Application of the new periodontal classification: Part 2

The second part of our series on the application of the 2017 World Workshop classification of periodontal and peri-implant diseases and conditions in daily practice presents two further clinical cases.

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.[1] This replaces the formerly used 1999 (Armitage) Classification.[2] The complete Workshop proceedings are available to clinicians for free online via the European Federation of Periodontology (EFP) website.[3]

The new process for diagnosing and classifying cases of periodontitis incorporates staging and grading of each case.[4] At its simplest, the stage represents an interpretation of periodontitis severity and the 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.[5]

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),[6] as this arguably represents the simplest approach to classifying periodontitis cases.

CASE 1

This case assimilates patient history, clinical and radiographic findings from a 54-year-old female patient who attended the Dublin Dental University Hospital (DDUH) for periodontal assessment, in order to establish a clinical case diagnosis (**Figures 1** and **2**). To assist readers in understanding the new classification system, the rationale for the clinical diagnosis is presented.

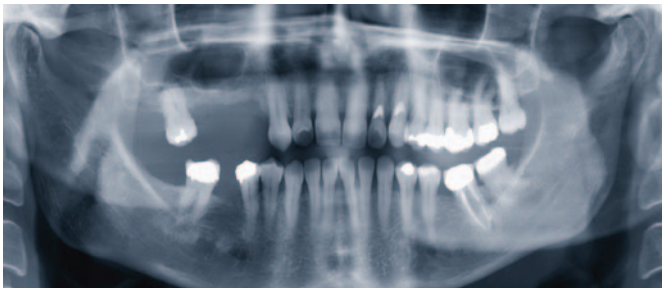

FIGURE 1: Orthopantomogram (OPG) of patient taken at initial periodontal assessment.

FIGURE 2: Clinical photograph at initial presentation at DDUH.

Case presentation: patient history

Table 1: Overview of case presentation.

Patient:	54-year-old female
Presenting complaint:	"I'm conscious of the gap on my upper right side"
Medical history:	No significant medical history
Smoking status:	Non-smoker
Family history of periodontitis:	No
Other risk factors:	No

Table 2: Summary of clinical findings.

Visual assessment:	Relatively good tissue tone and colour
Probing pocket depths:	1-5mm
Clinical attachment loss:	2-6mm
Bleeding on probing:	35%
Plaque control:	Fair
Tooth mobility:	Nil
Furcation involvement:	Grade 1 mesial and distal 1.7
Tooth loss due to periodontitis:	Nil – all lost to repeated restoration failure and peri-apical infection
Other factors of relevance:	Poorly adapted restorative margins

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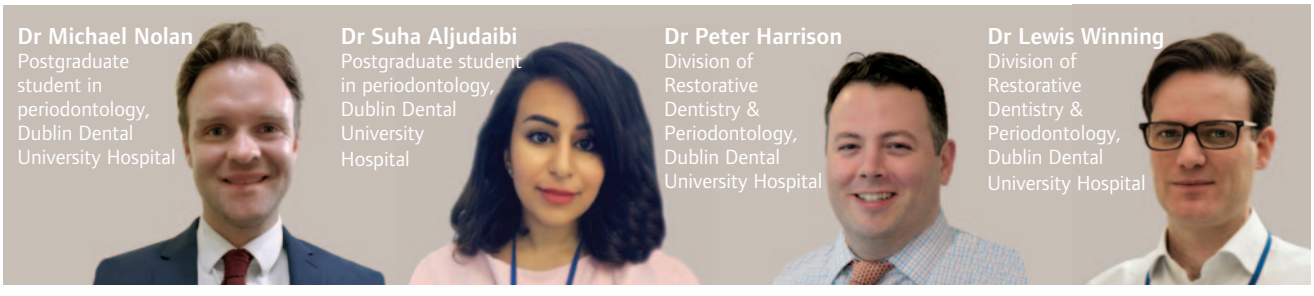


RADIOGRAPHIC FINDINGS:

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

Clinical findings

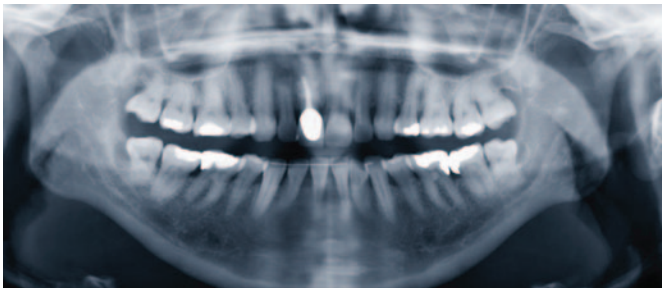
What is the diagnosis using the new classification?

The diagnosis in this case is:

- generalised periodontitis;
- Stage III, Grade B; and,
- currently unstable.

How this diagnosis was reached

- This is a periodontitis case as clinical attachment loss is present at ≥2 non-adjacent teeth.
- This is a generalised periodontitis case as >30% of teeth are affected by attachment loss/bone loss.
- Stage III was selected based on the site of greatest bone loss severity based on the radiographic assessment: approximately 50% radiographic bone loss at tooth 1.7 equating to the middle third of the root.
- 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 and <1 (50% [bone loss] ÷ 54 [age] =0.93).
- The disease is currently unstable based on the presence of probing pocket depths (PPDs) ≥5mm.
- Risk factor assessment: disease moderators were not present and the periodontal destruction was commensurate with the biofilm deposits present and level of oral hygiene.



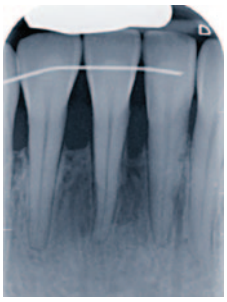


FIGURE 3 (ABOVE): Orthopantomogram (OPG) of patient taken at initial periodontal assessment.

FIGURE 4 (LEFT): Intra-oral periapical radiograph of mandibular anterior teeth.

FIGURE 5 (BELOW): Clinical photograph following plaque disclosure at initial presentation at DDUH.

CASE 2

This case assimilates patient history, and clinical and radiographic findings, from a 34-year-old female patient who attended the Dublin Dental University Hospital (DDUH) for periodontal assessment, in order to establish a clinical case diagnosis (**Figures 3-5**). To assist readers in understanding the new classification system, the rationale for the clinical diagnosis is presented.

Case presentation: patient history

Table 3: Overview of case presentation.

Patient:	34-year-old female
Presenting complaint:	Receding gums, tooth sensitivity
History of presenting complaint:	Recession present since age 16; previous orthodontic treatment
Medical history:	No significant medical history
Smoking status:	Current smoker (15 cigarettes/day)
Family history of periodontitis:	No

Table 4: Summary of clinical findings.

Visual assessment:	Thin gingival biotype, gingival recession evident (8mm at buccal 41)
Probing pocket depths:	Range 4-7mm
Clinical attachment loss:	Range 1-7mm
Bleeding on probing:	23%
Plaque control:	Fair
Tooth mobility:	Grade I mobility at 4,1; 4,2; 3,1; 3,2
Furcation involvement:	Class II 2.7
Tooth loss due to periodontitis:	No
Other factors of relevance:	Iatrogenic factors (overhanging restoration 3,6 and 3,7)

RADIOGRAPHIC FINDINGS:

Bone loss present:	Yes
Pattern of bone loss:	Mainly horizontal with localised vertical components
Severity of bone loss:	Range 10-40% coronal third to mid third of the root
Distribution:	Generalised (>30% teeth)

Clinical findings

What is the diagnosis using the new classification?

The diagnoses in this case is:

- generalised periodontitis;
- Stage III, Grade C;
- currently unstable;
- risk factors: current smoker; and,
- localised recession defect 4,1 (RT 2).

How this diagnosis was reached

- This is a periodontitis case as clinical attachment loss is present at ≥2 non-adjacent teeth.
- This is a generalised periodontitis case as >30% of teeth are affected by attachment loss/bone loss.
- Stage III was selected based on the site of greatest bone loss severity (based on the radiographic assessment: approximately 40% radiographic bone loss at tooth 4.1, equating to the middle third of the root).
- Grade C was chosen 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 (40% [bone loss] ÷ 34 [age] =1.18).
- The disease is currently unstable based on the presence of probing pocket depths (PPDs) ≥5mm.
- Risk factor assessment: the patient is a current smoker.
- The present case contains additional subtlety in the presence of a notable gingival recession lesion at 4.1. Gingival recession is not specifically addressed in the simplified decision trees, where the focus is primarily on staging and grading of periodontitis. The recession lesion at 4.1 was classified using the system of recession type (RT) proposed by Cairo *et al.*, (2011),[7] which was adopted in the new classification.[8] RT 2 describes a gingival recession lesion that is associated with interproximal attachment loss. In RT 2 cases, the interproximal attachment loss is less than or equal to the attachment loss seen at the buccal aspect.

References

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