Multiple pedicle flaps

A technique we stopped using because others work better

Over the last decade there has been an increasing interest in periodontal plastic surgery as an adjunct to implant surgery. This is because the harmonious integration of a tooth or implant does not depend solely on hard tissue support, but also on the soft tissue architecture. For soft tissue surgery to be successful, flaps and underlying grafts must receive adequate blood supply and nutrition. In recent years, developments have focused on minimally invasive and microsurgical techniques. These are pertinent because complications following soft tissue surgery are often difficult to correct due to scarring and pronounced tissue loss. The aim of this case report is to illustrate a classic technique for root coverage, along with its limitations.

Historically, gingival recessions were either covered using free gingival grafts or sophisticated flap techniques (lateral repositioned flaps, double pedicle flaps, or multiple pedicle flaps). The latter required multiple papilla incisions and releasing incisions in order to mobilise flaps to cover denuded root surfaces. Free gingival grafts became unacceptable due to a lack of colour match and their failure to completely cover roots. In the case of sophisticated flap techniques, it became obvious that every incision and releasing incision was associated with tissue trauma and might hamper the overall outcome. Although this might be acceptable around single type gingival recessions, flap techniques also evolved to cover multiple gingival recessions. Today, undermining techniques are used whenever possible. These involve elevating the marginal mucosa through the sulci of the affected teeth, a process that leads to predictable root coverage without scarring, and limited tissue relapse. The case that is illustrated here shows the limitations of a technique using multiple pedicle flaps.

Figure 1 depicts a clinical situation with multiple gingival recessions following periodontal therapy. To cover the recessions with attached keratinised tissue, one double pedicle flap (regio 22) and two lateral sliding flaps (regio 23, 24) were prepared (Figure 2). The flaps were elevated as partial thickness flaps and the double pedicle flaps sutured together (Fig. 3). A subepithelial connective tissue graft was harvested and sutured over the denuded root surfaces using sling sutures (Figure 4). Sling sutures were also used to fix the flaps over the connective tissue graft and denuded root surfaces (Figure 5). Healing presented uneventfully after 7 and 14 days (Figures 6 and 7), although bulky tissue and scarring tissue was already visible. The result after four months displayed an inharmonious gingival outline without complete root coverage (Figure 8). Four years after the therapy, scars and inharmonious tissue levels were still visible (Figure 9).

Conclusion

Classical flap techniques to cover gingival recessions can achieve root coverage, but often fail to achieve complete coverage and are often associated with unacceptable aesthetic outcomes. Today, tunnelling techniques are preferred in these cases.

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