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Management of localized aggressive periodontitis: A case report

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Abstract
The aim of this case report is to describe the importance of early diagnosis and treatment to prevent the progression of localized aggressive periodontitis. A 16 years old systemically healthy female patient with a chief complaint of increased mobility and spacing in relation to mandibular anteriors was successfully treated with initial non-surgical periodontal therapy and antimicrobial therapy (as an adjunct therapy), followed by surgical intervention. Patient was followed-up for 6 months. Patient education to maintain adequate oral hygiene and good patient compliance along with periodontal treatment led to successful preservation of esthetics and function.

Keywords: Aggressive periodontitis, gingival recession, antimicrobial therapy

Introduction
Periodontitis is a pathologic manifestation of host response against bacterial challenge. Aggressive periodontitis (AgP) comprises a group of rapidly progressive forms of periodontitis often characterized by an early age of clinical manifestation and a distinctive tendency for cases to aggregate in families [1]. According to Lang *et al*. primary features of Agp are non-contributory medical history, rapid attachment loss and bone destruction, familial aggregation of cases. Secondary features that are not universally present includes microbial deposits inconsistent with the severity of periodontal tissue destruction, phagocyte abnormalities, elevated proportions of Aggregatibacter actinomycetemcomitans (A.a), hyper-responsive macrophage and self-arresting progression [2]. The international classification workshop classified AgP into localized and generalized forms [3].
Localized aggressive periodontitis is defined as localized first molar/incisor presentation with interproximal attachment loss on at least two permanent teeth, one of which is a first molar, and involving no more than two teeth other than first molars and incisors. AgP often causes aesthetics concerns due to dentilabial migration of maxillary incisors with concomitant diastema formation. Increased mobility and sensitivity of denuded root surfaces make difficulty in chewing. Patient may complains of deep dull radiating pain during mastication, probably caused by irritation of supporting structures by mobile teeth and impacted food. Periodontal abscess may form at this stage and regional lymph node enlargement may occur.
This case report describes a case of localized aggressive periodontitis treated in a conservative manner to maintain dental integrity and to restore aesthetic and functional condition.

Case Description
A 16 years old systemically healthy female patient reported to department with a chief complaint of increased mobility and spacing around lower front teeth since a few weeks. She had no history of trauma. On being asked, patient gave history of early tooth loss of her brother. Clinical examination revealed reddish pink, soft and oedematous gingiva in relation to mandibular central incisors irt 31,41 and pathologic migration of mandibular central incisors (Figure 1). 2 mm of gingival recession and grade 1 mobility was present (irt 31,41). Periodontal probing was then performed, using UNC-15 probe around each tooth. Bleeding on probing was present in relation to mandibular incisors and 1st molars of all quadrant. Deep periodontal pockets (> 5mm) were present in relation to mandibular incisors and first molars

of all quadrants.

Radiographic examination revealed interdental bone loss around mandibular incisors and 1st molars of all quadrant. (Figure 2 and 3) Based on the history, clinical and radiographic findings, the case was provisionally diagnosed as localized aggressive periodontitis. According to 2017 world workshop diagnosis was stage III and grade C periodontitis [4]. Patient was informed about the condition and treatment plan. Written and informed consent was obtained. Initially, nonsurgical phase I therapy comprising of scaling and root planing and introduction of oral hygiene along with oral antimicrobial therapy (cap amoxicillin 500mg TDS and tab metronidazole 500 mg TDS for 7 days). Re-assessment was done after 6 weeks. In order to gain access to persistent periodontal pockets of > 5mm, which had not resolved after phase 1 therapy, modified flap operation [5] was performed under local anaesthesia. Sulcular incision was given to raise a flap (from mesial aspect of right mandibular canine to mesial aspect of left mandibular canine), thorough debridement was done using curettes and ultrasonic scalers (Figure 4). Flap was adapted and sutured using 3-0 black silk interrupted sutures. Tab Brufen 400mg 1tab S.O.S. was prescribed.

Postoperative instructions were: 1) Avoid hot food and beverages for 24 hours, 2) Avoid spiting for 24 hours, 3) Have cold and soft diet for 24 hours, 4) warm saline rinses a day after surgery, 5) Avoid brushing at surgical site till suture removal. Patient was recalled after 7 days for suture removal. Follow-up is done after 1 month, 3months and 6 months.

Results

Periodontal parameters were re-assessed at each follow-up visit. Patient was motivated and educated to maintain good oral hygiene. At 6 months of follow-up, gingiva was pink and resilient (Figure 5). No periodontal pocket of depth more than 5 mm was present and bleeding on probing was absent.

Fig 1: Pre-operative image showing gingival inflammation in relation to mandibular incisors

Fig 2: Radiograph showing bone loss in relation to mandibular incisors

Fig 3: Radiograph showing bone loss around mandibular molar

Fig 4: Intraoperative image showing flap elevation and debridement

Fig 5: At 6 months of follow-up pink, firm and resilient gingiva

Discussion

The differential element of treatment of AgP relates to specific efforts to affect the quality and not only the quantity of the sub gingival plaque. Elimination or suppression of the pathogenic microbiota is essential. A.A. elimination has been shown to be associated with successful therapy. Conversely, recurrent lesions have been shown to still harbour this microorganism [6].

Several investigators have reported that scaling and root planning of localized aggressive periodontitis lesions could not suppress A.A. below detection levels [6, 7]. Soft tissue curettage and access flap therapy also had limited success in eliminating A.A [8] because it has tissue invasion ability. Use of antibiotics has been suggested as a rational complement to mechanical debridement. A meta-analysis indicating significantly greater clinical improvements following systemic antibiotic administration upon completion of

subgingivally instrumentation [9]. Systemic antibiotics should only be administered as an adjunct to mechanical debridement because in undisturbed subgingivally plaque the target organisms are effectively protected from the antibiotic agent due to the biofilm effect.

In this case report modified flap operation was planned. Only crevicular incision was performed in order to preserve the keratinized gingiva because 2 mm of labial recession was present in relation to mandibular central incisor. Optimal plaque control by the patient is crucial for a favourable response to therapy. Patient was educated and motivated to maintain good oral hygiene at each follow-up visit in order to control the progression of the disease.

Conclusion

This case report suggests for successful treatment of localized aggressive periodontitis, early diagnosis and treatment is paramount. Patient education to maintain adequate oral hygiene and good patient compliance along with periodontal treatment led to successful preservation of esthetics and function in this case.

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