Periodontal diagnosis in the context of the 2017 classification system of periodontal diseases and conditions: presentation of a patient with periodontitis localised to the molar teeth

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Key points

Presents a case that would have previously been classified using the 1999 classification system as localised aggressive periodontitis.	Discusses diagnosis using the new classification system.	Illustrates extent description as molar-incisor pattern (MIP).

The objective of this case report is to illustrate the diagnosis and classification of periodontitis, according to the 2017 classification system, as recommended in the British Society of Periodontology (BSP) implementation plan. A 37-year-old female was diagnosed with periodontitis (molar-incisor pattern), stage III, grade C, currently unstable. Several issues pertinent to the diagnosis of localised forms of periodontitis in young patients are discussed in relation to the current and previous classification systems. Periodontitis can be limited to a few sites and this case highlights the importance of the careful application of the basic periodontal examination (BPE).

Introduction

The 2017 classification of periodontal diseases and conditions no longer primarily distinguishes different types of periodontitis based upon age of disease onset or rate of progression.[1–3] However, in addition to staging and grading of periodontitis, which captures the severity of periodontitis and the patient's past

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disease susceptibility/rate of progression, the system also requires the description of disease extent. In addition to generalised (≥30% of teeth with attachment loss or bone loss due to periodontitis) and localised (<30% of teeth) periodontitis, the new 2017 classification recognises molar-incisor pattern (MIP) as a distinct extent pattern.[3]

In this case presentation, we report on a patient with periodontitis formerly (using the 1999 classification system) classified as localised aggressive periodontitis. We demonstrate, step-by-step, how the BSP recommendations for implementation of the 2017 classification system can be applied in practice to reach an appropriate periodontal diagnosis.

Case report

A 37-year-old female patient presented complaining of bleeding from her gums when brushing and when biting into hard foods. There was a 12-month history of her symptoms, which initially occurred every few days, but which had become progressively more frequent

in recent months and the bleeding was now evident daily. The patient was medically in good health, was never a smoker and reported relatively low stress levels. There was a family history of periodontitis.

Intraoral clinical examination revealed localised marginal gingival inflammation (Fig. 1), with a plaque score of 14% and minimal deposits of supra- and sub-gingival calculus. As part of the initial patient assessment, a BPE screening examination was performed (Table 1), as there was no clear and obvious interproximal recession. The BPE included two scores of 'code 4', providing a provisional diagnosis of periodontitis and triggering a full periodontal assessment, including a full mouth six-point pocket chart, bleeding scores and appropriate radiographs.

The detailed periodontal chart revealed localised deep pockets with probing depths ranging from 4–7 mm and with associated bleeding on probing. The 16 and 36 had the deepest pockets. Recession was localised and no greater than 1 mm. There was no apparent furcation involvement (Fig. 2). The dental

panoramic radiograph and supplemental periapical radiographs showed localised bone loss, most significantly affecting the 16 and 36; where there were associated vertical bone defects, with bone loss of up to 50% (Fig. 3).

Hence, given the history (that is, lack of systemic disease explaining loss of periodontal attachment/bone) and the clinical and radio-logical findings (interproximal attachment loss/alveolar bone loss due to periodontitis, no papillary necrosis consistent with necrotising periodontal disease), a diagnosis of periodon-titis was made.

For every patient diagnosed with peri-odontitis, staging and grading should then be performed to classify the case further.[1] When considering the stage of periodontitis, interproximal bone loss at the worst site of bone loss (due to periodontitis) needs to be assessed. Here, the bone loss reaches the mid third of the root but does not extend into the apical third. Therefore, this patient has stage III periodontitis. When considering the grade, the percentage bone loss is divided by the patient's age. Maximum bone loss of approximately 50% is seen around the 16 and 36. As the patient is 37 years of age, the numerical value of the highest percent bone loss exceeds the numerical value of her age (% bone loss/age ratio > 1.0), which results in an assignment of grade C. Less than 30% of teeth are affected by bone loss due to periodontitis, resulting in a 'localised' extent. However, as only molars are affected, the extent can further be described as molar-incisor pattern. When assessing the current periodontal status, as there are peri-odontal probing depths of more than 4 mm that bleed on probing, this patient is currently unstable. There are no significant lifestyle risk factors for this patient. Therefore, the definitive diagnosis, according to the 2017 classification, is periodontitis (molar-incisor pattern), stage III, grade C, currently unstable.

This case would have been classified as localised aggressive periodontitis using the previous classification system. Following treatment and at the reassessment stage, it is important to remember that the outcome of treatment will not change the initial disease classification of periodontitis stage III, grade C. This patient will always be a periodontitis patient, with evidence of high disease suscep-tibility (as indicated by grade C), requiring careful and intensive periodontal maintenance. The periodontal status may, however, change to 'currently stable' or 'currently in remission'.

Fig. 1 Clinical photographs

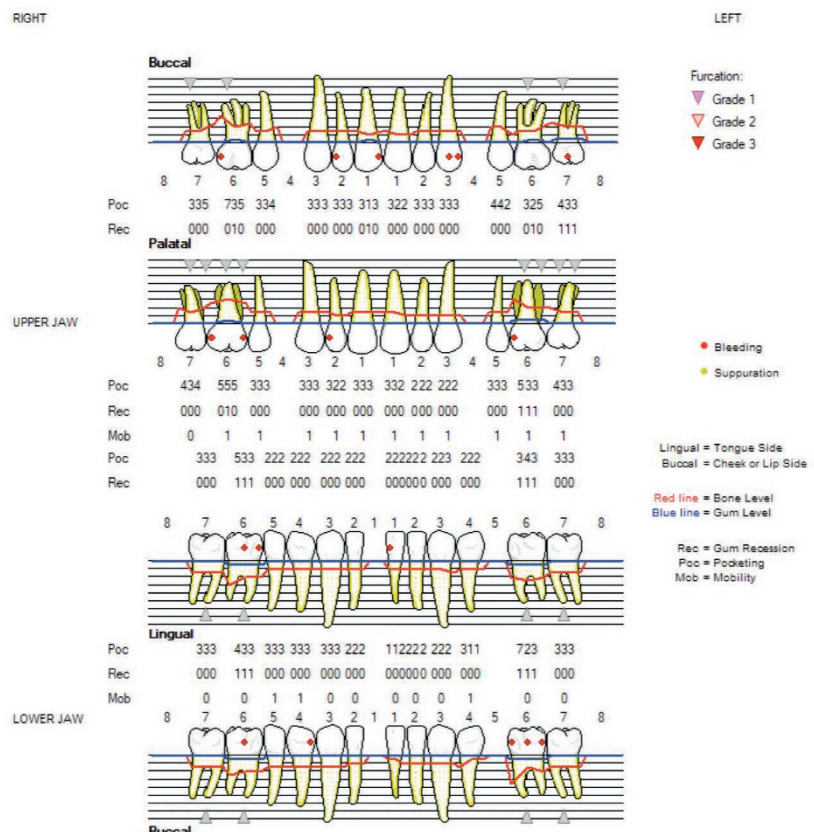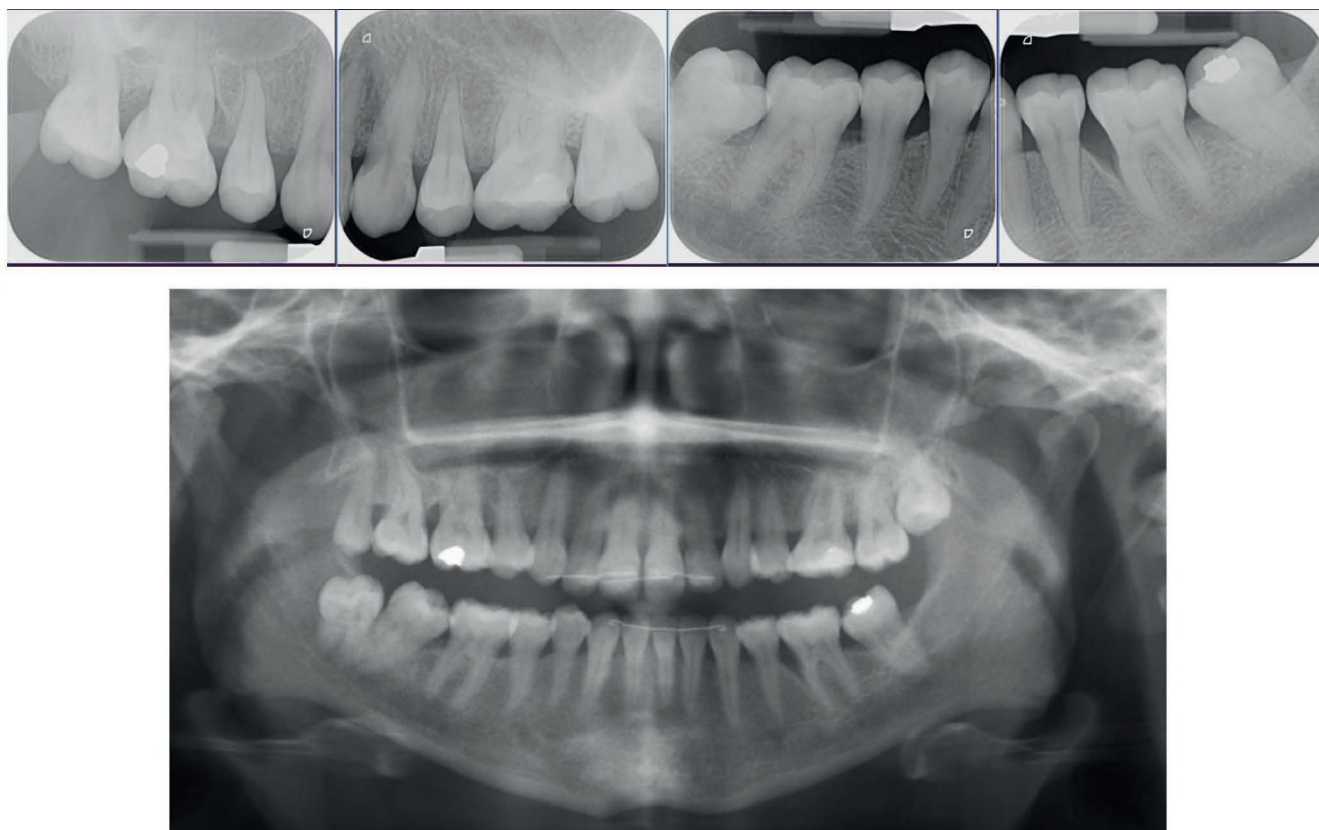| Table 1 BPE scores		
4	2	3
3	2	4

Fig. 2 Six point pocket chart

Fig. 3 Radiographs – DPT & periapicals

Discussion and summary

This case report provides an example of periodontal diagnosis according to the 2017 Classification of Periodontal Diseases and Conditions by following the BSP implementation plan. In the new system, this patient is diagnosed with periodontitis (molar-incisor pattern), stage III, grade C. According to the 1999 classification, this patient would have been classified as localised aggressive periodontitis. The new 2017 classification system makes explicit the different components that have always formed part of the description of periodontitis: severity (stage), extent, and susceptibility (grade). Specifically, the grade C classification of this patient indicates high disease susceptibility, highlighting the need for careful and intensive periodontal maintenance. The classification as stage III periodontitis indicates that severe loss of periodontal tissues has already occurred; however, the description of the extent as molar-incisor pattern appropriately highlights the specific disease distribution.

The recognition of molar-incisor pattern as a distinct extent pattern was the subject of some debate during the 2017 classification workshop. Localised juvenile periodontitis (LJP), included as a distinct diagnosis in the

1986 classification system and replaced by the term 'localised aggressive periodontitis' in the 1999 classification, has been defined by its characteristic distribution pattern, that is, 'localised 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'.[4] In the 2017 classification workshop, this phenotype has been adopted as a distinct extent type 'molar-incisor pattern'.

Whilst the '/' between 'molar' and 'incisor' does not state 'or', it is generally regarded as meaning 'either/or' and thus allows for only molar involvement, but it does not allow for incisor involvement alone. The presented case therefore fits with the 1999 definition of Localised Aggressive Periodontitis. The 2017 classification does not specify details of the exact definition of MIP periodontitis, and therefore is assumed to map across to the original definition of Localised Aggressive Periodontitis.

It is also important to note that a molar-incisor pattern can also arise in young people who experience a chronic form of disease.[5]

Interestingly, the patient presented here would not have fitted the diagnostic criteria

for LJP in the pre-1999 era, as she was 37 years old at the time of diagnosis. Hence, the present case illustrates that the extent description of molar-incisor pattern in the 2017 classification system is not necessarily equivalent to what would have been a diagnosis of LJP in the 1989 classification. However, it should be noted that one cannot rule out disease onset during adolescence, as no previous patient records were available and LJP has been reported to have the potential to 'burn-out' or 'self-arrest'.[6]

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