INTRODUCTION

Accurate working length determination is a crucial factor that influences the outcome of root canal therapy.4 Maintaining the biological length of root canal system enhances optimal healing 2,3,4,8 A major controversy and subject of debate for decades was where to end root canal therapy, in clinical practice consensus is on major apical foramen as a more consistent anatomical factor.13Different methods have been employed to determine the location these included digital, tactile senses, average working length charts, The paper point technique. All these methods had limitations.14, 66 They have been reported to be unreliable and subject to marked intra-subject differences.14,66,67

Challenges remained associated with the limitations of two-dimensional radiographic length determination. Radiographs are subject to distortion, magnification, interpretation variability, and lack of three-dimensional representation. If the major foramen deviates in the lingual or buccal plane, it is difficult to locate its position using radiographs alone, even with multiplane angles.13.

Electronic apex locators were developed to overcome these shortcomings First electronic apex locator was in­troduced in 1918 by Custer et al. His ideas were revisited by Suzuki in 1942 (14) and Sunada in 1962 (15) electronic apex locator has made the assessment of working length more accurate and predictable (16). Root Zx (Jamurita Japan inc) is 3rd generation electronic apex locator it works on principle impedance ratio method that is significant increase in capacitance and consequent decrease in impedance at apical foramen and expressing it in terms of files position.18 The accuracy of these Root Zx(Jamurita Japan inc) apex locators both in vivo and ex vivo ranges from 85% to 94%.81,83,85

The effect of file type on accuracy of electronic apex locators is controversial.. Today many clinicians use both stainless-steel and nickel-titanium files during the treatment of a case. Given the widespread use of nickel-titanium files, a comparison of the accuracy in determining length with an apex locator using stainless-steel and nickel-titanium files seems clinically relevant. To bridge the gap of evidence, the purpose of this study was to determine if there is a measurable difference in accuracy of length determination when stainless-steel and nickel-titanium files are used.