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## The ability of foreign body and infected by EF SS biofilm to sustain bone lesion in Rat Calvarium

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**Aim:** The current study examines the biofilm on Gutta-Percha (GP) root canal filling material as a possible cause for persistent apical periodontitis occurring after endodontic treatment. To this aim, we propose to assess the healing capacity of bone lesions around biofilm-infected and non-infected gutta-percha points.

**Methodology:** We used Wistar rats as animal models. This model can establish a causative relationship between microbes and pathogenesis designed and postulated by Robert Koch. It consists in introducing the "pathogenic factor" in a healthy body and observed whether it causes the same reaction, in the calvarium. They were divided into distinct groups: (1) Biofilm-infected with *Enterococcus faecalis* or with *Streptococcus sanguis*, (2) sterile non-infected GP and (3) bony defects with no particles implanted. The GP points were implanted into bony defects created in the animals' calvaria. The animals were sacrificed 60 postoperative days and histological assessments were performed.

**Results:** In the GP particles of the non-infected group, minimal inflammatory cell reactions were observed in the adjacent tissue and newly woven bone matrix surrounded by osteoblasts was detected. In the biofilm-infected group, a mild foreign body reaction with a few inflammatory cells was noted adjacent to the capsule and newly woven bone matrix surrounded by osteoblasts and mature bone was also observed.

**Conclusions:** It has been suggested that some root canal treatments fail because of non-microbial factors, including extruded root canal filling materials, which may cause a foreign body reaction. In this study gutta-percha with or without biofilm, has no ability to induce peri-apical lesion on its own, without the presence of an infected root canal in its vicinity.

### Biography

Shaul Lin Graduated in DMD 1994 from faculty of medicine, Tel-Aviv university. Postgraduate in endodontic specialist course 1994-2000. Chairman and Assistant Professor of Endodontic and Dental Trauma Department, Director of Post-Graduate Program in Endodontics in Rambam hospital. Assistant Professor in faculty of medicine, Technion. Member of the Endodontic Specialty Committee, Scientific Council. Author of more than 70 international scientific articles in dentistry.

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