root canal system completely untouched by instruments. Thus, a root canal irrigant is needed to aid in debridement .

Studies show that currently used methods of instrumentation especially, Rotary; produce smear layer that covers root canal walls and obliterate the openings of the dentinal tubules. The smear layer consists of organic and inorganic substances, including fragments of odontoblastic processes, microorganisms and necrotic materials. This layer prevents penetration of intracanal medications and also prevents complete adaptation of obturation materials to the prepared root canal surfaces. Various organic acids, ultrasonic instruments, and lasers have been used to remove the smear layer .

In the last years various irrigant materials were introduced to be used in the procedure of root canal cleaning either alone or in combination and they were evaluated according to their cleaning ability, antimicrobial effect, their penetration, lubrication and their ability to remove the smear layer . The effect of irrigants in root canal biomechanical preparation is

not only limited to their effect on pulp tissue and microorganisms but it also extends to the chemical composition of dentin surface so it affects the bond strength between dentin and different obturating materials .

Sodium hypochlorite (NaOCl) is still widely used in different concentrations due to its effective antimicrobial action, dissolution of organic material, transformation of amines into chloramines as well as its deodorizing effects and ease of removal from the canal. At high concentrations it is toxic and irritant to the tissues .

Chlorhexidine (CHX) is an effective oral antimicrobial agent. It shows a broad-spectrum antimicrobial effect, substantivity and low toxicity but it doesn't dissolve organic material. Its effect is comparable to NaOCl . Ethylene diamine tetra acetic acid (EDTA) is a chelating agent used for removal of the inorganic part of smear layer, different studies have shown that EDTA can remove the smear layer and result in dentinal tubules opening . Citric acid is used for removal of the inorganic part of smear layer and also results in dentinal tubules opening. MTAD is a new irrigating solution; a mixture of tetracycline isomer, an acid, and a detergent which is capable of safely removing the smear layer and effectively eliminating Enterococcus faecalis .