

# Case Report: Stage III, Grade C, Molar Incisor Patterned Periodontitis

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## **Abstract**

Molar incisor patterned periodontitis (MIPP), or previously known as aggressive periodontitis or juvenile periodontitis, is characterized by rapid progression in attachment loss and bone destruction. Pediatric patients with molar incisor patterned periodontitis are at risk of early onset loss of dentition. This case report will discuss the assessment, diagnosis, and treatment of a 15 year old female patient with stage III, grade c, molar incisor patterned periodontitis

## Background

### Terminology changes

1923: MIPP was first described as a "diffuse alveolar atrophy" and referred to as "periodontosis"

1969: "juvenile periodontitis"

1999: "localized or generalized aggressive periodontitis"
2017: new staging system based on severity (includes extent and distribution of the disease) and grading system based on susceptibility

Characteristics: aggressive and rapid loss of attachment, molar incisor pattern, an otherwise healthy and young patient, familial aggregation, and presence of minimal subgingival biofilm Etiology: MIPP is a multifactorial and genetically complex disease. Etiologic factors include familial aggregation, microbial dysbiosis, hypersentive host response, diabetes mellitus, smoking, Aggregatibacter Actinomycetemcomitans, and the red complex.

Epidemiology: prevalence of MIPP varies significantly depending on race/ethnicities. MIPP is most prevalent in Africa and in populations of African descent and is least prevalent in Caucasians in Europe and North America. A 2020 meta-analysis reported average prevalence of 1.6% around the world, 4.2% in Africa, 4% in South Africa, 1.2% in Asia, 0.8% in North America, and 0.1% in Europe. In the U.S, there is a prevalence of 0.2% -0.5% in children and adolescents up to 17 years old. Prevalence of MMIP in deciduous dentition is as low as 0.06%. There is a comparable disease prevalence between male and female subjects

## **Case Report: Clinical & Radiographic Findings**



### Initial visit 10/11/2023

- 15y3m African American female presents with mother for new patient exam at U of M Pediatric Dentistry Clinic
- CC "Here for new patient exam."

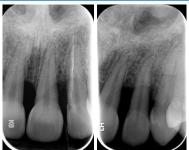
   Med history: asthma (well controlled, last asthmatic attack 3 years ago, never been hospitalized for asthma)

  Medications: albuterol inhaler pro

-During prophy, class II mobility of #8-#10 was noted. Pt reported trauma to maxillary anterior a few months ago when she was playing with her siblings but reported no symptoms and sensitivity associated with the region. Radiographic and clinical findings: generalized occlusal staining of posterior dentition, regions with severe radiographic bone loss: #3-m, #4-d, #8-d&m, #9-d&m, #10-d&m, #14-m, #19-m&d, #20-d, #29-d, #30-m&d, mobility of incisors and molars ranged from grade 1-3

Treatment plan: Grad Perio Referral +

OHI









Grad Periodontics Evaluation 1/18/2024
-Comprehensive periodontal charting
completed: CAL up to 10mm, 2-10mm PD,
generalized BOP, supragingival and
subgingival calculus, overall molar/incisor
involvement, furcation involvement of first
molars, deficient hygiene, moderate to
severe inflammation

**Diagnosis:** Molar-incisor pattern periodontitis, grade C

 -Risk assessment: Pt has hx of periodontitis in family, from father's side. No smoking. No diabetes

Overall risk assessment: High Anterior open bite: Suspected from previous tongue thrusting habit -> may also contributed to the mobility of anterior maxillary teeth

### Treatment plan:

screenings as well

- SRP in all 4 quadrants + concomitant antibiotics (amoxicillin 500mg and metronidazole 250mg) TID for 7 days -Re-evaluation 4-6 weeks post SRP -Surgical therapy is mostly warranted after control of inflammation -Orthodontic therapy is contraindicated -Recommended 4 siblings to have perio

## **Treatment Options**

## Conventional scaling and root planing (SRP) with adjunctive systemic antibiotic therapy

- Initial therapy
- Both aid in reduction of microbial count. ABX targets anatomic areas that are difficult to access or subepithelial tissues
- Most common abx regimen: 500mg amoxicillin + 250-500mg metronidazole, TID 7-14 days
- Systematic abx can be prescribed immediately at time of SRP or after completion of SRP

#### 2) Open flap debridement

 Utilization of modified Widman flap to allow access to the root surface to remove plaque and calculus

#### 3) Guided Tissue Regeneration

- Targets deep and narrow pockets
- Creates a flap in the defect followed by membrane placement with or without a bone graft to prevent epithelial migration into the site of the defect, allowing the slower populating bone growth cells into the area

#### 4) Laser and Photodynamic therapy

 To eliminate bacteria by generating reactive oxygen radicals through a combination of laser light and photosensitizer

### 5) Host Response Modulation

- Newest treatment modality based MIPP showing hyper-responsive immune response
- Cox 2 inhibitors may reduce prostaglandin E2 in gingival crevicular fluid and subantimicrobial dose of doxycycline (20mg 2x/day) may inhibit matrix metalloproteinase (MMP)

## CONCLUSION

Pediatric patients with molar incisor patterned periodontitis are at risk of early onset loss of dentition. It is important for pediatric dentists to be able to recognize signs of MIPP and treatment options patients of MIPP may have.

## REFERENCES

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