

Title: Ni-ti file is separated inside the root canal.

(File 이 부러졌어요.)

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Abstract

Compared to hand file, Ni-Ti file follows the curvature of the root more competently and causes less transportation or ledge during root canal shaping procedure.

However, Ni-Ti file also have problems, the Ni-Ti file separation.

The cause of Ni-Ti file separation can be explained in two mechanisms.

1. Torsional stress: Fracture occurring when part of the instrument is 'locked' inside the root canal while the instrument is still rotating.
2. Cyclic fatigue: Fracture due to repetitive flexing movement.

Inadequate coronal shaping causes file separation in the coronal 1/3 of the root canal. Therefore, this presentation will show how to remove the dentin shelf adequately with long shank round bur and how to handle the coronal 1/3 using either GGD or ProTaper S1.

Cross sectional area effects most of the mechanical properties of Ni-Ti files. Larger cross sectional area increases the fracture resistance of the instrument but has disadvantage in following root curvature. On the contrary, smaller cross sectional area increases flexibility of the instrument but is vulnerable to torsional stress.

This lecture also includes guideline in selecting appropriate instruments in difficult cases, such as calcified canal or curved canals, based on cross sectional area of the instrument.

Lastly, this lecture provides my personal tips on how to keep counting the number of Ni-Ti file use to limit the number of uses to decrease the chance of file separation.

Content

Mechanisms of Ni-Ti file separation

Ni-Ti file selection in various situation canals

Ni-Ti file counting method

CV

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