Supportive periodontal therapy for severe localized periodontitis

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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 ≥ 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

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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, PCR 45.8% BOP 22.2% (Fig 1-4)

Plaque attached to a cervix and intra dental area
- Instruct scrubbing method for regular tooth brush
- Instruct the inter dental brush #$$
- 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

Fig 4 PCR and BOP at first examination
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August 2013. PCR 21.7%, BOP 3.3%
- #41 gum swellings are reduced. The motivation for 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

Fig 8 PCR and BOP on August 2014
April 2016. PCR11.2% 3M. SPT (Fig 9 - 12)

A plaque control was well controlled

Self-care

- Three times 10 to 15 min a day. (after breakfast, after lunch, before going to bed)
- Tooth brush (slim head 34S®), Taft brush (plastic Uto S®), Interdental brush #S

- I confirmed that brushing pressure was low power continuously.

Professional care

- Scaling
- PMTC
- PTC
- Fluoride application

Fig 9 Oral photograph on March 2017

Fig 10 X-ray graph on March 2017

Fig 11 Periodontal condition on March 2017

Fig 12 PCR and BOP on March 2017
[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\(^6\). 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 \(^5\).
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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. 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. 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 regenration 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


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ティブペリオロドンタルセラピーを行なっている一症例

土 蔵 杏 奈① 川 口 千 治① 安 田 忠 司② 金 山 圭 一②
北 後 光 信③ 木 村 洋 子② 竹 内 浩 子②
向 井 景 裕 ② 水 野 真 央 ② 佐 谷 勝 昭②

【症例】
40歳女性。下顎前歯区歯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以上のポケットデブスが21.1%、BOP21.1%であった。①#32は7mmのポケットデブスと動揺度II度、③#41は7mmのポケットデブスと動揺度I度がみとめられた。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、良好なブラクラコントロールが確立された。再評価後に各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。ポケットデブスは概ね改善され、4 mm以上のポケットは11%となり、エックス線検査で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歯肉部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ショナルケアの重要性が示唆された。サポーティブペリオロ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的低下を予見したが、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、サポーティブペリオロドンタルセラピー、歯周組織再生療法

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