

Management of Drug Influenced Gingival Enlargement  
The British Society of Periodontology and Implant Dentistry Case Report

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Initial presentation

This 51-year-old male patient was referred to the department for management of his gingival enlargement and periodontitis. The patient's presenting complaints were those of "difficulty cleaning around the swollen gums" and "I would like the gums to look better".

Medical history

The patient had been taking Levetiracetam and Phenytoin long term for management of his epilepsy and had regular haematological monitoring with his General Medical Practitioner (GMP). The patient was a previous smoker of 15 cigarettes per day for 25 years but had stopped in 2015.

Pre-operative radiograph



Pre-operative orthopantomogram demonstrating the pattern and extent of periodontal bone loss. Although good quality OPGs alone can be used for assessment of periodontal support, this image demonstrates faults that can occur with incorrect patient positioning including overlapping of teeth on the left-hand side and teeth lying outside of the focal trough.

Pre-operative photographs





Diagnoses

- Generalised periodontitis Stage 4 Grade C, currently unstable with risk factors of suboptimal self-performed plaque control
- Generalised drug influenced gingival enlargement, particularly affecting the interdental papillae

Treatment strategy

Step 1	<p><b>Preventive phase to address underlying risk factors:</b></p> <ul style="list-style-type: none"> <li>- Full periodontal assessment.</li> <li>- Tailored oral hygiene instruction with the aim of reducing plaque scores to &lt;20%.</li> <li>- Alteration to the patient’s medications was not a possibility following correspondence with the patient’s GMP.</li> </ul>
Re-evaluation of patient engagement	
Step 2	<p><b>Subgingival instrumentation:</b></p> <ul style="list-style-type: none"> <li>- Full mouth subgingival professional mechanical plaque removal (PMPR).</li> </ul>
Periodontal review at 3 months to assess response to treatment	
Step 3	<p><b>Management of non-responding sites:</b></p> <ul style="list-style-type: none"> <li>- Further cycle of subgingival professional mechanical plaque removal</li> <li>- Surgical gingivectomy and debulking in areas of persistent gingival enlargement (buccal and lingual of the LR6, LR5, LR4 and LL4, LL5, LL6).</li> </ul>
Step 4	<p><b>Maintenance phase:</b></p> <ul style="list-style-type: none"> <li>- Package of 3-monthly supportive periodontal care implemented with the patient’s own dental team.</li> </ul>

Surgical management photographs



An external bevel incision was used to resect the enlarged papilla and thinning of the enlarged tissue was performed marginally.



Coe-Pak (GC-dental, Tokyo, Japan) periodontal dressing in place after surgery. Whilst periodontal dressings aim to protect the surgical site and aid with patient comfort during function, there is little evidence to demonstrate improved healing of surgical sites in comparison to those without a dressing. The dressing was removed after 10 days, at which point the patient was advised to resume toothbrushing with a soft brush. The patient was further reviewed 1 month after surgery when instruction on interproximal cleaning was given.

#### Post-operative photographs



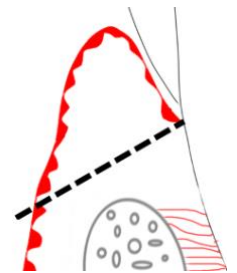
#### Discussion

Drug influenced gingival enlargement<sup>1</sup> requires two factors to occur. Firstly, the patient will be taking a medication such as an anti-epileptic (as in this case report), a calcium-channel blocker or an immunoregulatory medication<sup>1</sup>. Secondly, the presence of a dental biofilm<sup>1</sup>. The combination of these two factors results in a dysregulation of fibroblast function leading to an accumulation of connective tissue<sup>2</sup>, in which up to 50% of patients taking phenytoin can be affected by gingival enlargement<sup>3</sup>. To be classified as drug influenced gingival enlargement, the size of the gingivae should be greater than would be expected from a purely inflammatory induced enlargement<sup>1</sup>.

Whilst the history and appearance of the gingivae in this case are classical of drug influenced gingival enlargement (granular-like lesions that coalesce to form lobules at the interdental papillae)<sup>2</sup>, consideration should also be given to other causes. For example, gingival enlargements as a result of leukaemia may appear more inflamed and spongy, and the patient's full blood count would give an indication as to the underlying cause.

The first phase of any periodontal treatment plan is to reduce and control identifiable risk factors<sup>4</sup>, and this is especially important in the management of drug influenced gingival enlargement given the heightened response to dental biofilm found in these patients. The aim for this patient prior to progressing to professional mechanical plaque removal was to achieve a plaque score of <20% as defined by the British Society of Periodontology and Implant Dentistry as an engaging patient<sup>5</sup>. Consideration was given to altering the patient's medications in this first phase of treatment through liaising with the GMP<sup>6,7</sup>, however given the long-term success of phenytoin in controlling this patient's seizures, the GMP did not believe the benefits outweighed the risks.

In the majority of sites, the first two phases of treatment greatly improved the drug influenced gingival enlargement. For the non-responding sites, a gingivectomy was undertaken using a scalpel and an external bevel incision directed to the base of the false pocket to remove the excess tissue and pocket epithelium<sup>7</sup> (see adjacent diagram). A resective approach was deemed suitable in this case given the amount of attached gingiva that was present pre-operatively.



As demonstrated in the post-operative photographs, a significant improvement in the appearance of the gingiva was achieved through a combination of improved plaque control, non-surgical and surgical periodontal therapy. Whilst there has been an improvement in the appearance of the gingiva, the patient is still undergoing treatment for non-responding sites of periodontitis<sup>8</sup>. Once the patient's periodontitis has been stabilised, he will be discharged back to his primary care practitioner with a supportive periodontal care plan<sup>8</sup>. In patients where the causative medication has/could not be changed there is a chance of recurrence<sup>6</sup> of the gingival enlargement, and compliance with plaque control and supportive care regimes is of paramount importance.

#### References

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