

Study on the usage status of dental magnetic attachments after the introduction of the Japan National Insurance

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I. Introduction

Dental magnetic attachments have been used as aesthetic and protective abutments for removable partial dentures (RPDs)¹. These attachments were approved for use by the Japan National Insurance in September 2022, and their clinical usage may change. Therefore, we investigated the use of the magnetic attachments between September 2022 and August 2023.

II. Objective

Clarify the use of magnetic attachments after the introduction of insurance.

III. Materials and Methods

Survey items:

- 1) Number of cases
- 2) Insurance/self-payment
- 3) Coping materials and installation methods
- 4) Denture morphology; overdenture or RPD, metal base or resin base
- 5) Occlusal support (Eichner classifications)
- 6) Reasons for choosing magnetic attachments
- 7) Patient's evaluation of denture
- 8) Dentist's evaluation of denture fabrication

V. Results

1) Number of cases

Seventy-one magnetic dentures were used in 67 patients.

The patients' average age was 73.5 years, range, 17–98 years) (Fig.1).

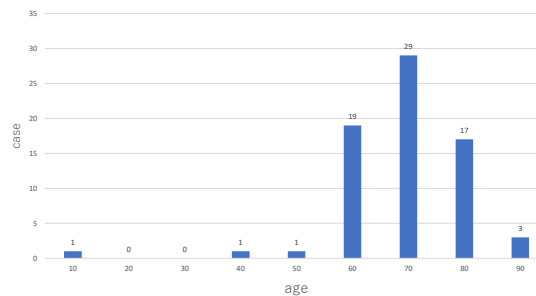


Fig1. Applicable age for magnetic attachments

2) Insurance/self- payment

Forty for magnetic attachments were covered by public insurance, and 83 were fabricated by self-payment (including five implants).

The average number of magnetic attachments used per denture was 1.79 (Fig.2)

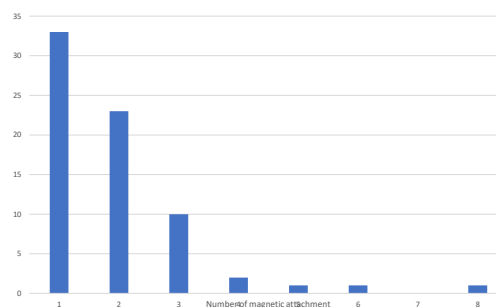


Fig2. Number of magnetic attachments for a denture

3) Materials and installation methods

Coing materials; gold alloy 37, Au-Ag-Pd alloy 90.

Housing for the installation of magnetic assemblies; resin housing 68, metal housing 19, and not

used 44

Keeper installation; direct bonding 86, welding 41

4) Denture morphology

Overdentures similar to complete dentures; 31, RPDs with clasps; 40

5) Eichner classifications

A2; 1, A3; 1, B2; 6, B3; 12, B4; 25, C1; 12, C2; 14 (Fig 3).

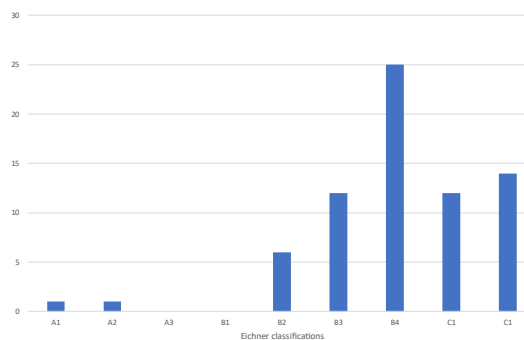
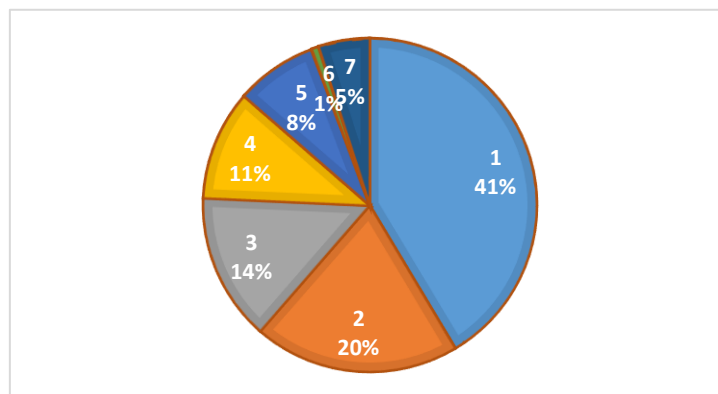


Fig 3. Eichner classification of the patients

6) Reasons for choosing magnetic attachments (multiple answers were available)



1. Poor crown-root ratio; 58
2. Esthetics; 28
3. Rebuild; 20
4. Insufficient occlusal support; 15
5. Cost; 11
6. Transition from conus crown 1
7. Others; 7

7) Patient evaluation of dentures

Good; 57, fair; 13, poor; 1

8) Evaluation of denture fabrication by dentists

Easy; 14, fair; 47, difficult; 9

IV. Discussion

1) Number of cases

In this study, 71 magnetic dentures were used. The age at application was mostly ≥ 60 years, confirming that magnetic attachments are often used in elderly patients.

2) Insurance/self-payment

Even after the introduction of insurance, the number of cases covered by insurance remained at approximately 50% of self-payment cases. However, since coping for self-payment cases occurred before the introduction of insurance, the ratio of insured cases may increase eventually.

The number of magnetic attachments used per denture was 1–3 (average; 1.92), with a relatively small number being used.

3) Materials and installation methods

The Au-Ag-Pd alloy was used more frequently than the gold alloy for coping in public health and self-payment cases. In the installation of magnetic structures, resin housings were used in many cases, but approximately 50% of the cases used no housing.

4) Denture morphology

There were slightly more partial dentures than overdentures.

5) Eichner classifications

With a few exceptions, magnetic dentures were applied to Eicher B2–C2 cases, especially after B4 cases with loss of occlusal support in the molars.

6) Reason for choosing magnetic attachments.

The reasons for the selection of magnetic attachments tended to be poor crown-root ratio and lack of occlusal support, and they tended to be used in cases with poor abutment tooth conditions. The esthetics and cost were less than initially expected compared with the abutment tooth conditions.

7) Patient evaluation of dentures

Good and fair scores were the most common, with only one case of failure.

8) Dentist evaluation of denture fabrication

Most respondents answered that it was easy or fair, while others answered that it was difficult. Because it was assumed that most practitioners in this survey were accustomed to

using magnetic attachments, general practitioners likely find it more difficult to use magnetic attachments.

V. Conclusion

Presently, the insurance coverage for magnetic attachments is only approximately 50% that for self-payment attachments.

Magnetic attachments are often used for a small number of remaining teeth (1–3 teeth) with poor abutments in elderly patients with insufficient occlusal support because they can reduce harmful lateral forces on abutment teeth, which may be useful for long-term tooth preservation.

References

1. Minoru Ai, Yuh-Yuan Shiau: New Magnetic Applications in Clinical Dentistry, Quintessence Publishing Co., Ltd, Tokyo, 2004.

Acknowledgments

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