Electromagnetic interference of communication devices on apex locators: an in vitro study

Author: Dr. Juili B. Gawande
Designation: Senior Lecturer
Department: Department of conservative dentistry and endodontics
Institution: V.Y.W.S Dental college and hospital, Amravati, Maharashtra, India

The secret of healing of an endodontic lesion depends on various factors among which correct working length estimation remains a crucial step [1]. With advancement in technology, usage of electronic apex locators has raised among practitioners owing to increased accuracy and reduced exposure to radiation [2]. In comparison with radiography, the new apex locators determine not only the location of apical foramen but also the apical constrictor [3,4]. Root ZX mini apex locator from the third generation of apex locators provides apex location based on the resulting quotient. Apex ID on the other hand is sixth generation of apex locator. Various studies have been conducted which described the effect of electromagnetic radiation on different devices. One of the very pervasive electromagnetic wave with controversial interactions are waves used in mobile communication networks. Electrical energy from these dental devices can travel down the lead wires and can induce ventricular or atrial fibrillation and reprogram the cardiac device. This study was conducted with the aim to check the effect of electromagnetic radiation mainly by 2G and 3G mobile network on electronic apex locator.

References: