

Our education of magnetic attachment to the dentist clinical residents.

S.Nakabayashi

Department of Partial Denture Prosthodontics, Nihon University School of dentistry

Introduction

Although we have educated a magnetic attachment during a student's lecture and hospital practice, the fact is that they who became dentist clinical residents do not understand and remember the features or use.

The magnetic attachment is device useful to clinical, but they may not notice the usefulness if they don't understand the correct form and method of magnetic attachment.

Moreover , it is thought that the magnetic attachment may not be applied as one of the treatment methods in the future.

Thus, we included practice of the magnetic attachment in the education of the partial denture of five days, since dentist clinical training system was introduced into dental school graduates 7years ago.

Then, we introduce the education contents and practice.

Objective

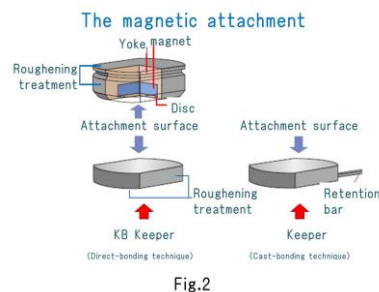
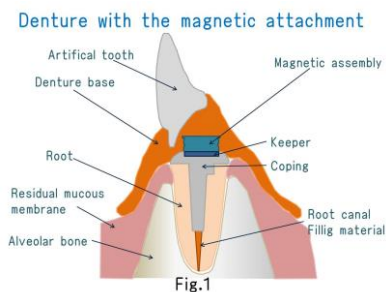
Our educational objective make it understand so that residents can apply a magnetic attachment to clinical correctly with simple practice which used the gnathic tooth model while having explained the feature, the indication, method and research result.

Therefore, we introduce the educational contents.

The content of an education and practice

1. A magnetic attachment is what?

First of all, since we want dentist clinical residents to have an imagery of a magnetic attachment, we teach how a magnetic attachment is generally applied using a scheme as shown in Fig.1, and explain the magnet assembly and keeper which constitute the magnetic attachment(Fig.2).



Next, a clinical example explains how the magnetic attachment is used by clinical(Fig.3). A magnetic attachment is the cause and turn of a trouble, if they cannot understand the feature and correct method including a prosthodontics planning, although it is an apparatus useful clinical(Fig.4).

Therefore, if it applies to clinical without their understanding a magnetic attachment well, we will advise that they cannot demonstrate the useful of a magnetic attachment.

For that reason, it is necessary to motivate of what of a magnetic attachment dentist residents should understand in future to dentist residents.

The case of clinical application of a magnetic attachment



Fig.3

Notice of an indication of a magnetic attachment!



Fig.4

2. Feature of magnetic attachment

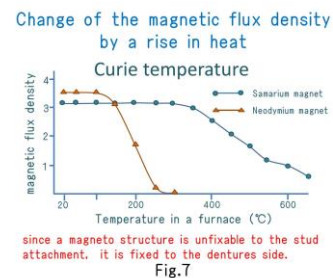
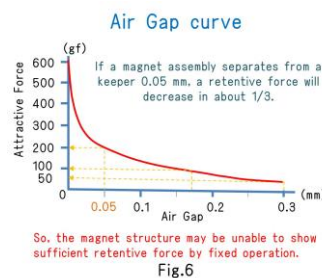
First, the feature of a magnetic attachment is that it is semipermanent retentive power, the power of absorption is perpendicularly demonstrated by the maximum, and the repositioning power of absorption acts (Fig.5).

However, it may be hard to remain in dentist clinical residents' reminiscence even if it teaches these three features schoolbook, and there are many questions from students or intern doctors why a magnetic assembly is not installed in the stud attachment side. it is a consider that we will not remain in dentist clinical residents' reminiscence even if it teaches these three features schoolbook.

The feature of a magnetic attachment

1. Semipermanent power of absorption (retentive force).
2. This shows the maximum power of absorption in the way of a vertical to an attachment surface.
3. The reposition by power of absorption

Fig.5



Thus, although a time is taken, we mind to educate containing the reason so that features may remain in their reminiscence.

The returning power of absorption which can be called important feature of a magnetic attachment requires explanation with an AirGap curve(Fig.6), and the Curie-temperature curve in a paramagnetic body shows the curve to which a magnetic flux density falls along with a rise in temperature(Fig.7). That is, since a ferromagnetic property is lost at the thermo of casting, we explain including a reason that a magnet assembly loses power of absorption.

As mentions above, when it expounds that the feature of a magnetic attachment is associated with a research result, a scheme or a clinical case, students and dentist clinical residents have turned to the convinced countenance.

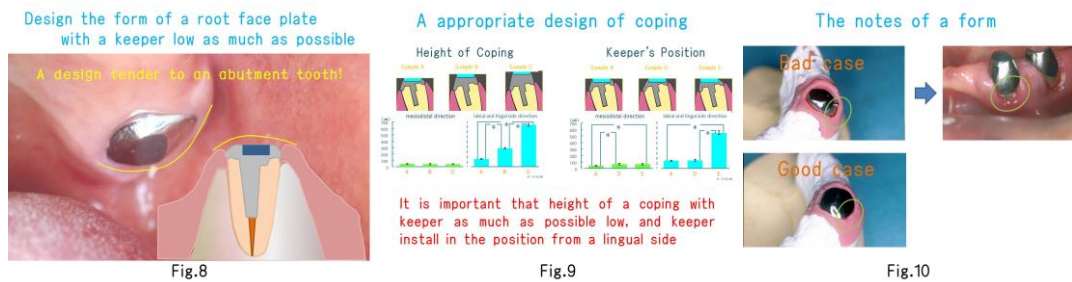
And, we grab their hart and advance to the next description.

3. Form and classification of magnetic attachment

An appropriate design of coping is often explained that the height of a metal cap is as much as possible low and it is important that a keeper installs in a position near lingual-side(Fig.8).

Then, we verified the influence on tooth root by the difference in height and form of coping as shown in Fig. 9. the result of experiment suggested that it is most little influence to tooth root

that the form of a metal cap is made low as much as possible and a keeper's position is arranged



near lingual-side.

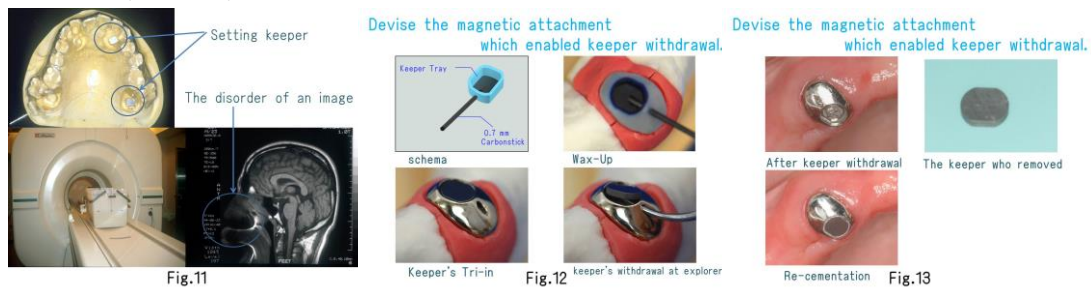
Moreover, the coping needs to be a form in line with a marginal gingiva. otherwise, a marginal gingiva will cause a chronic inflammation and abutment teeth turn to poor prognosis(Fig.10).

They notice for the first time that the significance of a form is important.

4. Relation between magnetic attachment and MRI(magnetic resonance image)

In MRI photography, a keeper's artifact has a provide probability in an interpretation of radiogram in an influence greatly, and the size is about 4-8 cm by the SE method(Fig.11).

But, the MRI image diagnosis of a carcinoma of oral cavity is considered to be an important in a dentistry territory.

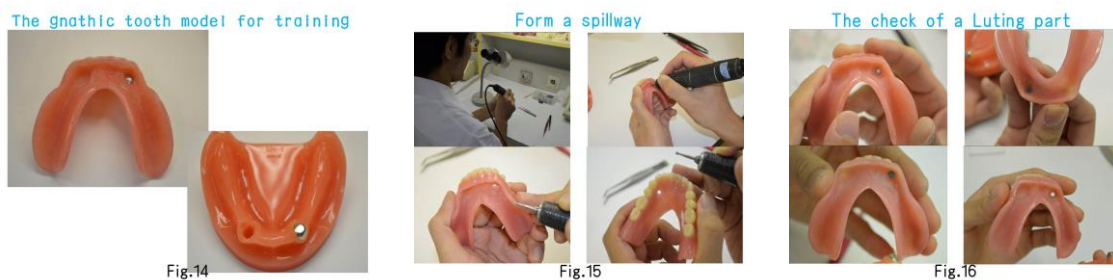


Then, we devised the magnetic attachment which made the keeper of the cause of an artifact the withdrawal possible(Fig.12,13).

5. Practice of magnetic attachment

As a resource of practice, the gnathic tooth model (Fig. 14) used for practice is a mandibular model to which the right-and-left dentes canini remains. And the magnetic attachment is using D600 which is a "GIGAUSS" D type made from GC.

Although the feature of the magnetic attachment, etc. were explained before training, they will ask a question after training and will deepen a understanding(Fig.15,16).



Conclusions

We made the dentist resident understand the magnetic attachment obtained from the content of a study, the result, and they experienced the difficulty of the operation of a magnetic

attachment by training, and we consider that they apply a magnetic attachment to clinical and to contribute to improvement in a patient's QOL.

Therefore, we share with staffs the knowledge acquired by research of the magnetic attachment, and are educating it by all staffs.

Although it is an introduction of a part of educational content this time, we relate with a magnetic attachment, a scheme, a clinical example, a research result, etc., and think it important for an education to explain.