

**FIGURE 1:**  
Orthopantomogram sent with referral letter.

**FIGURE 2:** Clinical photograph of anterior teeth showing appearance of gingival tissues immediately following periodontal probing; there is an absence of bleeding in a never smoker, although some reformed calculus is visible.

## Application of the new periodontal classification: part 3

The third in our series on the implementation of the 2017 World Workshop classification of periodontal and peri-implant diseases and conditions in daily practice looks at two cases from Cork University Dental School and Hospital.

### Introduction

The World Workshop on the Classification of Periodontal and Peri-implant Diseases and Conditions was convened in 2017 and resulted in the publication of a new classification system in 2018.<sup>1</sup> This replaces the formerly used 1999 (Armitage) Classification.<sup>2</sup> The complete Workshop proceedings are available to clinicians for free online via the European Federation of Periodontology (EFP) website.<sup>3</sup>

The new process for diagnosing and classifying cases of periodontitis incorporates staging and grading of each case.<sup>4</sup> At its simplest, the stage represents an interpretation of periodontitis severity and complexity of management of the case. The grade provides supplemental evidence on the historic rate of disease progression, and can help to identify cases where risk



factors exist and/or where expected outcomes of therapy may be less favourable.<sup>5</sup>

Diagnostic decision trees may be of value to practitioners in applying the new classification in daily practice. The current series utilises the decision tree published by the British Society of Periodontology (BSP),<sup>6</sup> as this arguably represents the simplest approach to classifying periodontitis cases.

### CASE 1

This case assimilates patient history, and clinical and radiographic findings, from a 50-year-old female patient who attended the Cork University Dental School and Hospital (CUDSH) for prosthodontic assessment, in order to establish options for replacement of the upper canine space (**Figures 1-2**). To assist readers in understanding the new classification system, the rationale for the clinical diagnosis of her periodontal condition is presented.

Although other clinical diagnoses are present in this case, only periodontal assessment and diagnosis have been included for the purpose of this paper. The case is an example of the difficulties associated with applying the classification system and subsequent staging and grading categories within the



**Cristiane da Mata**  
Lecturer in Restorative  
Dentistry, Cork University  
Dental School and  
Hospital.



**Martina Hayes**  
Senior Lecturer in  
Restorative Dentistry,  
Cork University Dental  
School and Hospital.



**Prof. Anthony Roberts**  
Professor of Restorative  
Dentistry, Cork University  
Dental School and  
Hospital.

**Corresponding author:** Prof. Anthony Roberts, Cork University Dental School and Hospital, Wilton, Cork  
E: a.roberts@ucc.ie T: 021-490 1165

scheme to a patient and their biological and pathological processes. The patient was referred to the CUDSH by her general dental practitioner to discuss treatment options for the replacement of the space in the upper left canine region. The dental hygienist in the general dental practice had provided a course of non-surgical periodontal treatment three months before the patient was seen in the CUDSH.

### Case presentation: patient history

**Table 1: Overview of case presentation.**

Patient:	50-year-old female
Presenting complaint:	Pain lower left quadrant
Medical history:	5mg Tritace (Ramipril) once a day for management of hypertension
Smoking status:	Never smoker
Family history of periodontitis:	Patient unaware
Other risk factors:	No

**Table 2: Summary of clinical findings.**

Visual assessment:	Healthy pink gingiva with stippled appearance
Probing pocket depths:	<3mm at all sites
Clinical attachment loss:	1-4mm
Bleeding on probing:	8%
Plaque control:	Good
Tooth mobility:	None
Furcation involvement:	Grade 1 47
Tooth loss due to periodontitis:	None
Other factors of relevance:	No history of previously extracted 48 – a consideration when considering bone loss for last standing molars.

### RADIOGRAPHIC FINDINGS

Bone loss present:	Yes
Pattern of bone loss:	Horizontal
Severity of bone loss:	10-50%
Distribution:	Generalised

### Clinical findings

#### What is the diagnosis using the new classification?

The diagnosis in this case is: ■ generalised periodontitis;  
■ Stage III, Grade B; and, ■ currently stable.

#### How this diagnosis was reached

- This is a periodontitis case since clinical attachment loss is present at  $\geq 2$  non-adjacent teeth.
- This is generalised periodontitis as greater than 30% of teeth are affected by attachment loss/bone loss. The radiographic bone loss is due to periodontitis.
- Stage III was selected based on the site of the greatest bone loss severity, which has bone loss in the mid-third of the root (distal of the 47). Bone loss around the retained root (46) was not due to periodontitis and is therefore not considered.
- Grade B was selected based on calculation of the ratio of percentage bone loss at the worst-affected tooth divided by patient age. In this case, the ratio is 0.5-1.0 (50% [bone loss]  $\div$  50 [age] = 1.0). Note the borderline categorisation where 0.5-1.0 is Grade B and >1.0 is Grade C.
- The disease is currently stable based on the absence of probing pocket depths (PPDs)  $\leq 4$ mm and a bleeding on probing (BOP) of <10%, with no BOP at 4mm sites.
- Risk factor assessment: disease moderators were not present.
- The case could be defined as “clinical health on a reduced periodontium in a stable periodontitis patient”. It is the opinion of the authors that this

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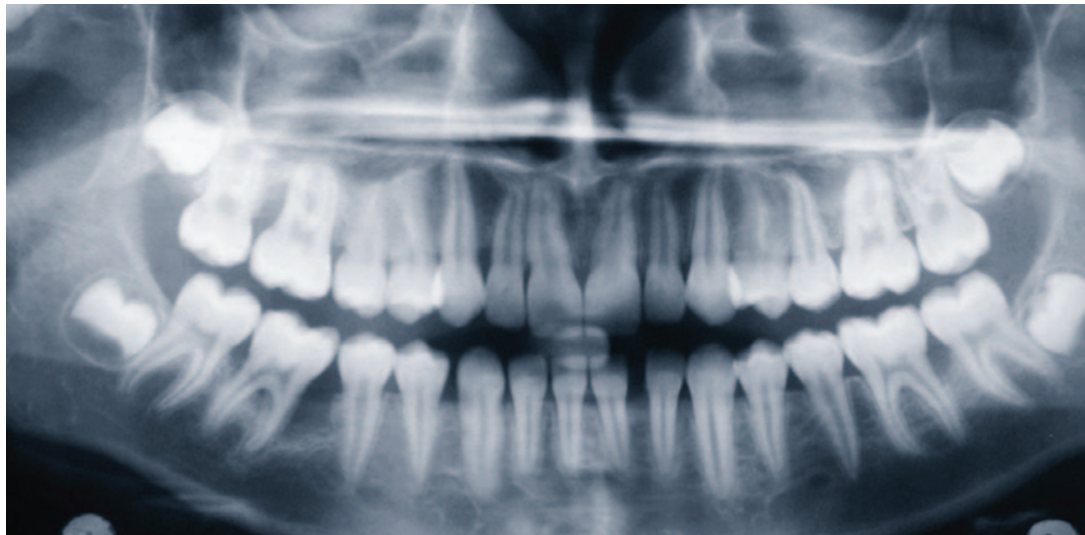


FIGURE 3:  
Orthopantomogram of  
patient taken at initial  
assessment.

FIGURE 4:  
Clinical photograph at initial  
presentation at CUDSH.  
Note minimal signs of  
inflammation with  
periodontitis identified on  
probing and subsequent  
radiographs emphasising the  
importance of periodontal  
probing.

denotation might undermine the ethos that once a patient is defined as being a “periodontitis patient”, that they should remain in this category.

## CASE 2

This case assimilates patient history, and clinical and radiographic findings from a 15-year-old female patient, who was referred to the CUDSH Periodontal Department by her GDP due to periodontal pocketing that had been identified during a routine recall appointment (Figures 3-4). To assist readers in understanding the new classification system, the rationale for the clinical diagnosis is presented.

Although other clinical diagnoses are present in this case, only periodontal assessment and diagnosis have been included for the purpose of this paper. The case is an example of the difficulties associated with categorising patients within the scheme. For example, the case illustrated is periodontitis with a molar-incisor predilection; however, in the authors’ experience, this is not a ‘typical’ presentation, as ‘usually’ the central incisors and first permanent molars would be affected.

## Case presentation: patient history

Table 3: Overview of case presentation.

Patient:	15-year-old female
Presenting complaint:	Referred by GDP due to the presence of periodontal pocketing
Medical history:	No significant medical history
Smoking status:	Non-smoker
Family history of periodontitis:	Yes (sister had previously been diagnosed with periodontitis molar-incisor pattern)

Table 4: Summary of clinical findings.

Visual assessment:	Overall good gingival colour and contour
Probing pocket depths:	1-9mm
Clinical attachment loss:	0-9mm
Bleeding on probing:	15%



Plaque control:	Good
Tooth mobility:	Nil
Furcation involvement:	16, 46
Tooth loss due to periodontitis:	Nil
Other factors of relevance:	Nil

## RADIOGRAPHIC FINDINGS

Bone loss present:	Yes
Pattern of bone loss:	Vertical – associated with 16, 12, 36, 46
Severity of bone loss:	0-70%
Distribution:	Localised (<30%) and restricted to molars and incisors

## Clinical findings

### What is the diagnosis using the new classification?

The diagnosis in this case is:

- periodontitis molar-incisor pattern;



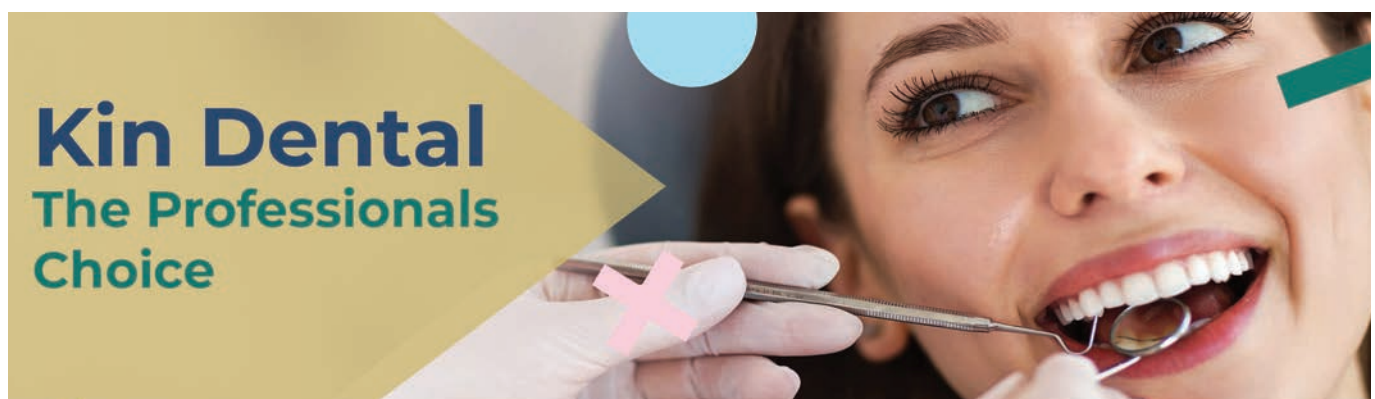
- Stage IV, Grade C; and,
- currently unstable.

#### How this diagnosis was reached

- This is a periodontitis case as clinical attachment loss is present at  $\geq 2$  non-adjacent teeth.
- This is a periodontitis molar-incisor pattern case as only incisors and molars are affected by attachment loss/bone loss. This could be determined as localised periodontitis but given the predilection of molars and incisors alongside the strong genetic predisposition, then periodontitis molar-incisor pattern has been determined.
- Stage IV was selected based on the site of greatest bone loss severity (based on the radiographic assessment: approximately 60% radiographic bone loss at tooth 46 equating to the middle third of the root).
- Grade C was selected based on calculation of the ratio of percentage bone loss at the worst-affected tooth divided by patient age. In this case, the ratio is  $>1$  ( $70\% [\text{bone loss}] \div 15 [\text{age}] = 4.7$ ).
- The disease is currently unstable based on the presence of PPDs  $\geq 5\text{mm}$ .
- Risk factor assessment: genetic predisposition.

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