

Setting time of MTA

Q I have some difficulty in using MTA because of its slow setting time. How can I make the MTA set faster or regulate the setting time?

A MTA is used widely in endodontic treatment as a pulp capping material, root-end filling material, and perforation repair.¹ Although MTA has many favorable properties, long setting time is a clinical disadvantage. To overcome this problem many studies were performed. Hydration accelerators, such as citric acid, lactic acid, calcium chloride, and calcium lactate gluconate, were added during the mixing of MTA. In our previous study, hydration accelerators improved the setting time but the compressive strength decreased.² In the cytotoxicity test, citric acid and calcium lactate gluconate showed favorable biocompatibility, while calcium chloride showed lower cell viability.³ Therefore, addition of these kinds of hydration accelerators to MTA fastens the setting time of MTA.

Recently, fast setting MTA like materials, such as Biodentine, was introduced. Biodentine showed fast setting time and higher compressive strength compared to MTA. In addition, Biodentine showed good pulp response comparable to MTA. These kinds of material are also useful alternatives for MTA.⁴

From **Yun-Chan Hwang**
(Chonnam National University)

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References

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