

## Case report

### Supportive periodontal therapy for severe localized periodontitis

TSUCHIKURA AKINA<sup>1)</sup>, KAWAGUCHI CHIHARU<sup>1)</sup>, MATSUMURA YU<sup>2)</sup>, YASUDA TADASHI<sup>2)</sup>,  
KANAYAMA KEIICHI<sup>2)</sup>, KITAGO MITSUNOBU<sup>2)</sup>, KIMURA YOKO<sup>2)</sup>, TAKEUCHI HIROKO<sup>2)</sup>,  
MUKAI KEISUKE<sup>2)</sup>, MIZUNO MAO<sup>2)</sup>, SHIBUTANI TOSHIAKI<sup>2)</sup>

*Case:* The patient, a 40-year-old female, presented complaining of pus discharge from the lower anterior teeth. Periodontal examination revealed gingival recession, tooth mobility in lower anterior lesion; 21.1% of sites bled on probing, 21.1% of the sites had a periodontal pocket depth  $\geq 4$  mm. In particular #32 and #41 exhibited a probing pocket depth of 7mm. There was grade II mobility in #32, and grade I in #41. Based on the clinical and radiographic findings, the patient was diagnosed with localized chronic periodontitis.

*Clinical procedure and outcome:* Periodontal treatment was initiated with mechanical therapy, including systematic scaling and planning of all accessible root surfaces and the introduction of meticulous oral hygiene. After the thorough initial phase of mechanical therapy, the patient was motivated to achieve better plaque control. Flap surgery was performed including the application of enamel matrix protein to limited lesions. Reevaluation revealed decreased sites of bleeding on probing, plaque control and improvement in the probing pocket depth. A postoperative radiograph 12 months later showed significant bone formation. However, the gingiva between the interdental embrasures is shaped irregularly, which requires careful self-care and professional treatment. The patient was put on regular recall appointments for supportive periodontal therapy. The oral hygiene maintenance and compliance of the patient was excellent, and there were no signs of recurrence of the disease throughout the maintenance period of more than two years.

*Conclusion:* This case suggests that collaboration between the patient and dental professionals can maintain irregular gingival shape conditions.

Key words: Localized periodontitis, Regeneration, Supportive periodontal therapy

#### [case]

First visit: 28, July 2013  
Patient: 40 years old woman  
Main complaint: Swelling and drainage of the mandibular front tooth gingiva  
The oral medical history: she had a gingival swelling of the mandibular canine about 20 years ago, but not received the treatment.  
She visited the general dentist in 2011, but not improved.  
The dentist suggested to visit the periodontics in university hospital.  
Medical history: There is no Important Notice  
A brushing custom: Twice a day (night and morning) using the toothbrush for 10min.

#### [examination, periodontal findings]

Gingival flare, swellings were observed partially.

Pus discharge from # 41  
PCR: 45.8%  
BOP: 22.2%  
Periodontal pocket of 4mm or more: 21.1%  
7mm of clinical periodontal pocket at #42  
7mm of clinical periodontal pocket at #32  
Tooth mobility : grade I at #41, grade II at #32

#### [diagnosis]

Localized chronic periodontitis

#### [treatment plan]

1. Periodontal initial treatment
2. Reevaluation
3. Periodontal surgery (Regenerative therapy)
4. Reevaluation
5. Maintenance

<sup>1)</sup> Division of oral hygiene in Asahi University Hospital,

<sup>2)</sup> Department of Periodontology, Division of Oral Infection and Disease, Asahi University School of Dentistry

1851 Hozumi, Mizuho-city, Gifu 501-0296, Japan  
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[treatment progress]

July 2013 - oral hygiene instruction, scaling and root planing,  
 November 2013 - reevaluation  
 January 2014 - Open flap curettage for #31, #32, #41, #42  
 April 2014 - reevaluation, SPT  
 January 2016 - tooth extraction #48

July 2013. PCR45.8% BOP22.2% (Fig 1-4)

- Plaque attached to a cervix and intra dental area
- Instruct scrubbing method for regular tooth brush
- Instruct the inter dental brush #sss
- Explain the risk of gingival recession and hypersensitivity after the periodontal treatment



Fig 1 Oral photograph at first examination

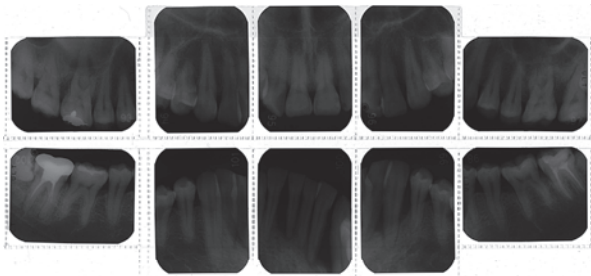


Fig 2 X-ray graph at first examination

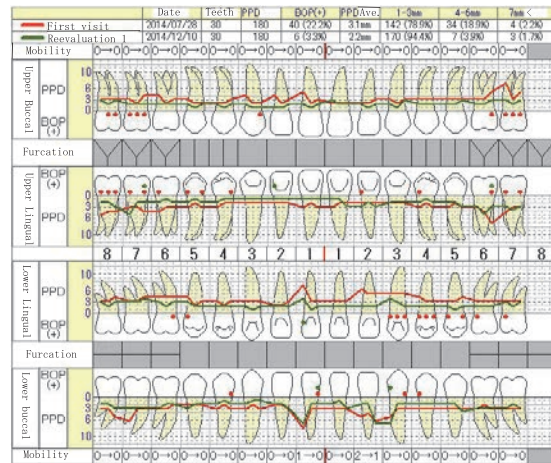


Fig 3 Periodontal condition at first examination

PCR	[Red diamond pattern]																日付	経過時間
歯列状態	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	検査日	2014/07/28
歯列矯正																	歯列矯正	00歯
PPD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	PPD平均	3.1mm (1.0mm以下)
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-Site	180 (100-200)
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4-Site	24 (10-30)
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7-Site	6 (2-10)
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	PPD-4	40 (22.2-250)
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	歯列矯正	0.1歯
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	PCR	45.8%

Fig 4 PCR and BOP at first examination

August 2013. PCR21.7%, BOP3.3%

#41 gum swellings are reduced. The motivation for the brushing improved.

PCR decreased from 45.8% to 21.7%

BOP decreased from 22.2% to 3.3%

Interdental brush #SSS

SRP for multiple times, gently instrument for lower anterior teeth.

April 2014 - reevaluation, SPT (Fig 5 - 8)



Fig 5 Oral photograph on August 2014

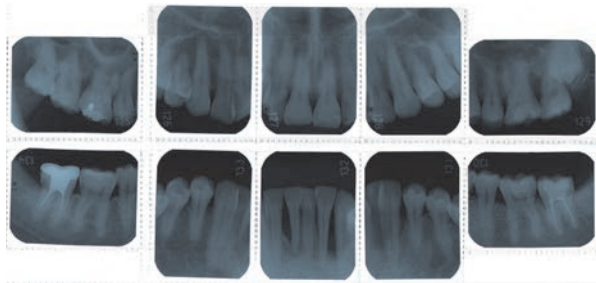


Fig 6 X-ray graph on August 2014

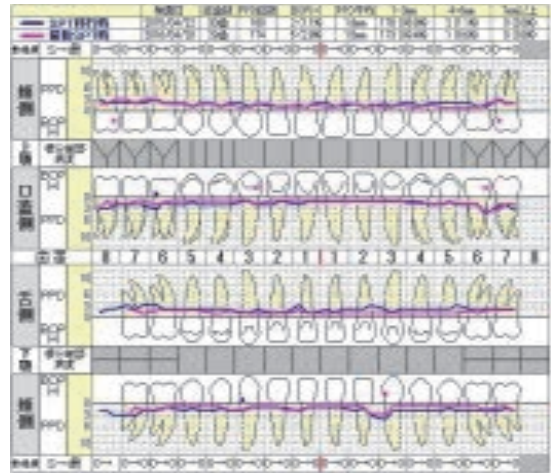


Fig 7 Periodontal condition on August 2014

PCR	[Red diamond markers]														3.4-0	SPT進行期	
動脈期	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	検査日	2014/04/12
歯周病程度	[Grid]														検査所	01番	
PPD	[Grid]														PPD平均	0.5mm (0.0-1.0)	
	[Grid]														4-5mm	0/1 (0.0-1.0)	
	[Grid]														6-7mm	0 (0.0-1.0)	
	[Grid]														8-9mm	0 (0.0-1.0)	
動脈期	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	歯周病程度	0.00
PCR	[Red diamond markers]														PCR	21.7%	

Fig 8 PCR and BOP on August 2014



[Outcome]

Periodontal treatment was started with an initial phase of mechanical therapy, including systematic scaling and planing of all accessible root surfaces and the introduction of meticulous oral hygiene. A thorough initial phase of mechanical therapy, the patient was motivated for better plaque control. The flap surgery was performed including enamel matrix protein application in limited lesions.

Reevaluation revealed decreased the sites of bleeding on probing, plaque control record and probing clinical pocket depth. A postoperative radiograph 12 months later showed a significant bone formation. However, irregular

shaped gingiva between the interdental embrasures. It needs careful self-care and professional treatment. The patient was put on regular recall appointments for supportive periodontal therapy. The oral hygiene maintenance and compliance of the patient was excellent, and there were no signs of recurrence of the disease throughout the maintenance period more than two years.

The periodontal condition of anterior lesion was focused in Fig 13a-f. The X-ray showed alveolar bone regeneration and improved gingival inflammation.

The fluctuation of PCR level from first visit to recent visit showed in Fig14.



Fig 13 The periodontal condition of anterior lesion was focused in Fig 13a - f. The X-ray showed alveolar bone regeneration and improved gingival inflammation.

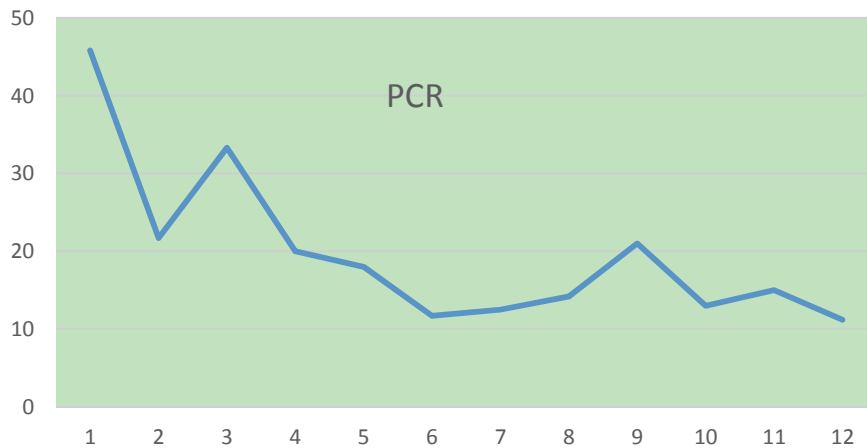


Fig 14 PCR fluctuation during periodontal treatment

Discussion

In 1999, a new classification system for periodontal disease was developed at the World Workshop on Periodontics<sup>1</sup>. It includes a greater variety of disease categories, which base the diagnosis on clinical, historical,

radiographic, and lab findings rather than the age of on set. One category, aggressive periodontitis, now includes several periodontal conditions that affect those who are otherwise healthy. There tends to be a familial component, and the rate of attachment loss and bone destruction is usually rapid<sup>2</sup>.

Periodontal treatment was started with an initial phase of mechanical therapy, including systematic scaling and planning of all accessible root surfaces and the introduction of meticulous oral hygiene. A thorough initial phase of mechanical therapy, the patient was motivated for better plaque control. The flap surgery was performed including enamel matrix protein application in limited lesions.

Reevaluation revealed decreased the sites of bleeding on probing, plaque control record and probing clinical pocket depth. A postoperative radiograph 12 months later showed a significant bone formation. However, irregular shaped gingiva between the interdental embrasures. It needs careful self-care and professional treatment. The patient was put on regular recall appointments for supportive periodontal therapy. The oral hygiene maintenance and compliance of the patient was excellent, and there were no signs of recurrence of the disease throughout the maintenance period more than two years.

As the understanding of the development of the periodontal attachment apparatus progressed, the potential role of mediators expressed by Hertwig's root sheath in the reconstruction of the periodontal ligament was suggested<sup>3)</sup>. Subsequently a series of animal experiments led to the identification of the role of enamel matrix proteins in the development of the root and the adjacent periodontal ligament<sup>4,5)</sup>. These observations led to the development of a novel concept for the regeneration of the periodontium: the use of differentiation factors to recapitulate development during wound healing.

In this case, the condition of periodontal was stable more than 10 months after regeneration therapy. The tooth extraction #48 was expected from periodontal

initial treatment. The patient agreed with the tooth extraction in order to increase the tooth mobility and toughness of occlusion.

### [Conclusion]

This case is suggested that the collaboration with patient and dental professionals can maintain the irregular gingival shape conditions.

### References

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This case report has been obtained informed consent from the patient

There are no conflicts of interest with businesses and groups to disclose regarding the content of the presentation.

## 重度限局性歯周炎患者にサポータティブペリオドンタルセラピーを行なっている一症例

土 蔵 杏 奈<sup>1)</sup> 川 口 千 治<sup>1)</sup> 安 田 忠 司<sup>2)</sup> 金 山 圭 一<sup>2)</sup>  
北 後 光 信<sup>2)</sup> 木 村 洋 子<sup>2)</sup> 竹 内 浩 子<sup>2)</sup>  
向 井 景 祐<sup>2)</sup> 水 野 真 央<sup>2)</sup> 渋谷 俊 昭<sup>2)</sup>

### 【症例】

40歳女性。下顎前歯肉肉からの排膿を主訴に来院した。歯周組織検査の結果、歯肉退縮、4 mm以上のポケット深さが21.1%、BOP21.1%であった。#32は7mmのポケット深さと動揺度Ⅱ度、#41は7mmのポケット深さと動揺度Ⅰ度のみとめられた。エックス線検査および歯周組織検査から限局性慢性歯周炎と診断した。

### 【治療内容と結果】

歯周基本治療として口腔清掃指導とスケーリング・ルートプレーニングを行った。歯周基本治療中に患者のモチベーションの向上を誘い、良好なプラークコントロールが確立された。再評価後に数部位にエナメルタンパクを用いた歯周組織再生療法を行った。ポケット深さは概ね改善され、4 mm以上のポケットは1.1%となり、エックス線検査からも歯槽骨の改善を認めた。しかしながら、歯肉退縮による歯間鼓形空隙の増大や、歯肉形態の多様性のため、セルフケアとプロフェッショナルケアの重要性が予見された。サポータティブペリオドンタルセラピーに移行し、2年間を経過しているが、再発の徴候は無く良好な状態を維持している。

### 【結論】

限局性歯周炎の治療の結果、部分的歯間部歯肉退縮による清掃性の低下を予見したが、良好な状態を維持している。本症例では、患者のセルフケアと歯科衛生士によるプロフェッショナルケアの相互理解と協力が重要であることが示唆された。

キーワード：限局性歯周炎、サポータティブペリオドンタルセラピー、歯周組織再生療法

<sup>1)</sup> 朝日大学歯学部付属病院歯科衛生部

<sup>2)</sup> 朝日大学歯学部口腔感染医療学講座歯周病学分野

〒501-0296 岐阜県瑞穂市穂積1851

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