

Launch of the AMS-MOH

Management of Edentulism with Dental Implants

6 October 2012, Saturday

Connection of Dental Implants to Natural Teeth

Dominic Leung

Organized by the AMS-MOH Management of Edentulism with Dental Implants Clinical Practice Guidelines Workgroup
under the auspices of Ministry of Health Singapore

Mechanism of implant and tooth support

- Ericsson I, Lekholm U, Branemark P I, Lindhe J, 1986
- Sullivan D Y , 1986
- Babbush C A, Kirsch A, Mentag, Hill B, 1987
- Reider C E, 1990
- Astrand J, Astrand P, Ahlen K *et al*, 1992
- Kay H, 1993

Increase failures when connected to tooth

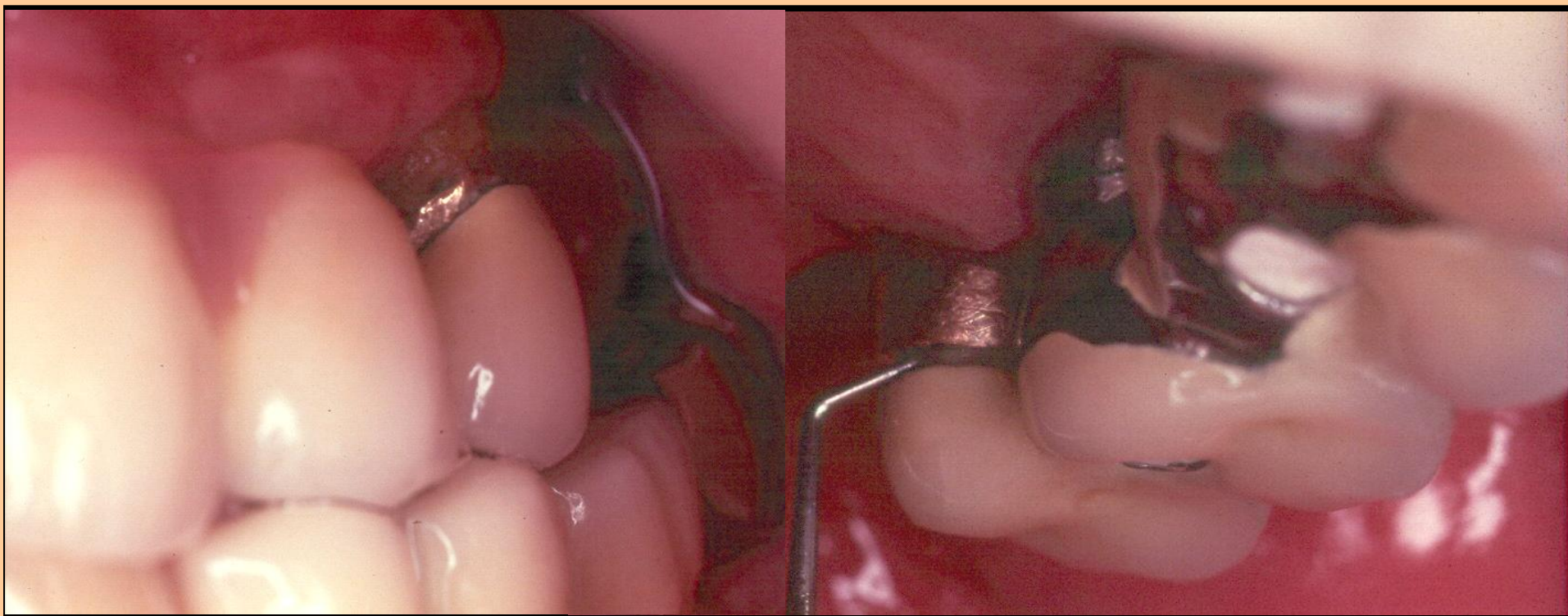
- Naert I E, Duyck J A, Hosny M M *et al*, 2001
- Naert I E, Duyck J A, Hosny M M, Van Steenberghe D, 2001
- Block M S, Lirette D, Gardiner D *et al*, 2002
- Bragger U, Karoussis I, Persson R *et al*, 2005

Most common design:

Tooth to implant connection with attachment placed between the pontic and the tooth







Connecting implants to teeth

W. Chee and S. Jivraj

British Dental Journal (2006); 201, 629-632

- ❖ Implants and teeth have differential mobility and support.
- ❖ Fixed prostheses supported by implants and teeth suffer more implant failure.
- ❖ When implants and teeth are connected there is a phenomenon of tooth intrusion.
- ❖ An understanding of these points will aid in treatment planning.

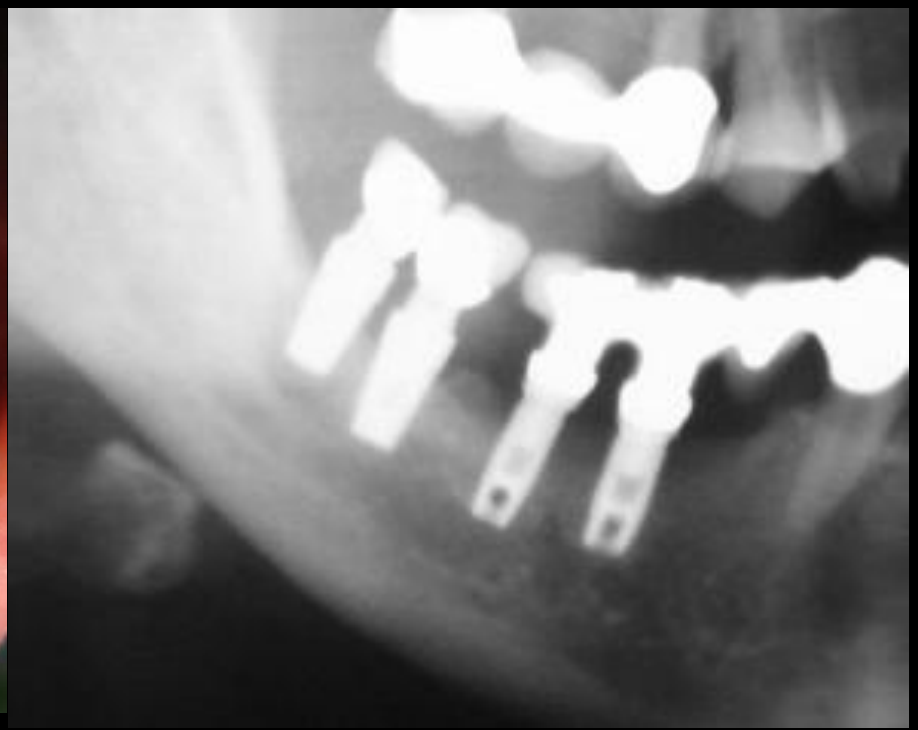


tooth to implant connection
with attachment placed
between the implant
supported restoration and
pontic.



implants to teeth with connection using a deep removable partial denture-type rest with the rest seat on the implant supported restoration

- Chee W



Retrospective evaluation of complete-arch fixed partial dentures connecting teeth and implant abutments in patients with normal and reduced periodontal support.

Cordaro L; Ercoli C; Rossini C; Torsello F; Feng C
Section of Periodontics and Implant Dentistry, Eastman Dental
Hospital, University of Rochester Eastman Dental Center,
Rochester, NY, USA.

J Prosthet Dent. 2005; 94(4):313-20

Survival and complication rates of combined tooth-implant-supported fixed partial dentures.

Nickenig HJ; SchÄ¶fer C; Spiekermann H

Department of Prosthodontics, School of Dental Medicine, University of Aachen, Pauwelsstrasse 30, G-52074 Aachen, Germany.

[Clin Oral Implants Res. 2006; 17\(5\):506-11](#)

A systematic review of the survival and complication rates of fixed partial dentures (FPDs) after an observation period of at least 5 years. II. Combined tooth--implant-supported FPDs.

Lang NP; Pjetursson BE; Tan K; BrÄgger U; Egger M; Zwahlen M
School of Dental Medicine, University of Berne, Berne, Switzerland.

Clin Oral Implants Res. 2004; 15(6):643-53

Prof. Gisbert Krekeler
of the Periodontology department in
Freiburg University:

there are three exceptions to
connecting implant to natural teeth



Exception 1

- ✓ In order to avoid extraction of a key tooth in borderline cases, we can fix it to a series of implants.
- ✓ This can only be done if certain criteria are met e.g. number, length and diameter of the implants and bone quality.

by Prof. Gisbert Krekeler

Exception 2

- ✓ In order to retain the natural feeling of chewing, the remaining teeth should be included in the superstructure of the implants to get a feedback system that obtains it by PDL.

by Prof. Gisbert Krekeler

Exception 3

- ✓ Where for anatomical reasons, the implant cannot stand alone i.e. the number, length or diameter of the implants are insufficient. In those cases the natural teeth help to support them. This connection is a **compromised** treatment method.

by Prof. Gisbert Krekeler



2002

2003

2002





2005

2009



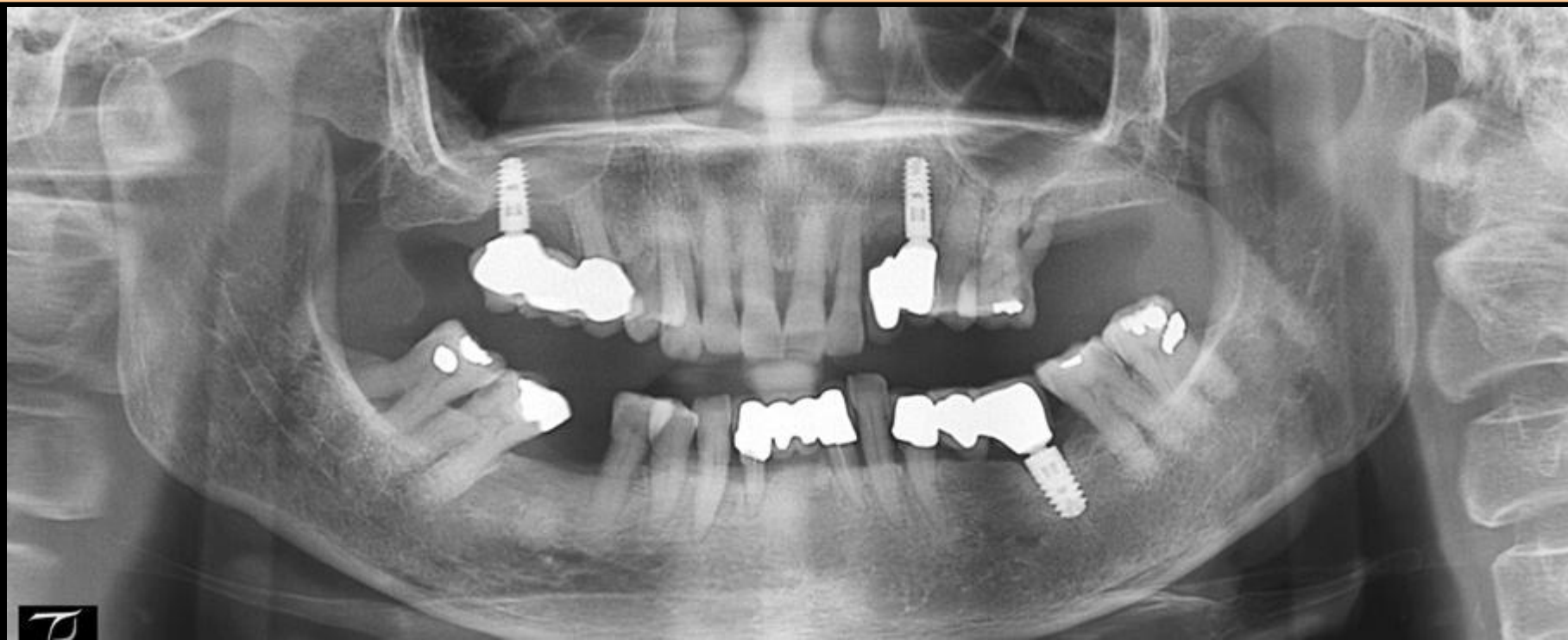
2009



2009

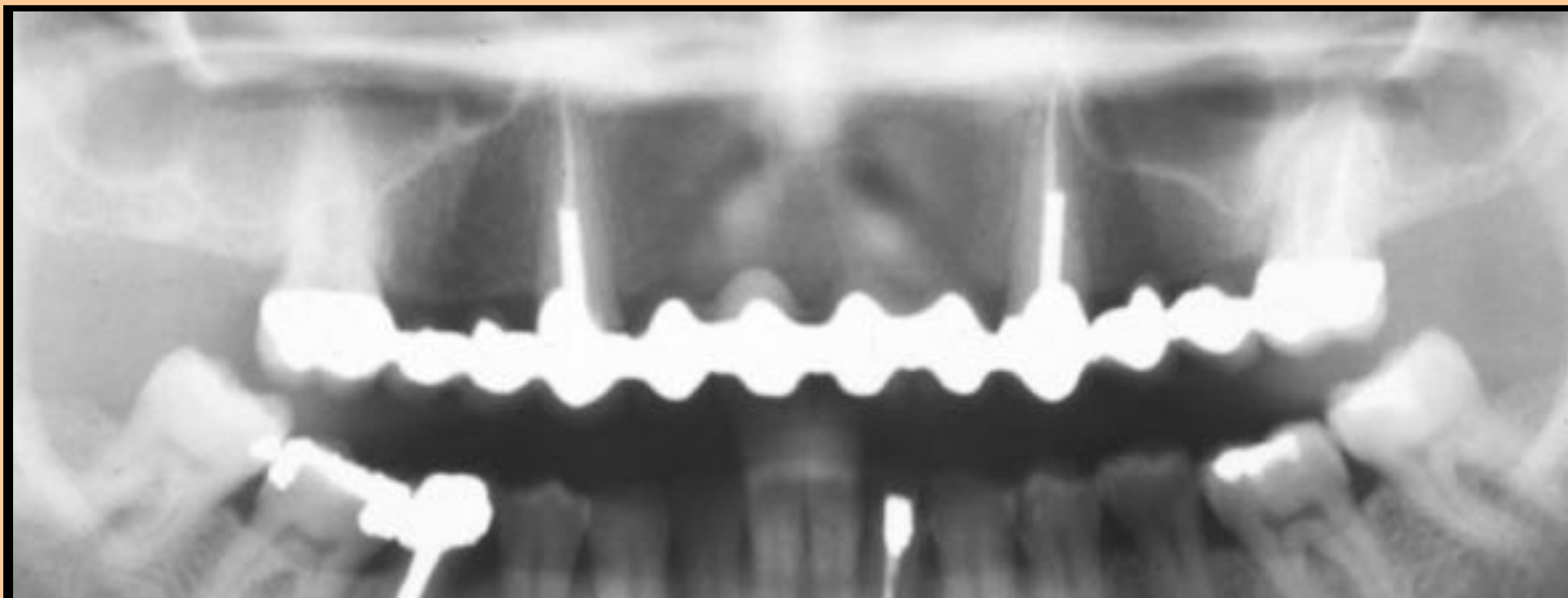


2012



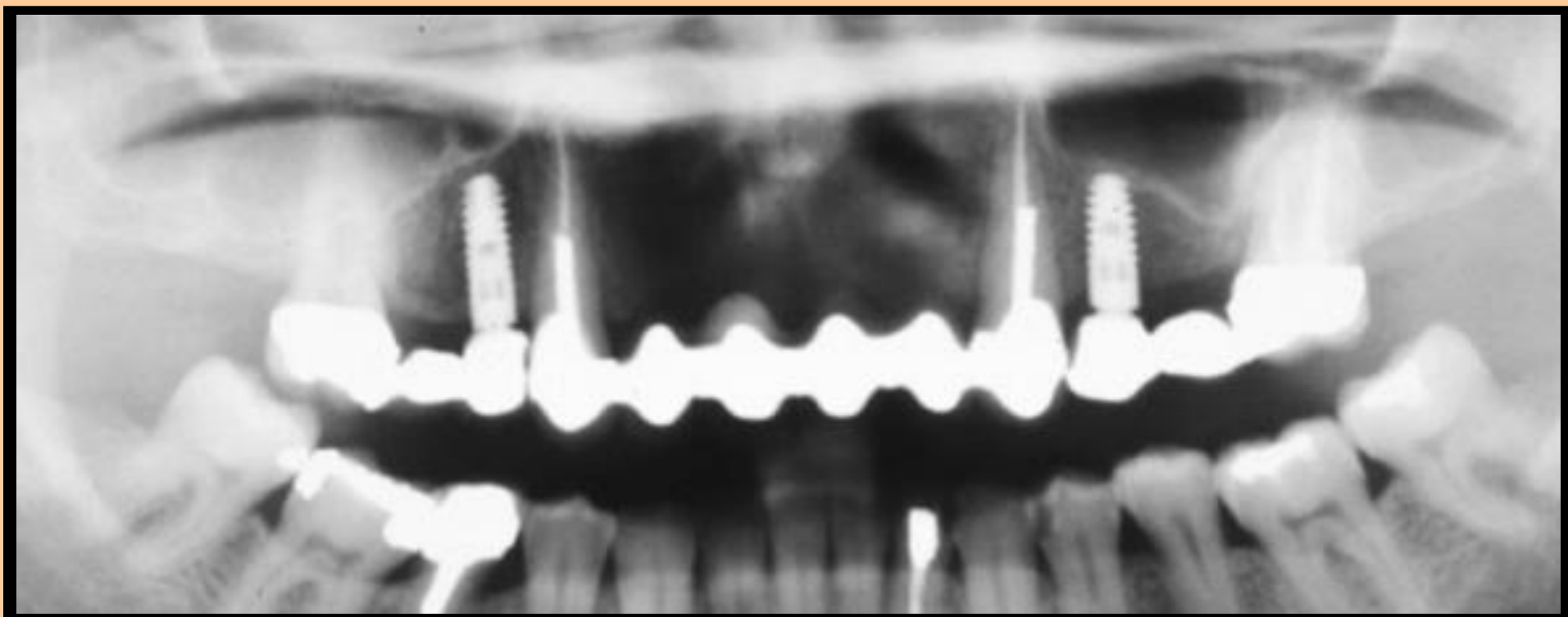


2002





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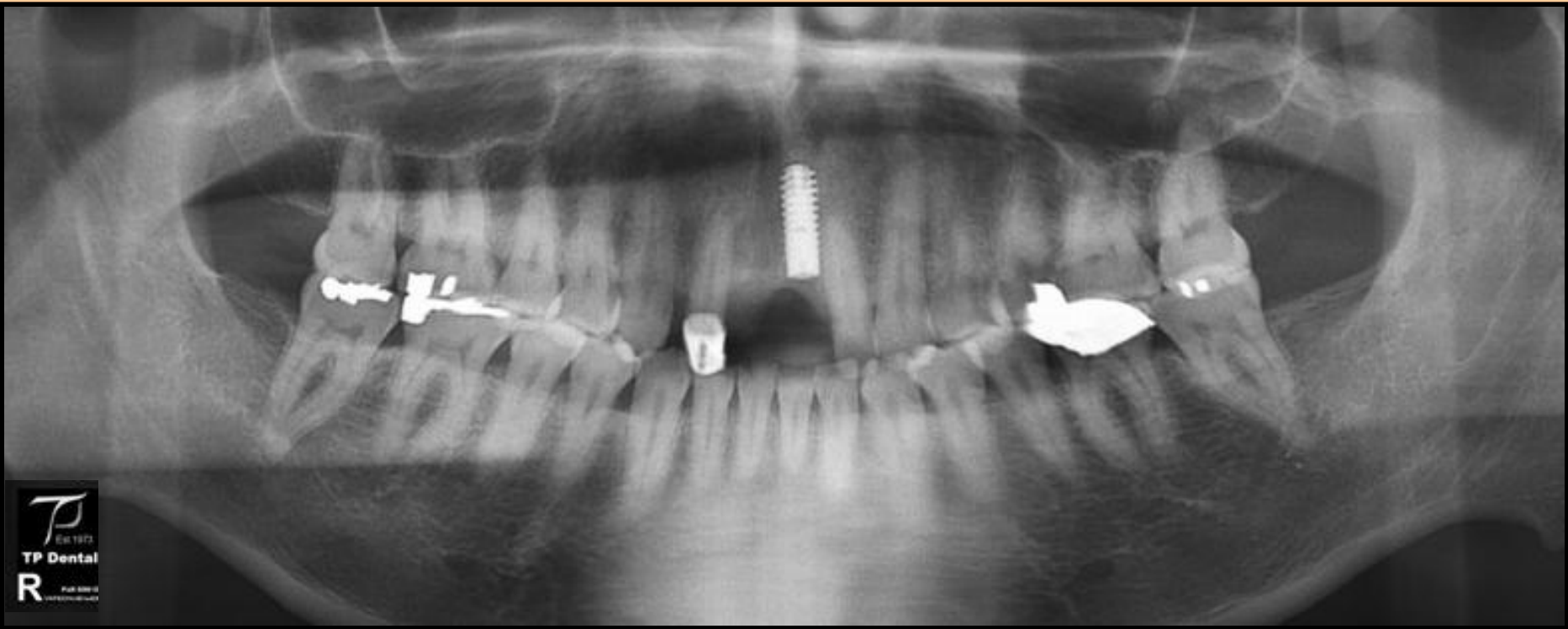


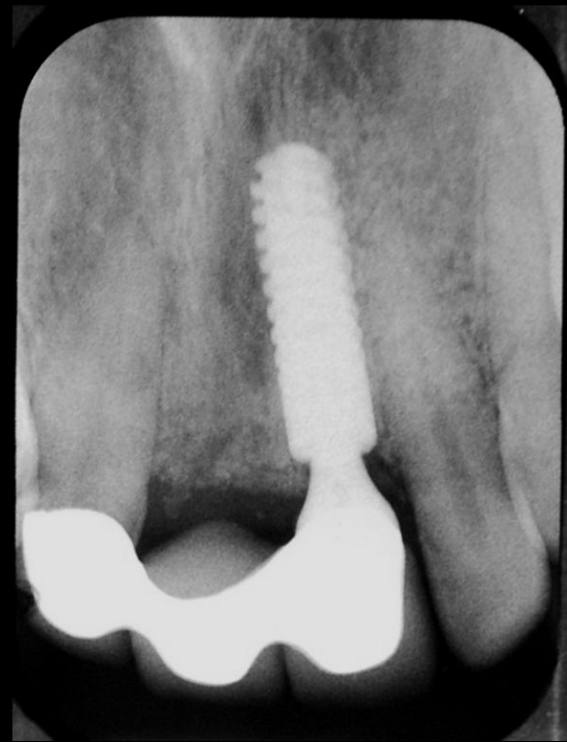
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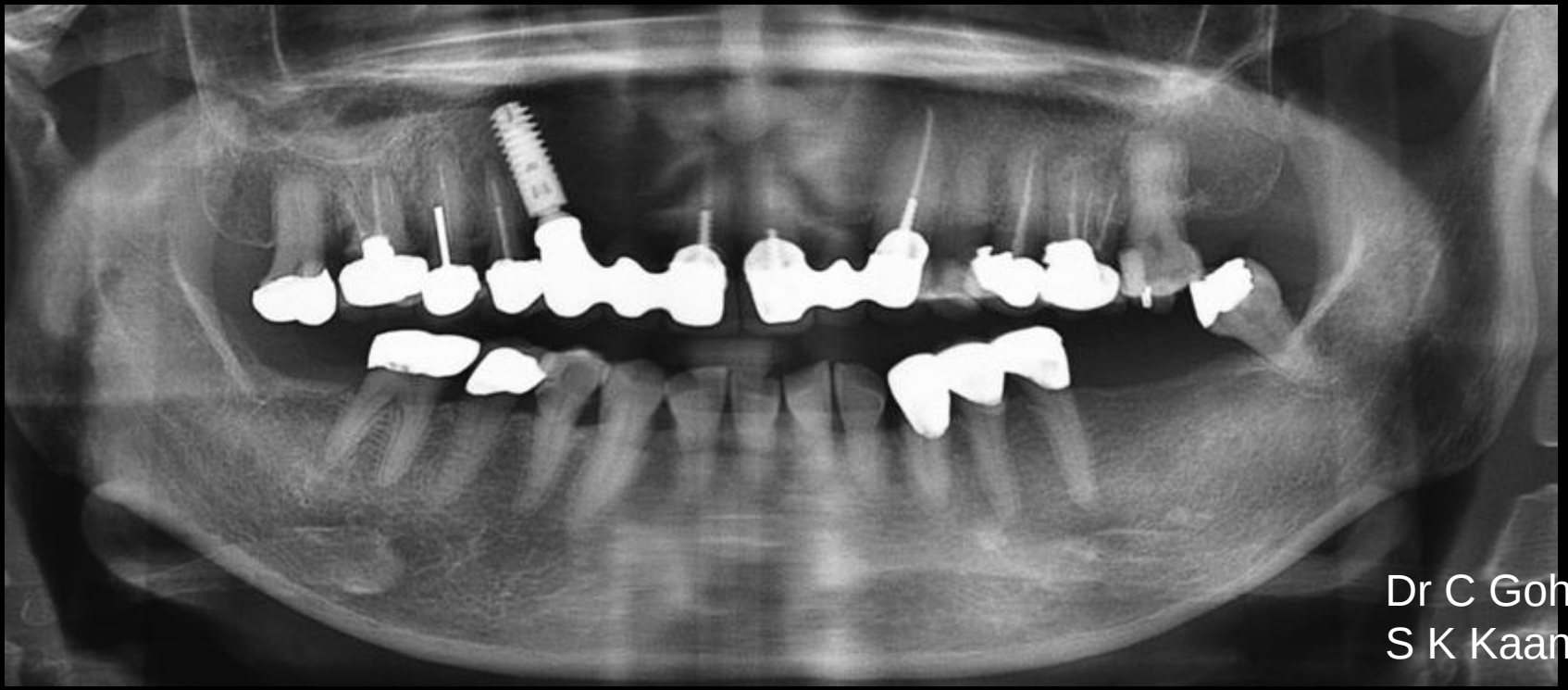
Dr C M Lee





Dr C M Lee





Dr C Goh &
S K Kaan

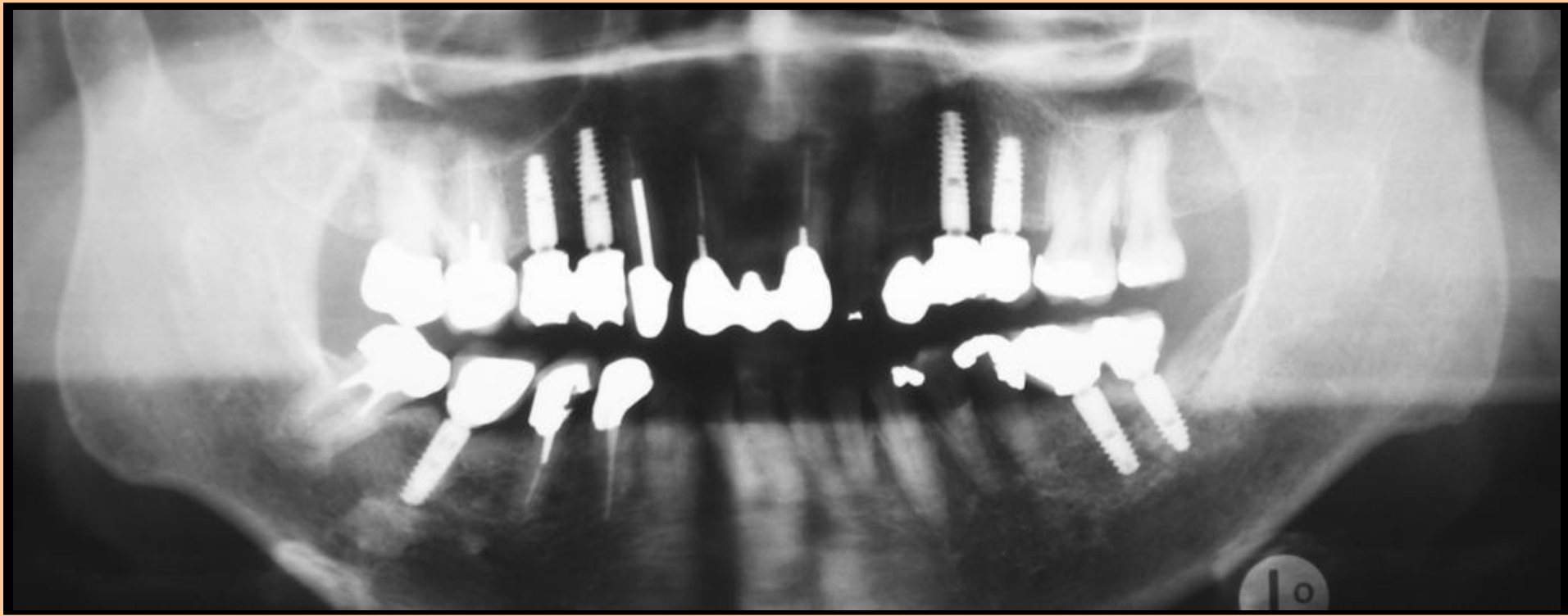


Dr S K Kaan

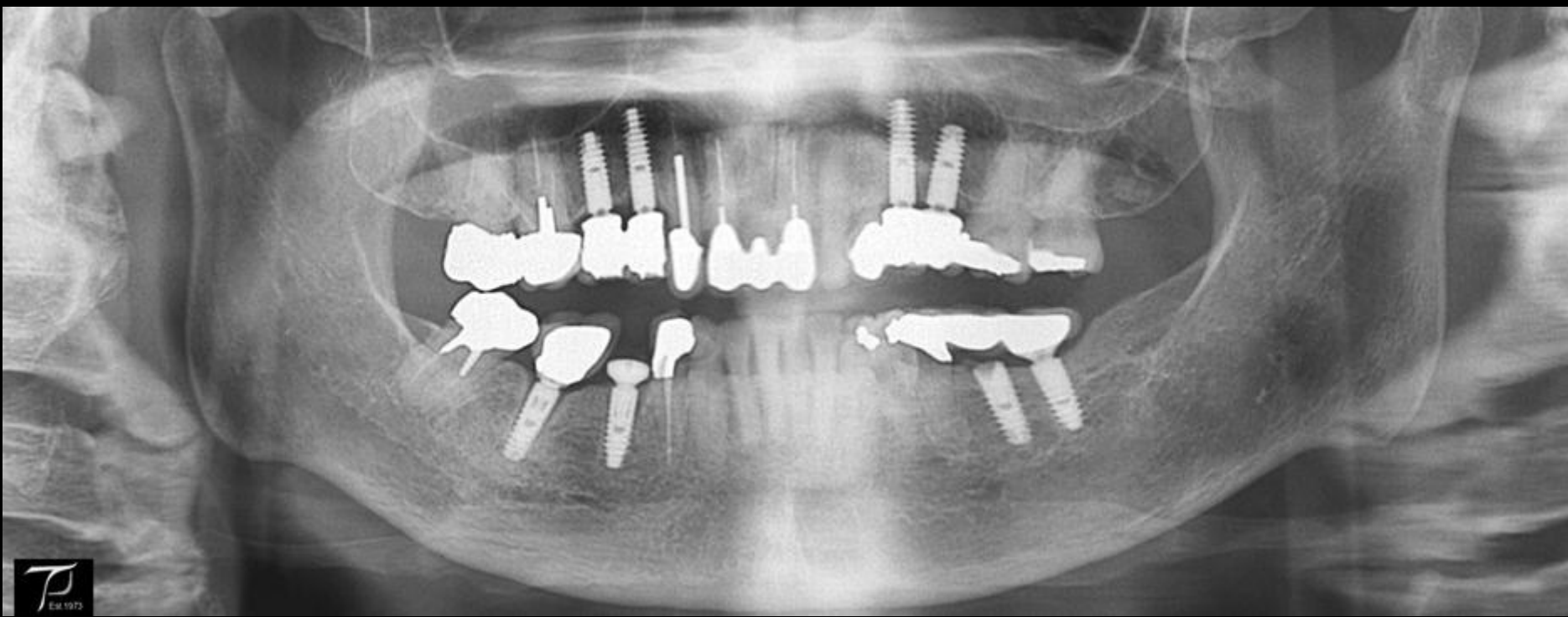




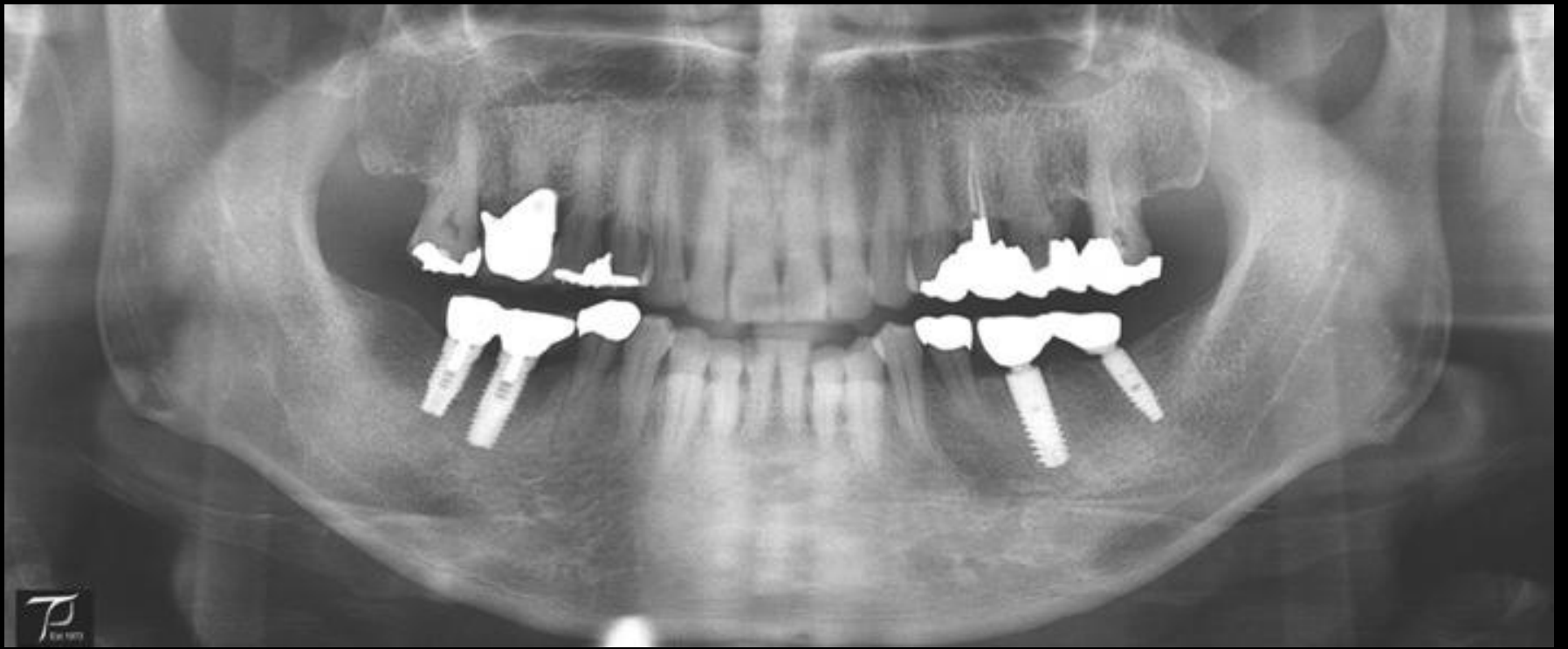






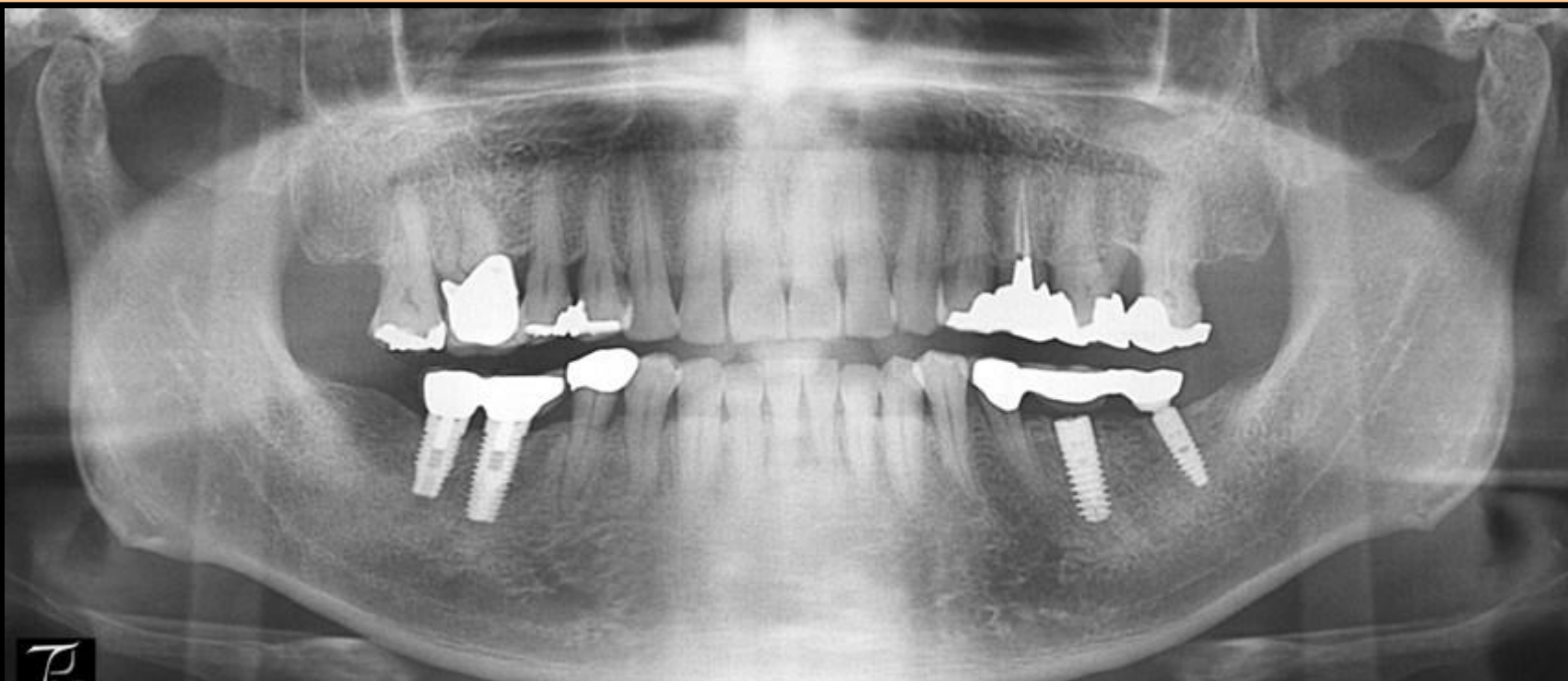


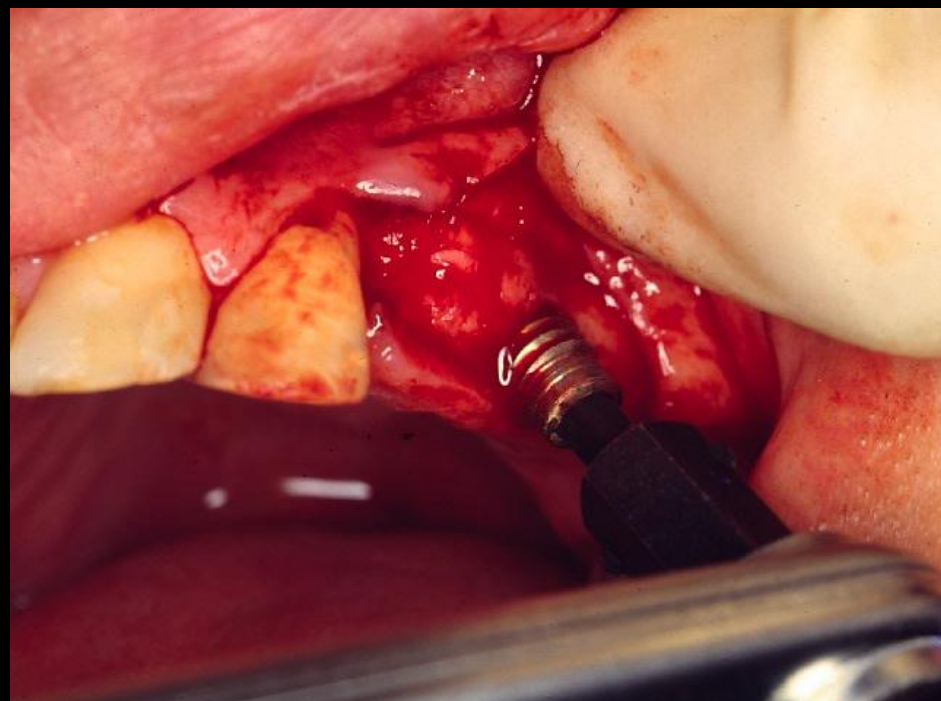










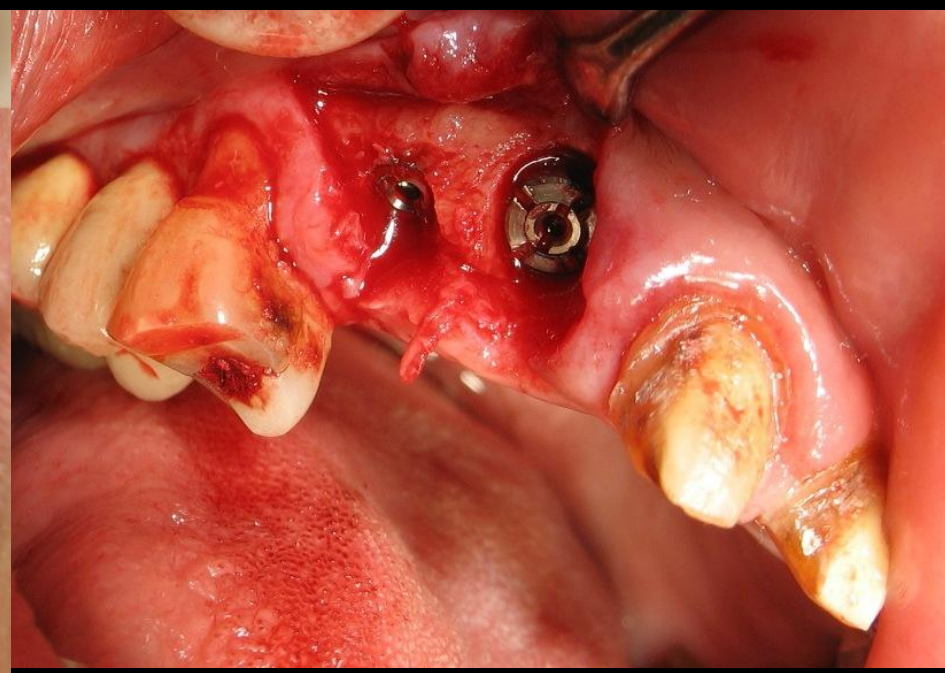


1985



1983 1985 2007







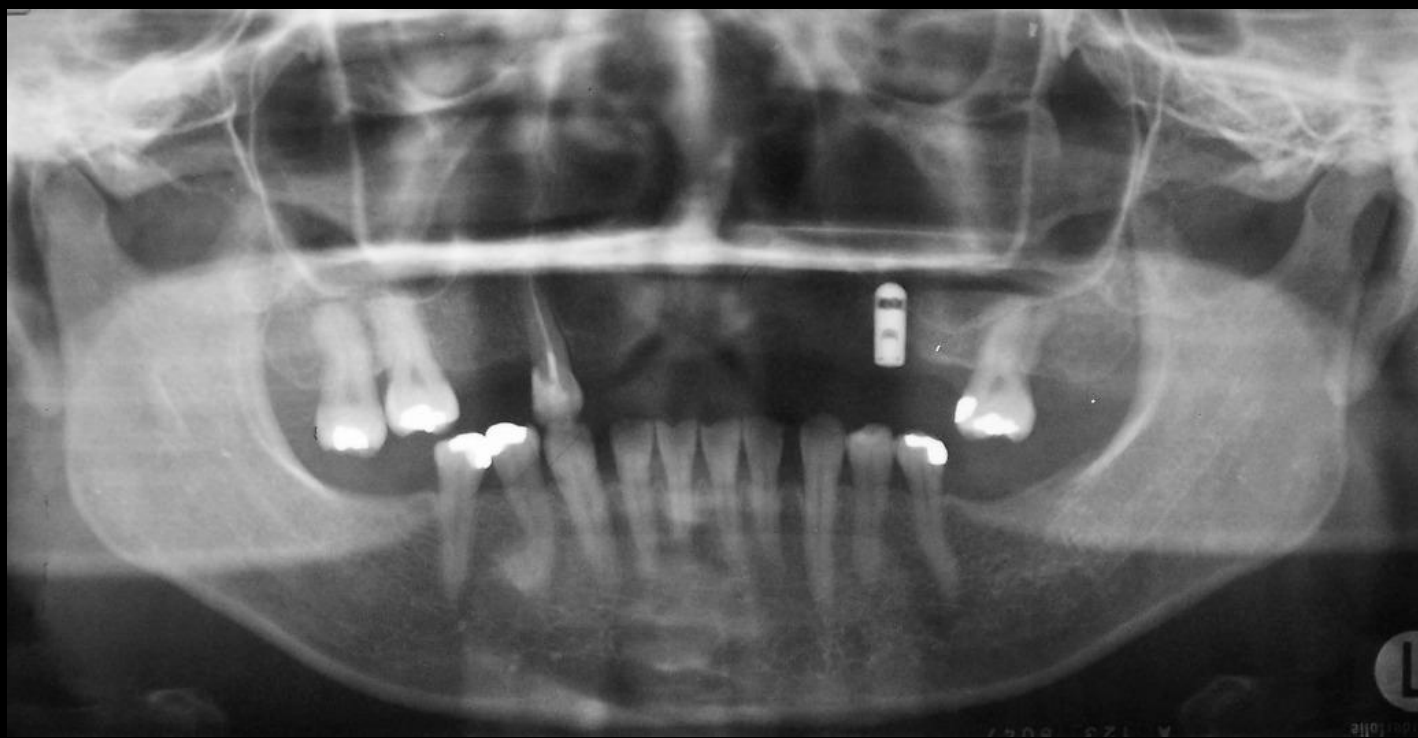


2009

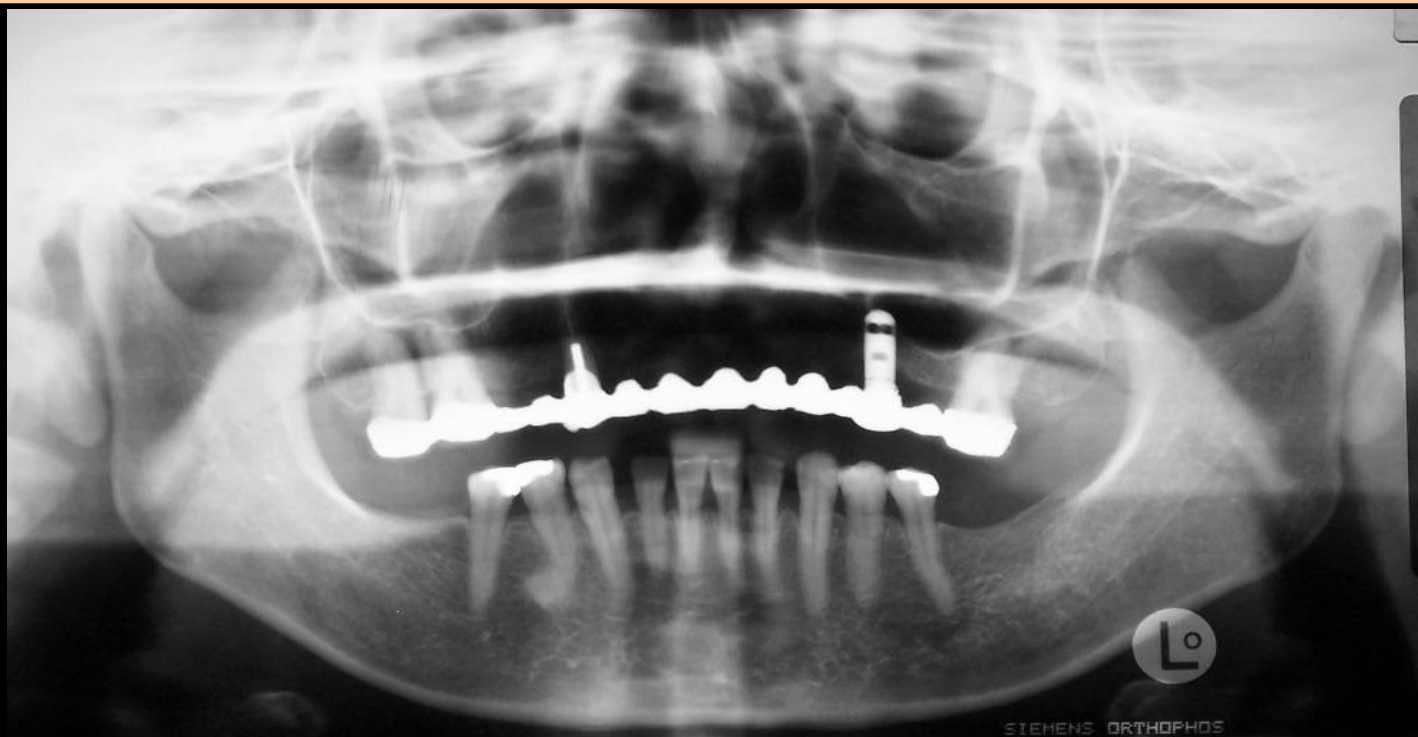




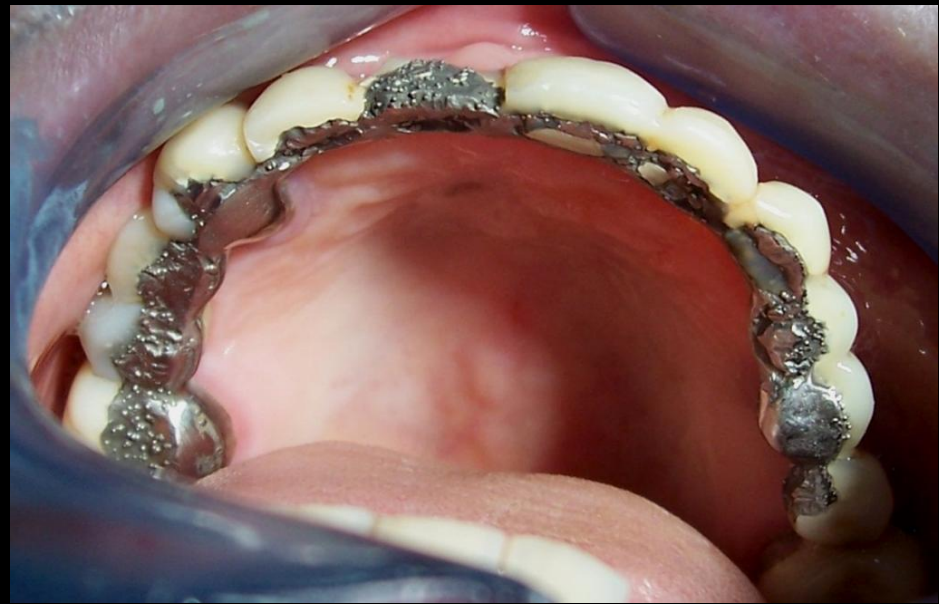
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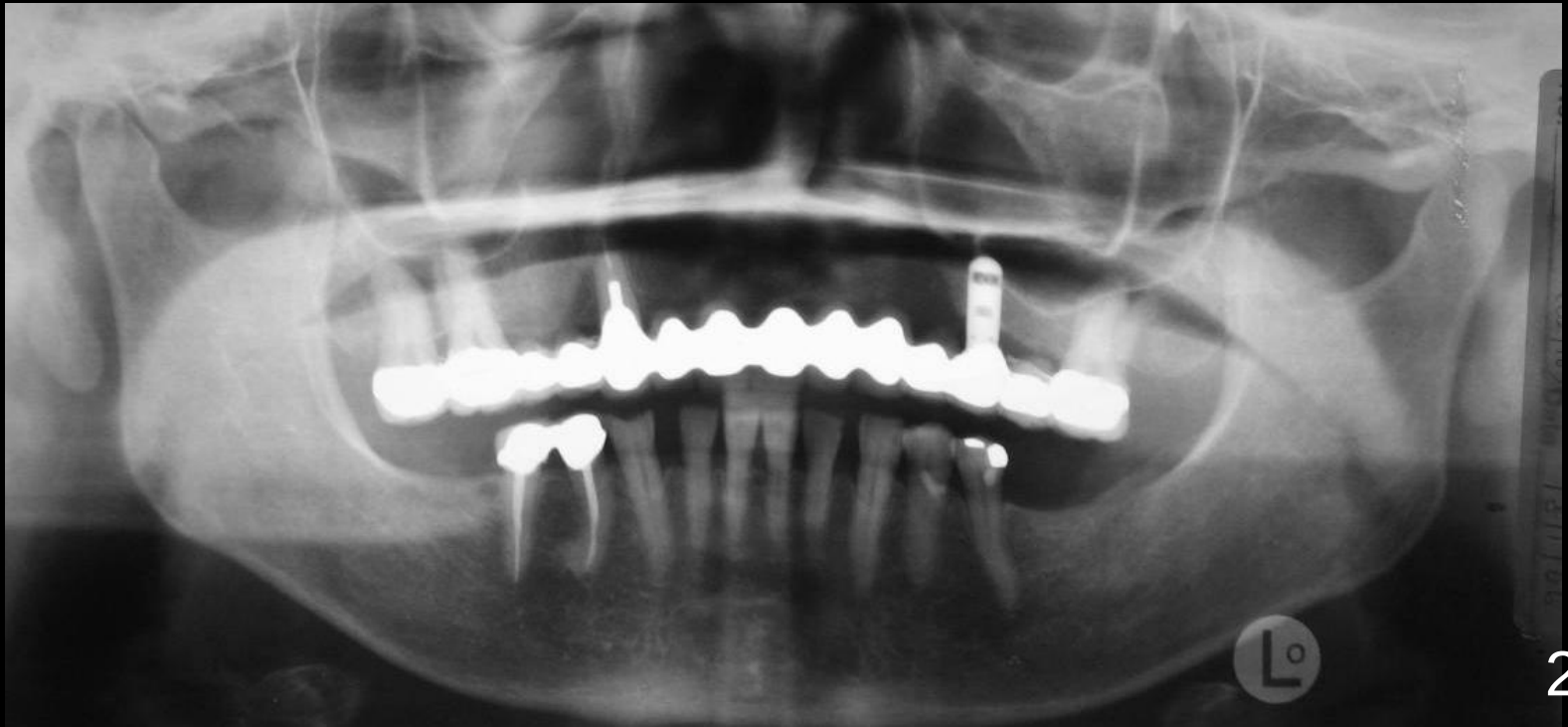


2005

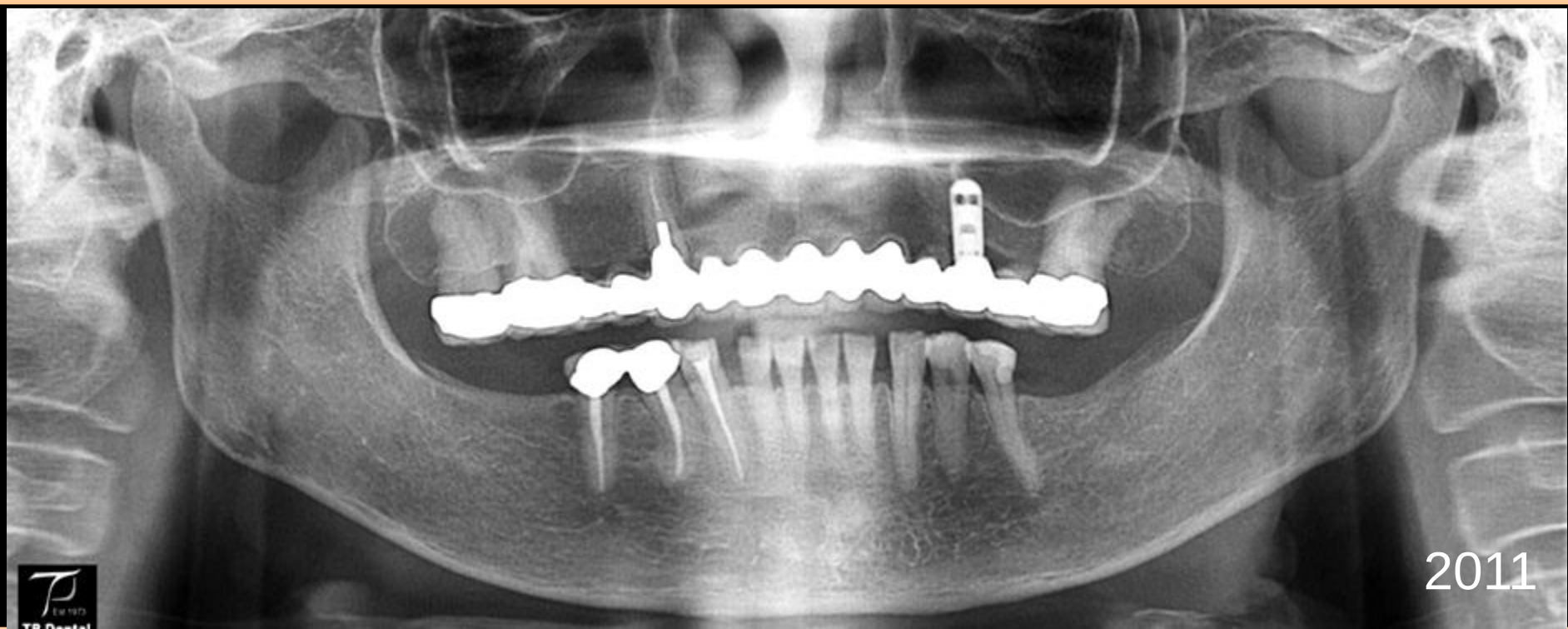








2006



Clinical Practice Guidelines

11. Connection of Dental Implants to Natural Teeth

- ❖ implant-implant connection wherever possible
- ❖ rigid implant-tooth connection is recommended in indicated situations, but
- ❖ more biological and mechanical complications are expected in the longer term

Thank You



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