This type of reduction in pocket depth within a few months has been widely confirmed (Chacko et al., 2014; Zamet et al., 1997; Park et al., 1998; Froum et al., 1998). At the same time, there is usually a significant increase in clinical attachment of the gingival tissue reported. However, the latter has been found to be somewhat variable, and may range from the minimal that is possibly not statistically significant (Chacko et al., 2014; Froum et al., 1998) to the very substantial (Zamet et al., 1997). These differences may be related to the extent to which the disease had progressed at the time of treatment, and in cases where the disease is more advanced and gingival detachment greater, repair at the treatment site may progress more quickly than at sites with less detachment and a correspondingly less advanced disease state (Chacko et al., 2014).

Ideally, periodontal therapy should result in the bone regenerating and the observed defects becoming filled with new bone. This has been widely observed with bioactive glass granules, such as PerioGlas (Ong et al., 1998; Chacko et al., 2014; Froum et al., 1998).

There are other benefits of using PerioGlas in this way. The material is well tolerated by the body and shows exceptional biocompatibility with the bone of the alveolar ridge. No adverse clinical effects have been reported (Chacko et al., 2014). Moreover, postoperative healing is rapid and leads to highly satisfactory clinical outcomes (Ong et al., 1998; Chacko et al., 2014; Turunen et al., 1997; Karatzas et al., 1999). Systematic literature reviews confirm that bioactive glass particles give the best clinical results in the treatment of periodontal disease (Ioannou et al., 2015; Sohrabi et al., 2012; Rai and Kalantharakath, 2014), and that they reliably reduce the probing depth of periodontal pockets and increase the clinical attachment levels of gingival tissues.

In addition to using bioactive glass alone to promote bone growth on the periodontium, it has been used in conjunction with resorbable and nonresorbable membranes (Bottino et al., 2012). The aim of these membranes is to prevent epithelial cells migrating into the underlying graft site. This allows other cell types to become attached at the graft site and these repopulate the defect and allow active bone growth to occur. This approach is known as guided tissue regeneration (Bottino et al., 2012), a process that is potentially enhanced by the additional use of growth factors blended with the glass particles (Ivanovski, 2009). However, in clinical use, the outcomes with such additional biomolecules have proved to be highly variable. Success depends *inter alia* on the specific tooth involved, the overall health of the bone at the defect site, surgical factors, and the oral health status of the patient. The potential use of blends of bioactive glass and biomolecules is currently the subject of research, and the aim is to create blends that are reliable and provide superior regenerative outcomes to the use of bioactive glass alone. However, we are some way from achieving this state of affairs.

(b) Putties containing bioactive glass particles

An alternative method of presentation of bioactive glass for periodontal treatment is as a putty (Grover et al., 2013). The commercial name of this material