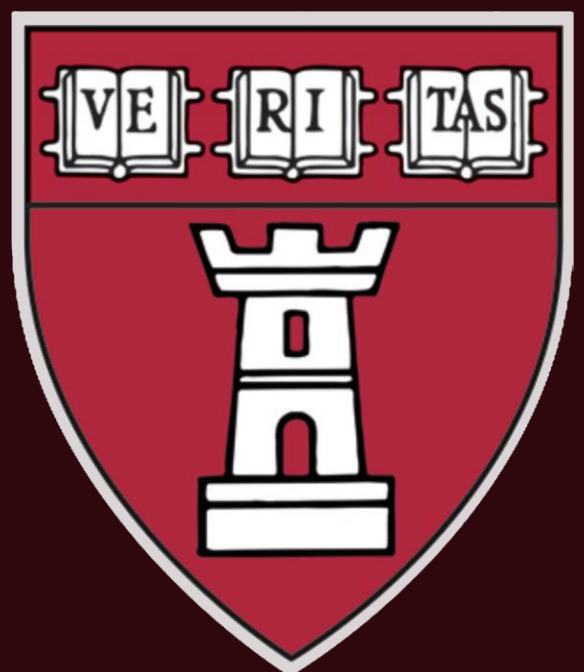




Background

Periodontitis is a remarkably common disease, affecting an estimated 42.2% of dentate individuals and upwards of 59.8% of individuals over age 65.¹ It has been linked to other systemic health conditions, including diabetes, cardiovascular disease, and adverse pregnancy outcomes.² As of 2017, a new classification system was developed to help categorize the severity and extent of periodontitis in patients, which has in turn informed treatment options.³ Previous studies have documented the natural progression of periodontal disease⁴, and that tooth loss could be prevented with appropriate preventative measures^{5,6}. Several risk indicators and factors have been identified, including smoking, age, and tooth mobility.⁷

Objectives

Examine the themes that lead to successful long-term treatment outcomes (i.e., retaining teeth for an extended period) through a historical lens. Contribute to an understanding of how long-span periodontal treatments and maintenance have affected the overall outcomes for patients and the survival of their dentitions.

Methods

A retrospective, qualitative chart review was performed. N = 20 records reviewed, which was an adequate number to develop themes. This sample size also provided the findings to develop a depth of contextual understanding of the data. Record selection inclusion criteria included that they must span at least 30 years of treatment and follow-ups; and must contain, at minimum, radiographs and chart notes throughout the course of treatment, as well as periodontal charting during treatment. A thematic analysis of the data collected was performed, and representative patients in each theme were selected.

Results

20 records were reviewed, but only 19 were considered for data and thematic analysis. The one chart not included had only radiographs in the record, but no notes. Four major themes for maintaining teeth and periodontal stability were identified:

1. Adequate patient plaque control
2. Regular periodontal maintenance
3. Regular periodontal maintenance with periodontist and hygienist collaboration
4. Application of various non-hygienist performed procedures (e.g., surgery, chemotherapeutics, splinting, etc.)

These trends were consistent and seen within each examined record, although some tended to be more important for some patients' care than others.

References

Theme 1: Adequate Plaque Control – 46 Years of Treatment



Figure 1. Patient #1, FMX & photos from (A,B) April 1967 and FMX from (C) May 2011.

Theme 2: Regular Periodontal Maintenance – 40 Years of Treatment



Figure 2. Patient #2, FMX & photos from (A,B) April 1973 and (C) FMX from June 2009.

Theme 3: Periodontal Maintenance with Hygienist-Periodontist Collaboration – 43 Years of Treatment



Figure 3. Patient #3, FMX & photos from (A,B) April 1971 and (C) FMX from April 2004.

Theme 4: Application of Various Non-Hygienist Performed Procedures – 47 Years of Treatment

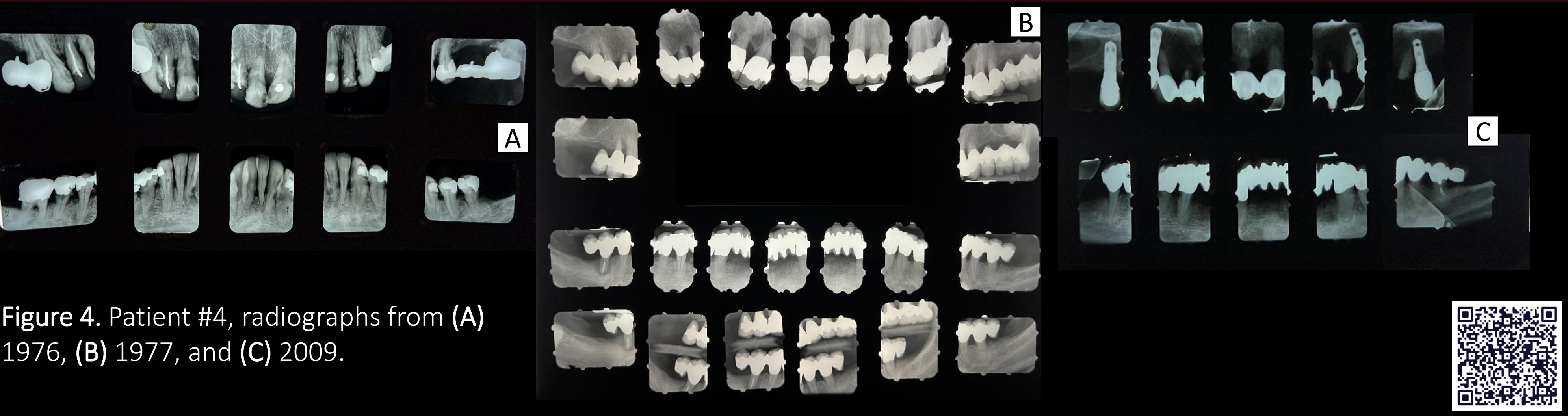
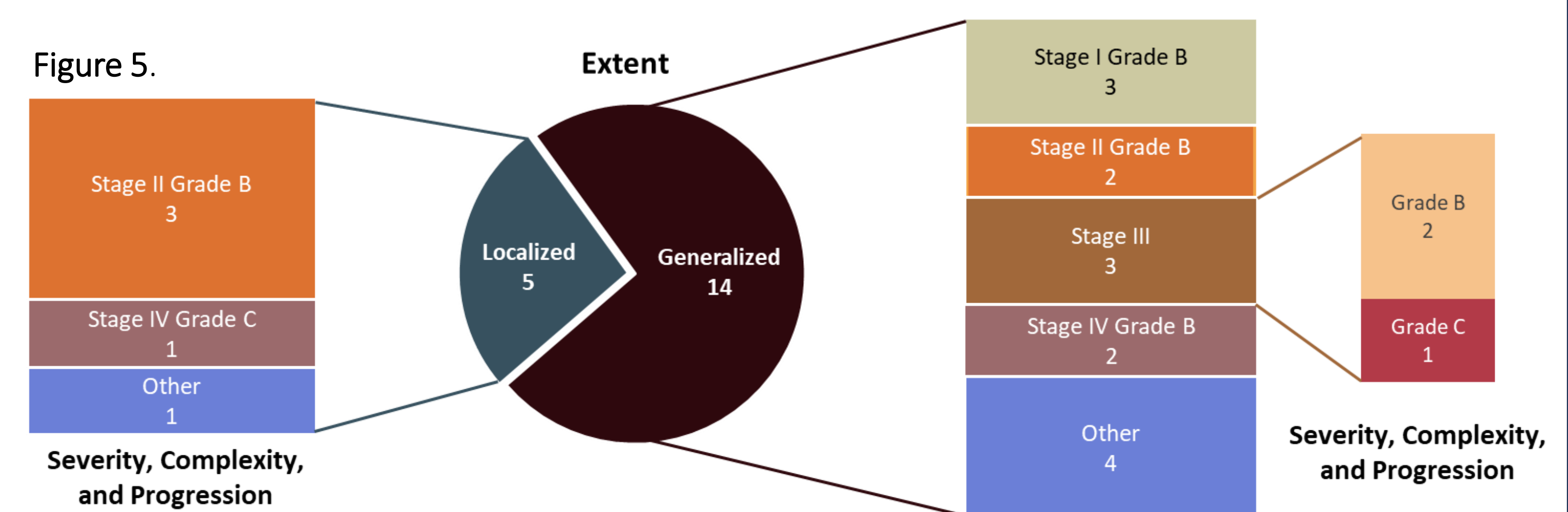


Figure 4. Patient #4, radiographs from (A) 1976, (B) 1977, and (C) 2009.

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Discussion

Regular maintenance, patient motivation, intradisciplinary collaboration, and flexible treatment options all play integral roles in the preservation of patients' periodontal health. These findings provide a comprehensive view of the multifaceted nature of periodontal care and offer valuable guidance for optimizing patient outcomes over the long term. This research is limited by a small sample size with only basic statistical analyses for this thematic analysis, only using one private practice office. Multi-center studies analyzing the same criteria and determining the statistical significance of these themes are needed. An integration and understanding of patient-related outcomes in relation to these findings would also be valuable (e.g., do patients want to maintain certain teeth, or would they prefer implants?).

Conclusion

This research contributes a general understanding of what factors may come into play when helping patients retain teeth for a longer period of time, especially when the prognosis of some teeth or the overall dentition may be questionable or poor. Keeping these themes in mind while planning for patient treatments can serve as a good framework for conservatively treating patients before electing to pursue extractions and implants.

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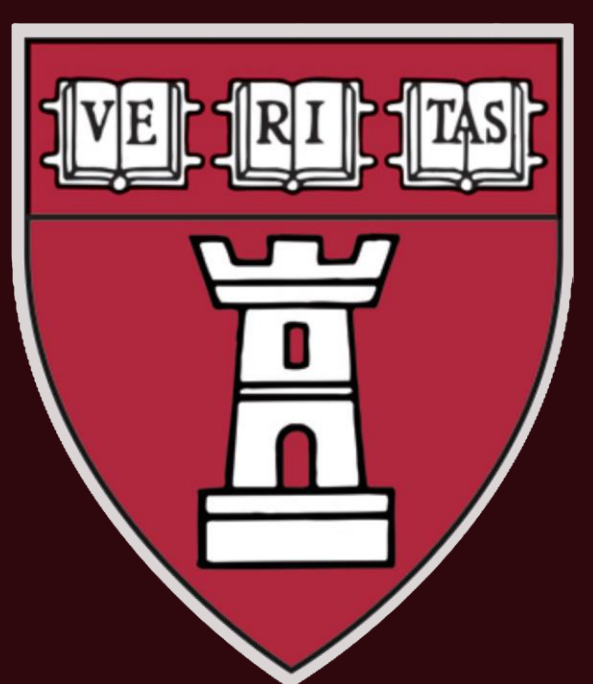
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Key Themes in Periodontal Treatment: Lessons Learned from 40-Year Experiences

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Background

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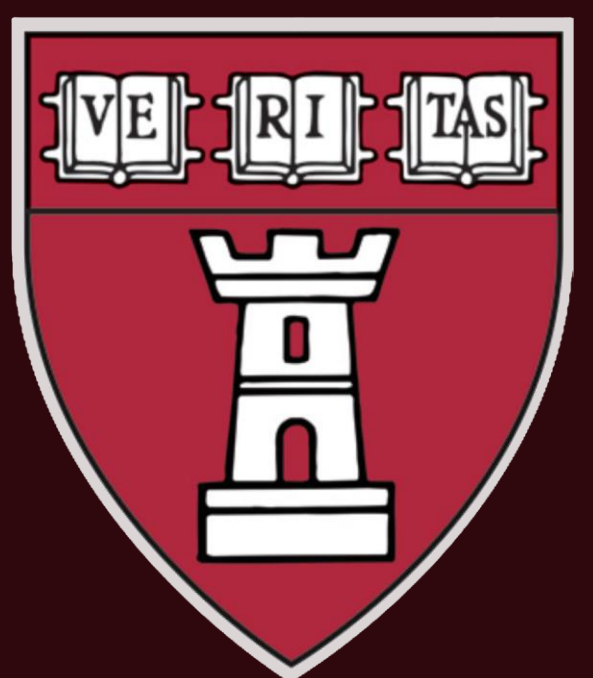
1. Adequate patient plaque control
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Theme 1: Adequate Plaque Control – 46 Years of Treatment

Patient #1 presented in April 1967 as a 29 y/o F with a history of gingivitis and family history of periodontal disease, retroactively classified as Generalized Stage I Grade B Periodontitis. Treated with initial scaling and root planings (SRPs) and oral hygiene instruction (OHI) in 1967. Then, buccal flaps with lingual gingivectomies for “deep probing depths” in the UR and UL molars, and LLQ. Periodontal maintenance schedule of every 3-4 months after the surgeries. At her first few appointments, she was noted to have “not good” oral hygiene, but that both the hygienist and periodontist were able to counsel her with significant improvements by 1977—a period of 10 years of re-evaluation and further counseling. In 1975, #32 was extracted due to uncleansibility and impaction. In 1982 (and again in 1988), a pedicled gingival graft was performed for #25/26 due to lack of gingiva from “traumatic brushing.” Last recorded entry was in 2013.

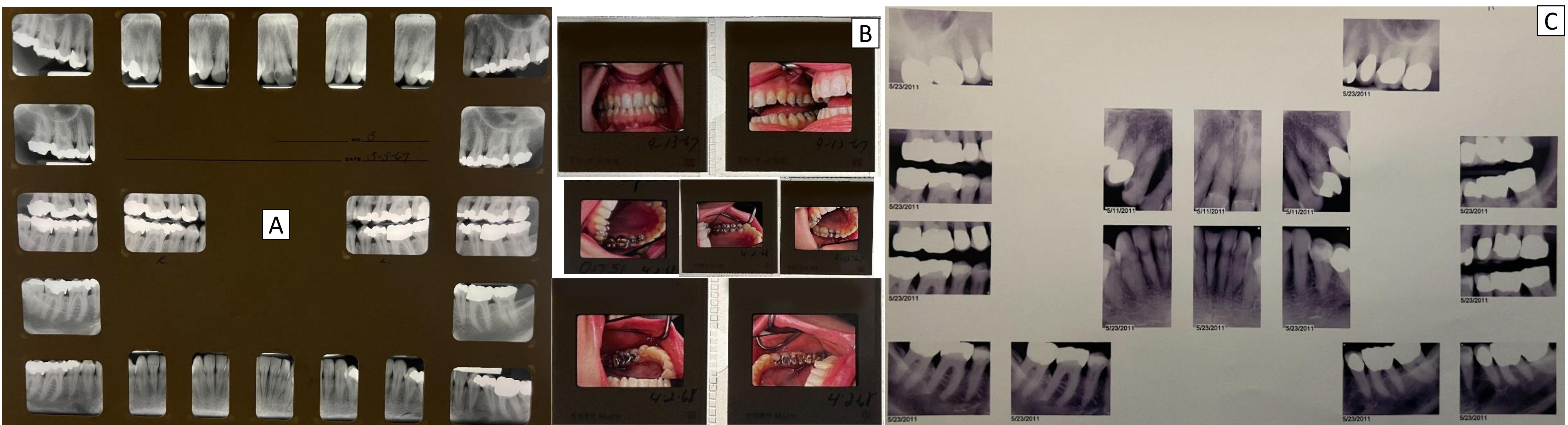


Figure 1. Patient #1, FMX & photos from (A,B) April 1967 and FMX from (C) May 2011.

Theme 2: Regular Periodontal Maintenance – 40 Years of Treatment

Patient #2 presented in April 1973 as a 40 y/o M with the description of “recent gingivectomy case, [very poor] oral hygiene, loss of teeth, and inflammation.” Retroactively classified as Generalized Stage III Grade B Periodontitis. After initial SRPs and OHI in 1973, underwent a series of apically repositioned flap and osseous surgeries to eliminate bony defects in all four quadrants. Then, maintained religious 3-month periodontal maintenance schedule until 2003, when he graduated to 4-5 months. Due to mobility from prior bone loss, teeth were splinted by his general dentist by 1976, and again in 1992. Recommended extraction of #17 in 1990, but maintained until 1998. Recommended extraction of #7-10 in 1992, but maintained until at least 2013.



Figure 2. Patient #2, FMX & photos from (A,B) April 1973 and (C) FMX from June 2009.

Theme 3: Periodontal Maintenance with Hygienist-Periodontist Collaboration – 43 Years of Treatment

Patient #3 presented in April 1971 as a 49 y/o F for an emergency visit due to mobility in her UL bridge, and was noted to have “deeper pocket depths” throughout. Retroactively classified as Generalized Stage II Grade B Periodontitis. Initial SRPs and OHI completed in 1971, along with an apically positioned flap for her UL bridge. Maintained 3-month periodontal maintenance schedule, until graduating to 4 months in 2000. For most of her treatment, she had the same hygienist, who counseled and recorded her oral hygiene technique and overall condition at each visit. Within the first few years, the hygienist noted that the patient was “doing super,” from a previous fair-to-poor oral hygiene regiment. In 1995, teeth #2, 3, 13, 18, 19, 31, and 32 had Grade 2 furcations, but all of her teeth were maintained periodontally throughout the course of her treatment, which ended in 2014.

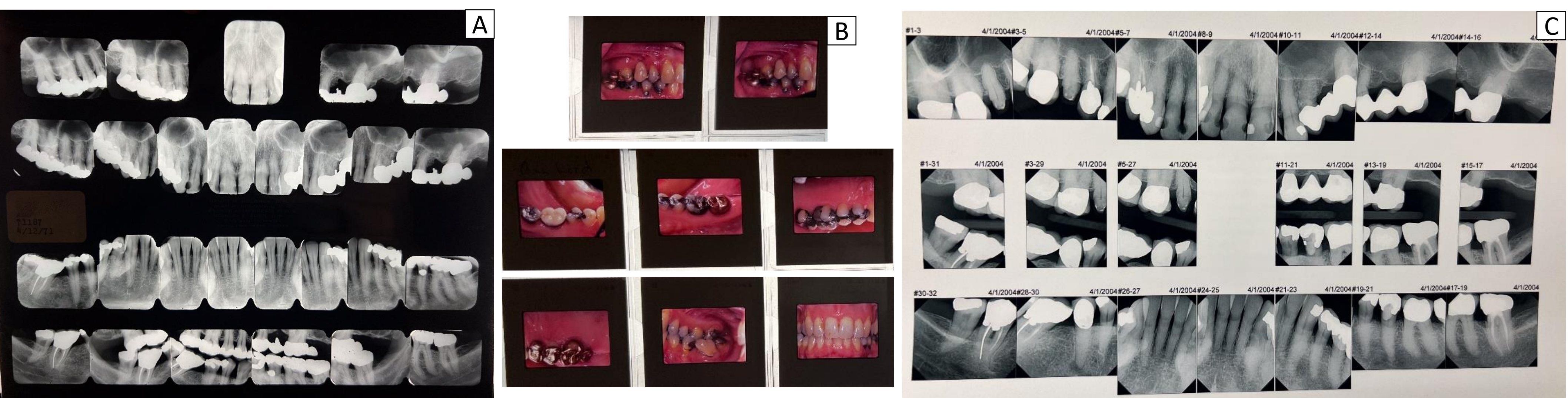


Figure 3. Patient #3, FMX & photos from (A,B) April 1971 and (C) FMX from April 2004.

Theme 4: Application of Various Non-Hygienist Performed Procedures – 47 Years of Treatment

Patient #4 presented in October 1976 as a 47 y/o F with a note of “significant periodontal disease, caries, and need for restorative rehabilitation.” Retroactively classified as Grade IV Grade B Periodontitis. Notably irregular oral hygiene, from pristine to poor, throughout treatment. Treated with SRPs (1977), flap surgeries (1977), MB root resection of #14 (1977), extraction of #30 (1978) and #23-26 (1980), splinting (1980), and tetracycline irrigation (1990). Due to caries, splinting was redone, along with FGGs, extraction of #14 (18 years), #5, and #29, replacing the latter two with implants by 1998, and then a fractured #11 in 2009.

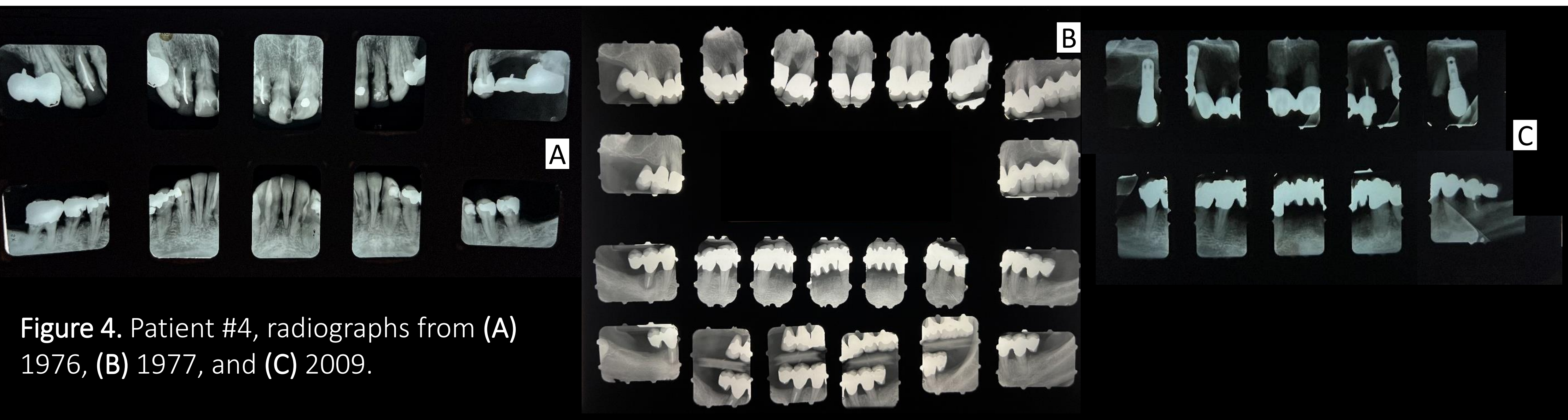
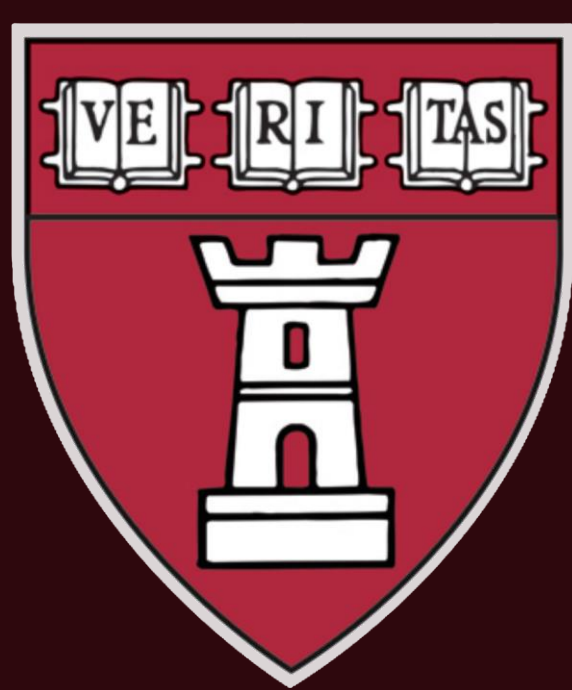


Figure 4. Patient #4, radiographs from (A) 1976, (B) 1977, and (C) 2009.



Results

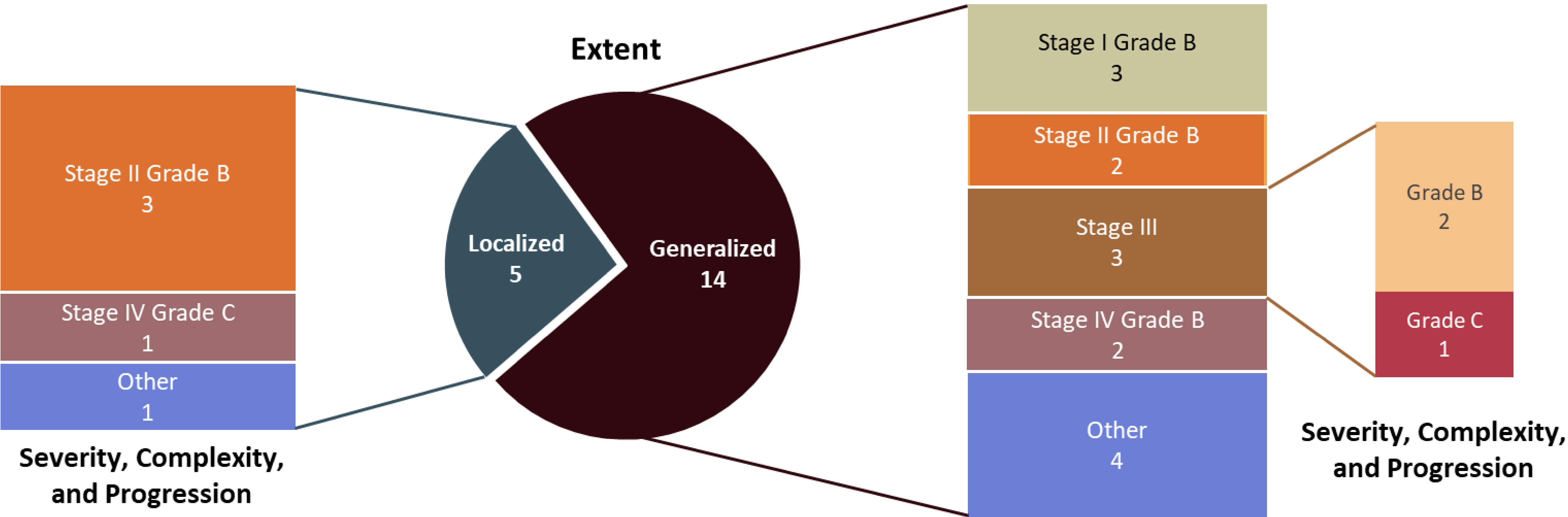


Figure 5. Distribution of diagnoses (N=19) at initial presentation for each of the patients. The number under each diagnosis refers to the number of patients with that diagnosis. “Other” refers to a diagnosis of exclusively gingivitis or gingival hyperplasia.

	Years
Average Treatment Length	39.9±5.76
Average Age at Onset	36.9±10.4

Table 1. Average (N=19) of time spent in treatment and maintenance, and the age at initial intake appointment.

	Number of Teeth
Average Teeth Lost	2.32±2.81
Average Teeth Lost due to Periodontal Disease	0.63±1.29
Total Teeth Lost	44
Teeth Lost due to Periodontal Disease (%)	27.3%

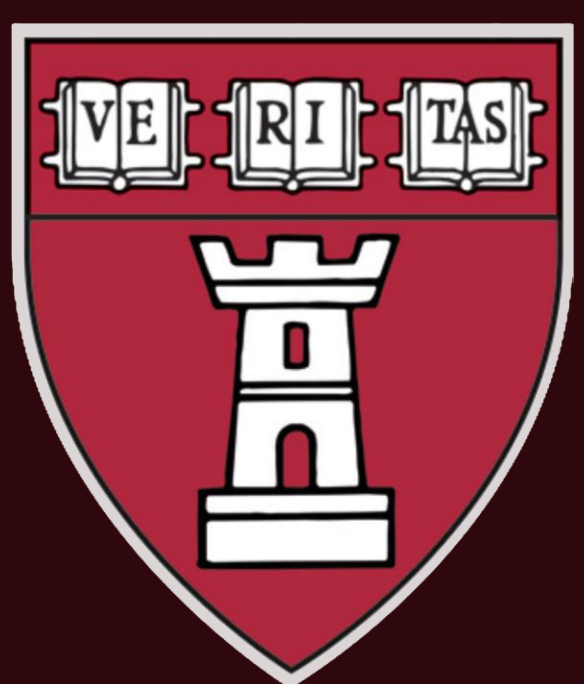
Table 2. Average and total number of teeth lost (including third molars) due to all causes or exclusively periodontal causes (N=19).



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