Clinicians can use 5 strategies to save time and minimize repeat visits for patients who have problems with their complete or removable partial dentures: 1) establish the differential diagnosis, 2) identify variations from normal, 3) have the patient demonstrate the problem, 4) always use an indicating medium when making adjustments to prostheses and 5) have the patient rate perceived improvement after adjustments.

**Establish the Differential Diagnosis**

To eliminate a denture problem, its cause must first be correctly identified. Take a good history and perform a thorough clinical examination. Establish a list of potential causes (the differential diagnosis), rank them according to frequency, and begin by eliminating those most likely to be causing the problem in the particular patient. If the cause of the problem is correctly identified and addressed, the pain, ulceration and other related signs and symptoms should resolve in 10 to 14 days.\(^1\) Biopsy is mandatory for any lesion that fails to heal within 14 days after onset,\(^2\) particularly when a denture has been ruled out as the source of the ulcer. Work down the list of possible diagnoses until the problem is solved.\(^2\)

Diagnosing the problem requires a thorough history from the patient, including the following specific information:

- When did the pain start?
- How long does it last?
- What makes it better?
- What makes it worse?

Combined with information from the clinical examination, this information will help to establish the differential diagnosis, and the clinician can rank the most likely causes at the top of the list. The clinical examination should incorporate the strategies of identifying variations from normal, having denture patients demonstrate their problems and using an indicating medium.

**Identify Variations from Normal**

Many denture problems can be identified by inspecting the dentures critically for variations from normal (Figs. 1 to 7). Unusual extensions, contours, tooth positions, thickness and finish can all be sources of denture problems. Intraoral

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**Figure 1:** The posterior buccal flange of this denture is shorter than normal and should be extended to the dotted line. Compound or light-cured acrylic resin could be added to the periphery in an attempt to extend the border. When this approach was taken in this case, the patient’s denture became markedly more retentive.

**Figure 2:** The transparent areas of resin over the tuberosities provide a clue that the lower denture is contacting the upper denture, thereby causing wear to the base. Such contact can cause the denture to loosen.
Figure 3: Severe and uneven wear on these dentures is responsible for esthetic problems, discomfort and difficulty chewing.

Figure 4: The distolingual flange of this mandibular denture looks different from a typical flange. Normally, the flange contour will either proceed straight down or arc gently downward and forward from the pear-shaped pad, but this one extends too far posteriorly from the position of the retromolar pad. This overextension caused pain on swallowing.

Figure 5: This patient had multiple sore spots associated with the denture, and previous adjustments to the denture bases had not provided any relief. The denture midlines are off, and the denture teeth in the second and third quadrants are meeting cusp to cusp, which suggests that poor occlusion could be the cause of the patient’s problems.

Figure 6: Posterior interferences between the denture bases can cause tipping of the dentures, which results in pain similar to that caused by occlusal problems.

Figure 7: It is usually better to place and load posterior denture teeth centrally (C) over the ridge. More tipping problems result when occlusal forces are applied buccal to the ridge (B). These tipping problems can cause both looseness and pain.

Figure 8: This patient had 3 unsuccessful maxillary partial dentures made within 1 year. Each time, she had requested only a new “upper plate and nothing else.” However, all 3 dentures had failed because of fracture of the denture teeth and severe mobility of the prosthesis. The real problem was a lack of interarch space for the prosthesis, which the care providers had failed to identify because, in taking direction from the patient, they were looking only at the maxillary arch. The lesson from this case is that the clinical examination must be thorough, to ensure that all potential problems and variations from normal are identified.

Figure 9: This patient has very tight pterygomandibular raphes (arrows). As the raphes tighten during opening, they pull on the posterior border of the denture, causing it to loosen (the patient’s chief concern). Relief for these structures should be provided during the making of the impressions. This case emphasizes that anatomic variations must be identified to minimize denture problems.

Figure 10: In this patient, the deep midline soft-tissue fissure at the posterior of the palate caused a break in the seal of the denture, which in turn caused looseness and dropping of the denture. Special attention is needed to ensure that the posterior palatal seal of the denture maintains tissue contact to provide adequate retention.
inspection for anatomic or tissue abnormalities or variants may also give clues to the cause of some denture problems (Figs. 8 to 14). If an abnormality is found and corrected, the signs and symptoms should resolve within 10 to 14 days.

**Have the Patient Demonstrate the Problem**

Asking the patient to demonstrate how the problem occurs often helps the clinician to identify its source. If the problem occurs only when the patient chews, cut a small piece of a cotton roll, dampen it, and let the patient demonstrate the location where the bolus causes the symptom (Fig. 15). If the problem occurs during speaking, singing, drinking or opening wide, have the patient replicate the circumstances. Have the patient describe what they experience, and watch carefully to determine the cause of the problem. Attempt to eliminate the cause and recall the patient in 10–14 days to ensure that the signs and symptoms have resolved.

**Use an Indicating Medium when Making Adjustments**

Clinicians usually check occlusion of restorations using an indicator such as articulating paper or shim stock. Similarly, denture adjustments are more accurate and effective when an indicating medium is used. Pressure- or fit-checking medium, indelible markers and articulating paper can all be used to aid in locating a problem and determining the degree of adjustment that is required (Figs. 16 to 20).
Box 1  Typical histories for patients with denture pain

<table>
<thead>
<tr>
<th>For pain related to occlusion</th>
<th>For pain related to denture base fit</th>
<th>For pain related to occlusal vertical dimension (OVD)(^5,6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hurts only when chewing</td>
<td>Problem starts when the patient inserts the denture, which often feels tight or causes soreness</td>
<td><strong>Insufficient OVD (Fig. 21)</strong></td>
</tr>
<tr>
<td>Gets worse with chewing</td>
<td>Patient has discomfort even when not chewing</td>
<td>Lack of chewing power</td>
</tr>
<tr>
<td>Gets worse as the day progresses</td>
<td>May or may not get worse as the day progresses</td>
<td>Minimal ridge discomfort</td>
</tr>
<tr>
<td>Patient may have to remove prosthesis late in the day because of discomfort</td>
<td></td>
<td>Angular cheilitis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chin prominent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimal display of vermilion border</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Excessive OVD (Fig. 21)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soreness over entire ridge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worse during the day (increased occlusal contact)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dentures “click” when speaking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mouth feels “too full,” patient has difficulty getting lips together</td>
</tr>
</tbody>
</table>
Have the Patient Rate Perceived Improvement after Adjustments

If a clinician asks the patient whether a denture adjustment has made the situation better, the most likely response is “yes.” But if the adjustment has improved the situation by only 20%, the patient is likely to return with the same problem at a subsequent appointment. A better question is “How does that feel?” If the patient states that it feels “better,” he or she should be asked to rate how much better, in terms of a percentage. An ulceration may not feel 100% better at the end of an appointment, but the improvement should feel closer to 90% than to 20%.

Causes of Denture Pain

Possible causes of denture pain include occlusion, denture base (fit and contour), vertical dimension, infection, a systemic disease or condition, or an allergy (rare).

It is probable, although unproven, that occlusion and poor fit of the denture base cause more repeat visits for denture-related pain than the other causes listed. The latter 3 causes (infection, disease and allergy) should never be overlooked, especially when ulcers or pain are persistent despite interventions, but for the purposes of this paper, only the first 3 causes are addressed (Box 1).

Conclusion

Many clinicians deal with denture-related pain by grinding the denture base in the area of the reported pain. This type of blanket solution is akin to a physician prescribing a broad-spectrum antibiotic to all patients who have a sore throat and runny nose. It assumes, incorrectly, that the denture base is the source of all denture pain. Clinicians can save time and minimize repeat visits for patients with denture problems when they use a systematic approach to correctly diagnose denture pain.