Clinical Investigation of the Methods for Removing Cast Posts
—Comparison of Standard and Improved Types of Post and Core Remover—

KONISHI Hidekazu
Ouki Dental Clinic

Abstract
Purpose: The removal of cast posts is difficult and involves risks (root fracture), and it is necessary to remove cast posts “speedily”, “surely” and “safely” (3S). Therefore, this study was developed from the past papers, and clinically investigated the methods of removing cast posts which might attain the 3S readily by comparing two kinds of post and core remover (PR, YDM).

Methods: The subjects were 39 teeth (out of 35 patients who visited Ouki Dental Clinic) which were cemented metal post and core (cast post), and the group in which cast posts were removed by standard-type PR was defined as Group RC, and the group in which cast posts were removed by improved-type PR was defined as Group RSC. Their cast posts were removed by one of the following methods. The tooth was grooved at two locations, one on the buccal side and the other on the lingual side, on the metal core margin by a carbide bar #1970 for FG, then the two tips of the PR were inserted into these locations and the cast post was slowly removed by the gentle clasp force of the PR. We evaluated the time taken to remove cast posts, the length of the post portion, the existence of a root fracture line by the coloring matter flooding test, probing pocket depth and so on.

Results: Almost all cast posts were removed within 5 minutes [Group RC: 18/18, Group RSC: 21/21 (unit: piece)]. The average time taken to remove cast posts was 103 ± 77 (Group RC), 99 ± 69 (Group RSC) (unit: second); the removal time in Group RSC was a little shorter than that in Group RC, and the removal time classified by PR was not significantly different (Mann-Whitney U test, p ≥ 0.05). The average length of the post portions was 5.9 ± 1.8 mm (Group RC) and 5.7 ± 1.6 mm (Group RSC); the post portions of removed cast posts were not significantly different (Mann-Whitney U test, p ≥ 0.05). Using a #1970 narrow carbide bar for FG might decrease tooth matter the least. Furthermore, using the PR for removing cast posts is unlikely to cause root fracture, spontaneous pain, percussion pain, periodontal pocket deepening or tooth mobility after removal. In particular, percussion pain, periodontal pockets (probing pocket depth) and tooth mobility more than one month after removing cast posts were significantly more stable compared with before removal (Wilcoxon signed rank test, p < 0.05).

Conclusion: These results indicated that cast posts might be removed speedily, surely and safely (3S). In addition, the improved-type PR could remove cast posts a little faster than the standard-type PR.

Key words: Cast post removal, Clinical investigation, Speedy, Sure and Safe (3S), Prevention of root fracture