

Five steps to flabby ridge success

H. Imran¹

Key points

Identifies the common clinical features of flabby/displaceable tissue in edentulous patients.

Helps readers appreciate the importance of effective communication with the dental laboratory and what to include in the prescription.

Provides understanding of the importance of selective impression techniques when managing patients with flabby ridges.

Explains how to adopt a systematic approach during the clinical stages of denture construction in patients with flabby ridges.

Patients presenting with flabby or displaceable tissue continue to challenge even the most competent dental practitioners. Under compression, the denture bearing area will exhibit localised mobility around the flabby tissue. Selective impression techniques have long been used in such cases, ensuring the displaceable tissue is recorded 'at rest'. Subsequently, the denture will maintain its peripheral seal during function. This article will describe five steps in maximising the success when producing a retentive and stable removable prosthesis for flabby ridges.

Introduction

Flabby or displaceable ridges present in 24% of edentulous maxillary arches and 5% of edentulous mandibles.^{1,2} Patients commonly complain of an ill-fitting removable prosthesis and mucosal discomfort. Denture stability and support are significantly compromised due to the mobility of the underlying soft tissue.

Conventional muco-compressive and muco-static impression techniques are not suitable for such cases, as the displaceable soft tissue exhibits 'recoil' upon compression.³ Subsequently, selective impression techniques are used to record the normal denture bearing area under compression, while ensuring the flabby tissue remains undisplaced.⁴ This article will describe five key steps in producing a successful removable prosthesis for displaceable ridges using a modified window technique.

1. Examination & diagnosis

The initial consultation should involve a thorough examination of the alveolar ridge and overlying soft tissue anatomy. The Cawood and Howell (C&H) classification can be used to describe the anatomical form of the edentulous ridge.⁵ Ideally, the patient presents with a well-rounded ridge that is adequate both in height and width; Class III C&H. Additionally, any abnormalities in the

mucosal architecture must be noted (Fig. 1). Displaceable/flabby tissue commonly presents alongside characteristic features of 'combination syndrome', namely, marked resorption of the anterior maxillary ridge, hypertrophic maxillary tuberosities, papillary hyperplasia and over-eruption of the mandibular anterior teeth.⁶ Practitioners must therefore pay particular attention to patients presenting with an edentulous maxilla opposing preserved mandibular anterior teeth.

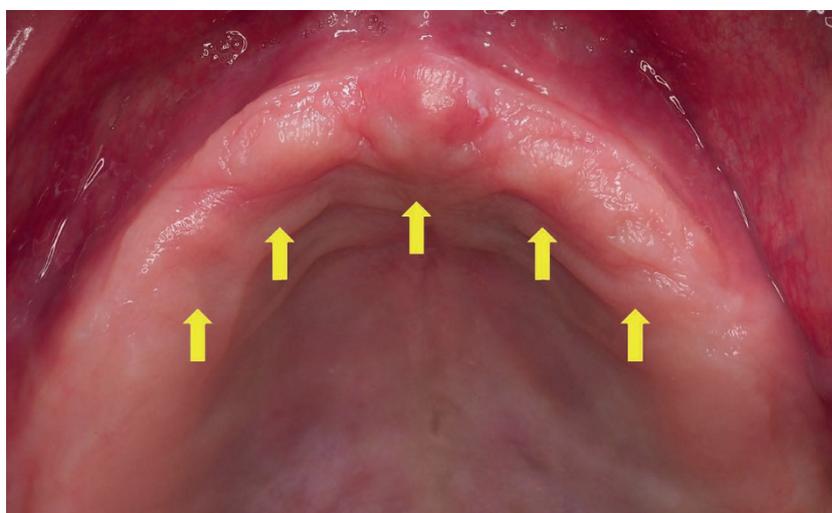


Fig. 1 Anterior 2/3 of an edentulous maxillary arch with evidence of fibrous displaceable tissue (yellow arrows)

¹General Dental Practitioner, Mint Dental Clinic, 3 St. George's Court, Garden Row, London SE1 6HD
Correspondence to: Hannan Imran
Email: hannanimran1@gmail.com

Refereed Paper.

Accepted 7 August 2018

Published online 5 October 2018

DOI: 10.1038/sj.bdj.2018.812

2. Demarcation on primary cast

Demarcating the flabby tissue on the primary cast will aid the laboratory technician when constructing the custom tray (Fig. 2). Depending on the chosen secondary

impression technique, the custom tray should be relieved or absent over the demarcated site. The thickness of the wax spacer should correspond to the desired secondary impression material, and vary between the displaceable and compressible denture bearing area. If the

'window technique' is adopted, a long tray handle, positioned mid-palate, should be requested to avoid disrupting the impression material when seating the tray intra-orally.

3. Selective impression technique

The literature describes a number of impression techniques for managing flabby tissue; however, their objective to record the displaceable tissue 'at rest' remains consistent.⁷⁻⁹ Techniques such as the window technique, the use of multiple relief holes, or recording the compressible and displaceable tissue using two separate impression materials and trays, can lead to inaccuracies.⁴ On the other hand, modern polyvinyl siloxane (PVS) impression materials are now available in multiple viscosities and handling properties, offering a solution to the difficulties associated with traditional impression techniques. Figure 3 shows a modified window technique impression, whereby light-body PVS (light green) is used to record the flabby tissue, alongside a muco-compressive record of the 'normal' tissue with zinc-oxide eugenol (pink), and functional record of the sulcus, tuberosities and post-dam with impression compound. When deciding upon which technique to use, the clinician must be comfortable with the impression material and produce consistent results.

4. Clear acrylic base

For patients with flabby ridges, it is imperative that the supporting tissue is selectively compressed to avoid recoil around the displaceable fibrous tissue. Any movement will ultimately disrupt denture cohesion and adhesion.¹⁰ A common problem encountered when assessing the denture base is the inability to gauge the pressure distribution and adaptation to the underlying supporting tissue. Subsequently, clear acrylic resin bases (Fig. 4) can be used to accurately assess uniformity of pressure distribution over the fibrous tissue, minimising the risk of displacement. The wax rims can be subsequently moulded onto the acrylic resin base to prescribe the desired vertical and horizontal dimension.

5. Try-in & insert

A systematic approach should be adopted at the wax trial and prosthesis insert stages to help identify errors that may have been introduced during processing. The wax trial provides an opportunity for the clinician to make any adjustments before processing the

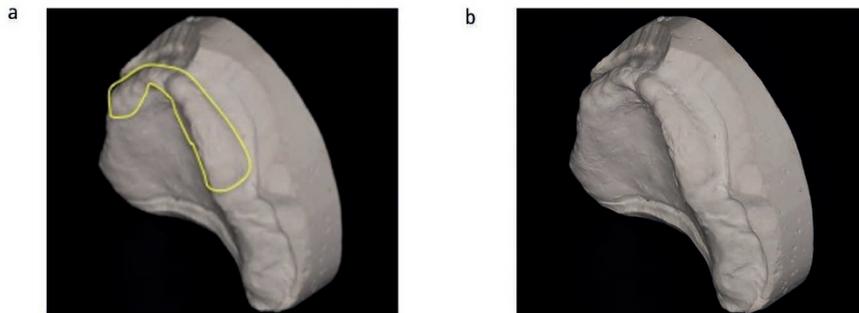


Fig. 2 Maxillary primary cast demarcated over displaceable tissue (yellow line)

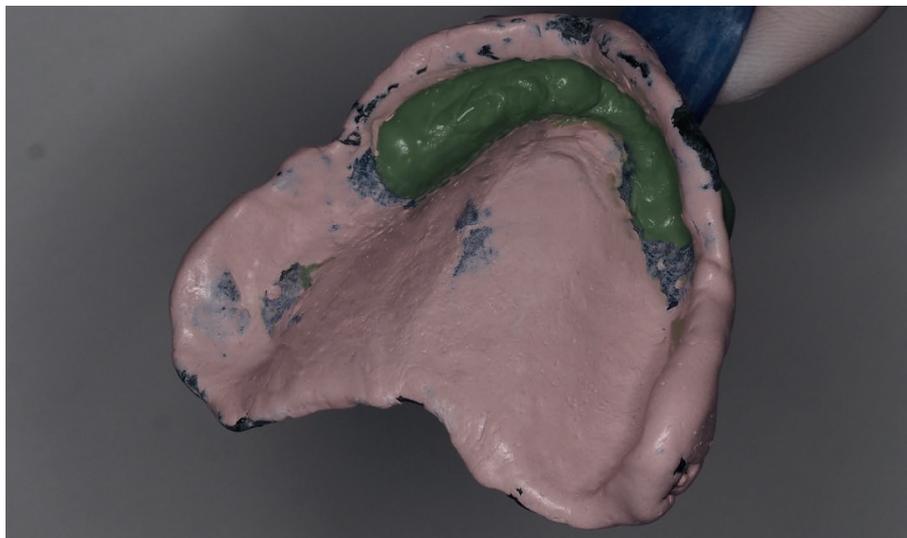


Fig. 3 Maxillary modified window technique impression with light-body PVS (light green), zinc oxide eugenol (pink) and impression compound (peripheral border)

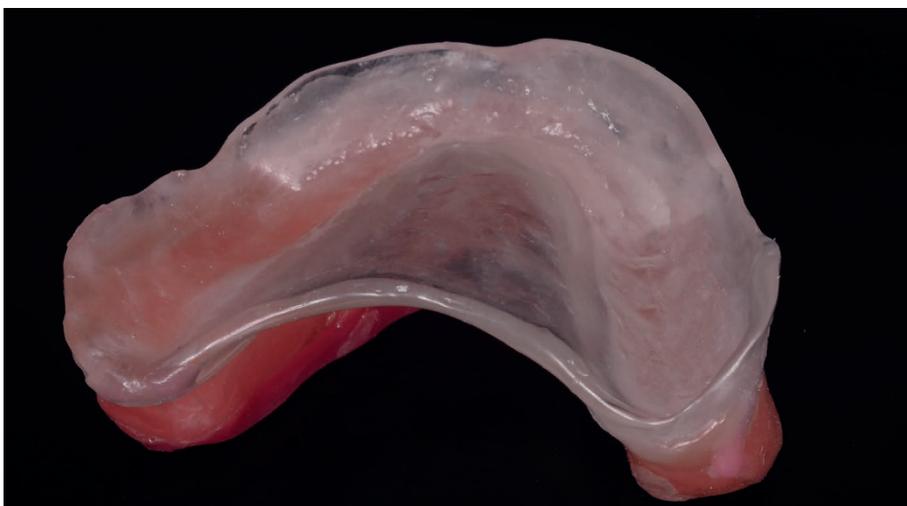


Fig. 4 Maxillary wax registration block with clear acrylic resin base



Fig. 5 Final maxillary and mandibular removable acrylic dentures *in situ*

final prosthesis (Fig. 5). Initially, the dentures should be examined while seated on the articulated working casts. Subsequent assessment of denture extensions, adaptation to the denture bearing area, stability and retention

can be performed intra-orally (Supplementary online video 1). Occlusion should be reproducible and balanced in maximum intercuspation (Supplementary online video 2) and excursive movements. The phonetics, soft tissue support,

dento-facial aesthetics (Supplementary online video 1) and most importantly, patient perception, must not be overlooked. Finally, a two-week review period will allow the patient to trial the dentures and suggest minor alterations.

1. Carlsson G E. Clinical morbidity and sequelae of treatment with complete dentures. *J Prosthet Dent* 1998; **79**: 17–23.
2. Xie Q, Narhi T O, Nevalainen J M *et al*. Oral status and prosthetic factors related to residual ridge resorption in elderly subjects. *Acta Odontol Scand* 1997; **55**: 306–313.
3. Davis D. Complete Dentures: From Planning to Problem Solving. *Br Dent J* 2004; **196**: 786.
4. Lynch C D, Allen P F. Management of the flabby ridge: using contemporary materials to solve an old problem. *Br Dent J* 2006; **200**: 258.
5. Cawood J I, Howell R A. A classification of the edentulous jaws. *Int J Oral Maxillofac Surg* 1988; **17**: 232–236.
6. Tolstunov L. Combination syndrome: classification and case report. *J Oral Implantol* 2007; **33**: 139–151.
7. Boucher C O. A critical analysis of mid-century impression techniques for full dentures. *J Prosthet Dent* 1951; **1**: 472–491.
8. Zinner I D, Sherman H. An analysis of the development of complete denture impression techniques. *J Prosthet Dent* 1981; **46**: 242–249.
9. Devan M M. Basic principles in impression making. 1952. *J Prosthet Dent* 2005; **93**: 503–508.
10. Wiens J P, Priebe J W, Curtis D A. *Journal of prosthodontics on complete and removable dentures*. Wiley, 2018.