Root Canal Configuration Of Permanent Mandibular First Molars Using Radiographic Tube Shift Technique On Dentistry Student Of University Of Sumatera Utara

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Introduction: Permanent mandibular first molars are the most commonly experienced treatment failure. Knowledge of root canal configuration needs to be known to establish the right diagnostics and successful root canal treatment. The aim of this study is to find out the root canal configuration of permanent mandibular first molar based on Vertucci classification using tube shift radiography technique among dental student of University of Sumatera Utara. **Materials and Methods:** This is an experimental with cross sectional approach. 36 students were selected by purposive sampling and data were collected from questionnaire and x-ray radiograph. **Results:** The result showed that 97.2% of permanent mandibular first molar have two roots and 2.8% have three roots. Variation of root canal configuration according to Vertucci on mesial root right region, type I 8.3%, type II 27.8%, type III 11.1%, type IV 50%, type II classification Gulabivala 2.8%, on left region type I 5.6%, type II 44.4%, type III 2.8%, type IV 44.4%, type II classification Gulabivala 2.8%. On distal root of first molar right region, type I 86.1%, type II 2.8%, type III 8.3%, type V 2.8%, on left region, type I 100%. **Conclusion(s):** Root canal configuration of mandibular first molar based on Vertucci classification at mesial roots of the right region, type I, II, III, IV, and type II classification Gulabivala , on left region we found type I, II, III, IV, and type II classification Gulabivala . On distal root of the right region, type I, II, III, and type V, on left region only type I.

KEYWORDS: tube shift technique, root canal, mandibular first molar