

## Method of copper-calcium depophoresis as an alternative for complicated endodontic treatment

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### Introduction

Strongly curved root canals are considerable barrier for qualitative endodontic treatment. One of the serious complications during the treatment is a break of endodontic instrument in the root canal. These situations demand from a dentist the use of complicated and expensive endodontic techniques and special devices for the removal of broken parts from the root canal are often unsuccessful.

### Materials and methods

Method of depophoresis of copper-calcium hydrate allows an influence on root canals and system of micro-canal in teeth with impassable root canals. We carried out endodontic treatment of 12 patients (6 persons with pulpitis and 8 – with apical chronic periodontitis), who have complications during endodontic treatment – break of endodontic instruments in root canals. The treatment was conducted according to the traditional scheme of depophoresis: 3 visits with the interval of 7-14 days, altogether electric current amounts to 15 mA/min. Roentgenograms were taken in all patients before the treatment, 6 and 12 months after the treatment with the aim to localize the position of the broken instrument in root canal and the condition of peri-apical tissues.

### Results

All patients were not reported exacerbation of the inflammation during the procedure of depophoresis and in the periods between the visits. All patients with pulpitis showed absence of peri-apical changes after 6 and 12 months after depophoresis. The same results were reported in 5 (62,5 %) of patients with chronic apical periodontitis.

### Conclusion

Thus, the method of depophoresis of copper-calcium hydrate can be recommended for the successful endodontic treatment in case of broken instruments in root canals and the risk of tooth extraction, nevertheless further detail investigations are needed to achieve statistical data verification.