







which had consequences and applications for all fields of study. Use of magnification in the field of periodontology was established in the year 1992. Nowadays, the numerous advances made technology have made it possible to imagine the operating area on the monitor in three dimensions, thereby excluding the need to actually look at the microscope. The main purpose of microsurgery is minimizing pain and morbidity in patient and extreme and accurate closure of the wound.

### **Tissue engineering**

Tissue engineering is a contemporary field of science focused on cell biology, developmental biology and biomaterial science concepts to establish new methods and biomaterials to replace missing or damaged tissues. Cells collected from pulp, periodontal ligament, gingival connective tissue, etc. Are used in various *in vitro* studies in order to determine their ability to distinguish between different periodontium progenitor cells. Tissue engineering is a very new technique and several reforms are required in the future to make this technique workable. Gene therapy is currently being used in antimicrobial therapy to monitor disease progression. Gene or nucleic acid medicines are classified as gene inhibitors, gene vaccines and gene replacements on the basis of their therapeutic use.

### **Nanotechnology**

Nanotechnology has been used in the field of dentistry since the early 1970s, the era of microfills. Since then, numerous nanomaterials have been introduced in the field of dentistry, including periodontology for proper oral health. Nanodiagnosics promise improved sensitivity, multiplexing capacities and reduced costs for many diagnostic applications. New nanodiagnostic methods include quantum dots, gold nanoparticles, and cantilevers. Potential diagnostic uses of QDs are various, with the most promising applications in the areas of tumor detection, tissue imaging, intracellular imaging, infectious agent detection and multiplex diagnostics [12].

Nanomaterials such as bioactive glass, carbon nanomaterials, titanium nanotubes coated dental implants, nanoceramics for bone regeneration; nanobiomaterials used for the preparation of periodontium regeneration scaffolds; metallic nanoparticles in the form of toothpaste and mouth rinses for the regulation of oral biofilm and nanoparticles for local drug delivery; nanorobots for oral analgesia.

### **Conclusion**

Clinicians must aim to progress and improve their diagnostic skills and understand the factors that influence diagnosis and prognosis to create a detailed treatment plan and provide adequate treatment and therefore evaluate the outcome and determine when dental care is required.

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