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Cumulative interceptive supportive therapy (CIST) システムにてインプラントメンテナンスを行った1症例

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A case report using cumulative interceptive supportive therapy (CIST) to maintain implants O WATANABE T1,2,3), WATANABE E2), ISHIZAKA A2), ASAI S3), SHIMIZU H2) Department of Anatomy, Kanagawa Dental College1), Kanto-Koshinetsu Branch2), Japan Institute for Advanced Dentistry3)



Purpose: World-wide the average life span is increasing and, equally, implant treatment is being conducted as an alternative apparatus for missing teeth. Implants have been reported to have a high survival rate or success rate. However, the optimum method for ultra-long term maintenance system to keep implants in good condition over 30 years should be discussed.

Life expectancy in each decade

Decade	Male (Years)	Female (Years)			
(Years)	From Year 2011				
20	59.93	66.35			
30	50.28	56.56 46.84 37.32 28.12			
40	40.69				
50	31.39				
60	22.70				
70	14.93	19.31			
80	8.39	11.36			
90	4.14	5.46			

Complications of Implant and its superstructure in our patients

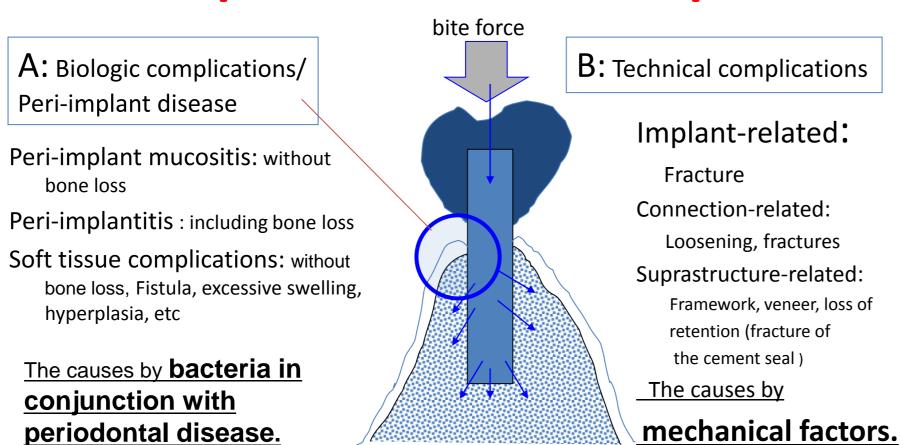
Duration: for 15 years from 1983 to 2003

No. of patients: 400 No. of implants: 974 No. of superstructures: 542

No. of complications: 155(28.6%/542)

Type A: Biological c. 111(71.6%)

Type B: Mechanical c. 44 (28.4%)



70% of implant complications were Type B; Biological c.

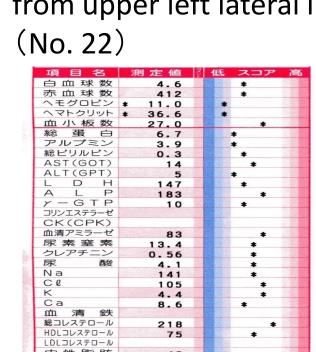
Peri-implant lesions have also been found to be a common clinical entity 9 to 14 years after implant placement. If patients have a history of periodontal disease, they are at higher risk to develop peri-implantitis and to undergo additional treatment.

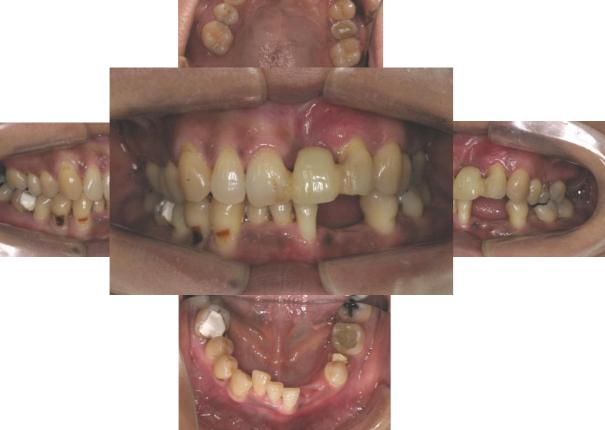
A maintenance system called cumulative interceptive supportive therapy (CIST) has been proposed by Prof. Lang (2000). In this presentation, a clinical case using CIST system to maintain implants and its clinical usefulness will be reported.

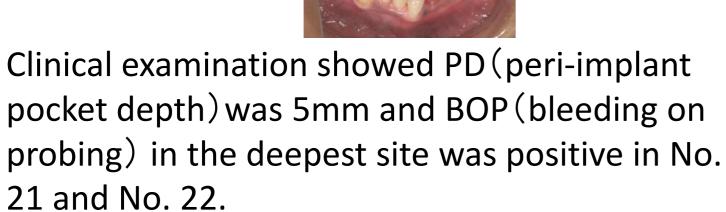


A thirty nine-year old female, 158cm, 46Kg on April 27, 2009.

Chief complaint; bleeding from upper left lateral incisor (No. 22)





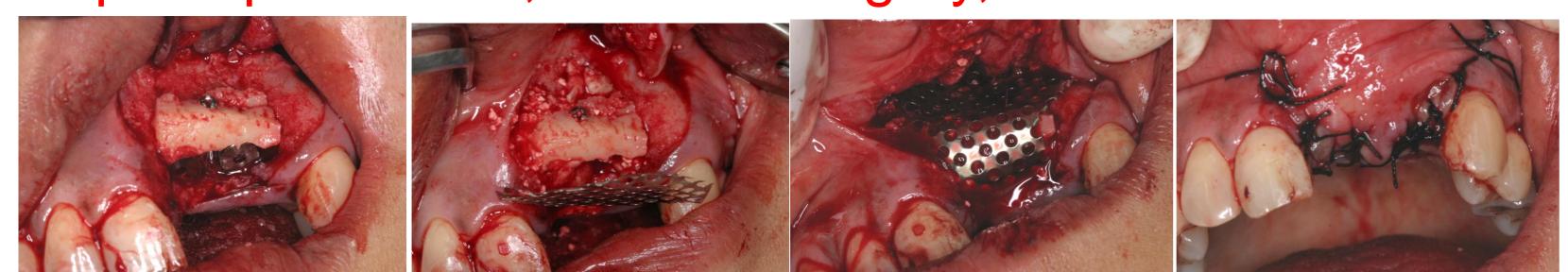




After tooth extraction of No. 21

PD, BOP and Periotest value at the first visit

Implant placement, Second surgery, Final restoration



Under IV sedation, rough surface titanium implants were placed immediately after the tooth extraction and simultaneous bone augmentation on June 3, 2009.



A second-stage surgery was performed 6 months later and the superstructures were set on December 2009.





Provisional and final restorations on Feb. 2011

Maintenance and Recall:

Protocol A: Initially after implant treatment, daily care was carried out by patient. SRP and PMTC was performed monthly by dental hygienist since the first recall.

12 months: Protocol D (PPD:5mm, PI:+, BOP:+, BL:2mm)



Pus discharge and slight bone loss was observed in No.22 12 months later. in 2012. Cleaning of pocket using antiseptic liquid (0.2%) chlorhexidine digluconate) was carried out every

day at home.

菌数(対数値) 菌数(実数値) 主な口腔内総細菌 安心 少し注意 注意 3.7 未満 5,000 未満 参考値 0.000 5,000 未満 参考値 0.00 9 ☆ P. gingivalis ☆ T. forsythensis* ☆ T. denticola 3.9 F. nucleatum 測定方法: ★ PCR-Invader法 ☆ Direct-Invader法

Biological examination

using PCR-Invader method

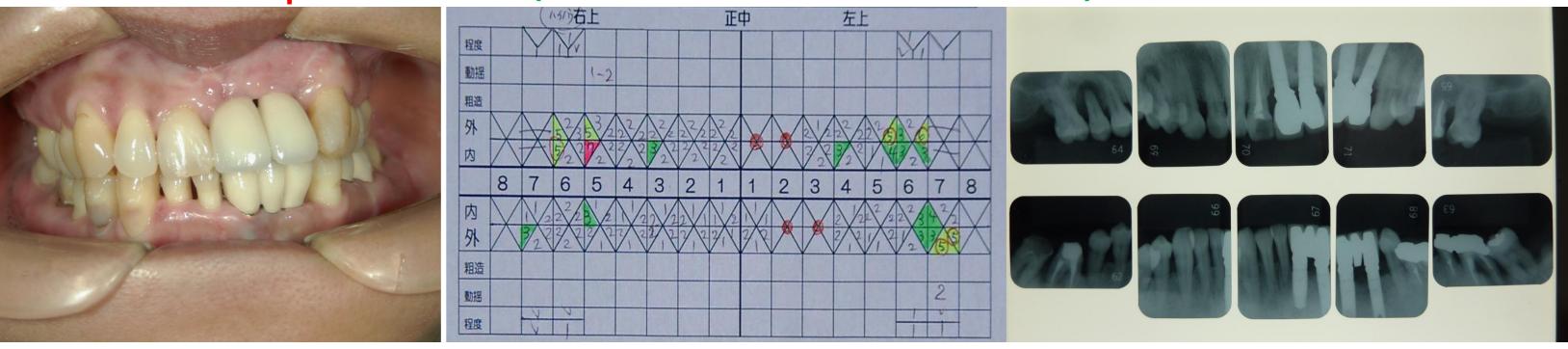




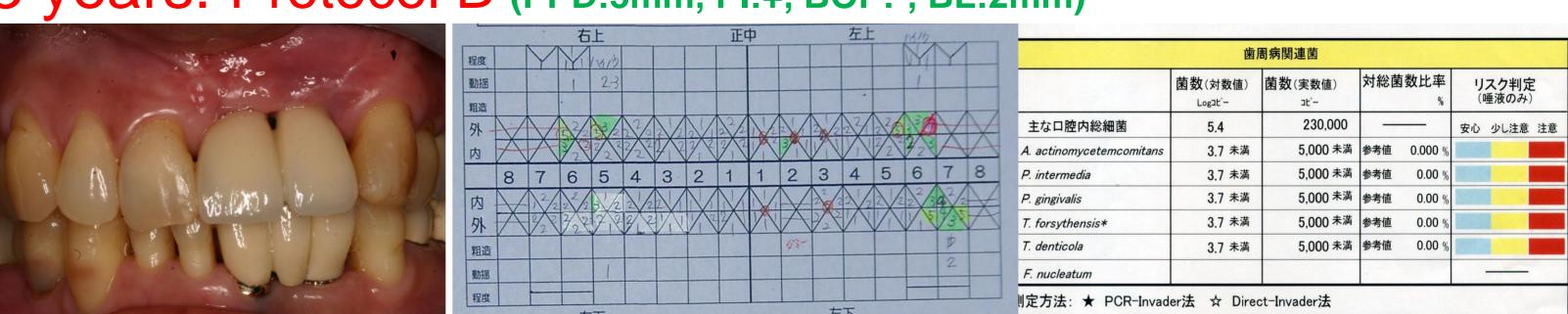


However, pus discharge continued. Under diagnoses as protocol D, antibiotic therapy using azithromycin hydrate and respective surgical therapy were performed.

18 months: protocol B (PPD:3mm, PI:+, BOP:-, BL:2mm)



3 years: Protocol B (PPD:3mm, PI:+, BOP:-, BL:2mm)



Although bone loss remained at No.1, No.2, Inflammation was not observed. Three parameters without BL suggested Protocol B.

Biological examination using PCR-Invader method did not detect 4 bacteria in conjunction with periodontal diseases.

III Discussion:

CIST system states that the detection and treatment of early pathogenic changes during follow-up period could prevent peri-implant soft tissue inflammation and progressive bone loss. The point is a system composed with cumulative treatment and continuous monitoring of peri-implant tissue.

Treatment:

Most basic treatment in our system are the usual methods used in dental clinics.

Daily care Mechanical debridement (ultrasonic, air-abrasive) Antiseptic treatment (chemical agents; chlorhexidine), photonic devices (laser), photodynamic therapy **Antibiotic treatment:** Regenerative or resection surgery

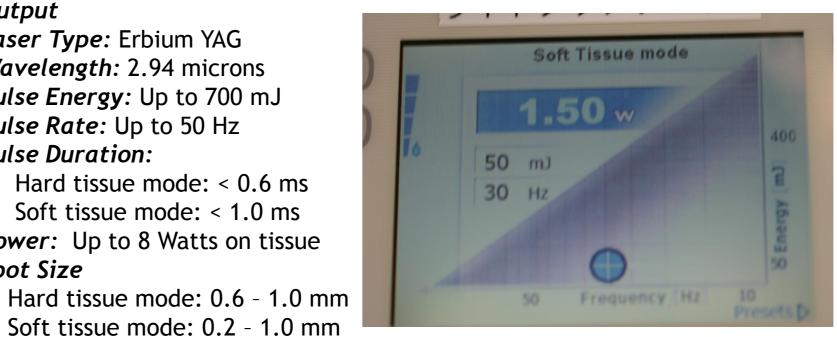
Low energy Er:YAG laser

Schwarz F, et.al.: J Clin Periodontol. 2003 Jan;30(1):26-34. "Non-surgical periodontal therapy with both an Er:YAG laser + SRP and an Er:YAG laser alone may lead to significant improvements in all clinical parameters investigated."

Removal of implant



Laser Type: Erbium YAG **Wavelength:** 2.94 microns Pulse Energy: Up to 700 mJ **Pulse Rate:** Up to 50 Hz Pulse Duration: Hard tissue mode: < 0.6 ms Soft tissue mode: < 1.0 ms **Power:** Up to 8 Watts on tissue Spot Size Hard tissue mode: 0.6 - 1.0 mm





Our Modified CIST System (to suit our clinic in 2011)

We considered our situation concerning Er:YAG laser and modified the original CIST system to suit our clinic.

Severity	Diagnoses	Parameter				Treatment		
		Plaq ue	Pocket depth	Bleeding	Bone loss	Person in		
Protocol		PI	PPD	ВОР	BL	charge		
Pr.MR	normal	_	<3 _{mm}	—	_	Patient	Maintenance Recall	Daily care
Pr. A	Early mucositis	+	<3 _{mm}		_	Hygienist	Mechanical debridement	PMTC (ultrasonic, air- abrasive)
Pr. B	Moderate mucositis	+	4-5,,,	+		Hygienist	Antiseptic treatment	chemical agents; chlorhexidine)
						Dentist	Non surgical treatment	Low energy Er:YAG laser
Pr. C	Early implantitis	+	>5 _{mm}	+	≤2 _{mm}	Dentist	Antibiotic treatment	Local use: mynomicine Systemic use: azythromicine
Pr. D	Moderate implantitis	+	>5 _{mm}	+	>3 _{mm}	Dentist	Surgical treatment	Regenerative or resective surgery in conjunction with high energy ER:YAG laser
Pr. E	Severe implantitis	+	whole	+	whole	Dentist	Removal	

conclusion:

CIST is a system basically using conventional methods, to find the early stages of periodontal disease and to treat them. The important point is, this system should be managed in cooperation with patients, hygienists and dentists...