

One and A Half Barrel Vascularized Free Fibular Flap for the Reconstruction of Segmental Mandibular Defect: A Case Report

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Abstract

Background

One of the options for reconstruction of segmental mandibular defect is the vascularized free fibular flap. However, difference in height between mandible and fibula causes aesthetic and functional problems. But lack of a flap wide enough to completely fill the mandibular defect is an important disadvantage for us(1). The double barrel fibula flap has been used to eliminate this disadvantage, but this flap is too large(2-4). A piece of non-vascularized residual fibula has been used as graft in addition to vascularized fibula flap(5). We designed one and a half barrel vascularized free fibular flap to overcome the disadvantages of both techniques.

Methods

Eight centimeter length mandibular body segment was excised because of giant cell reparative granuloma diagnosis. Vascularized fibular flap was harvested and shaped as follows. A small piece of bone (segment B) was removed at the middle of the flap to fold the flap (Figure 1). The distal half of the flap had been splitted longitudinally, and the bone segment away from the perforator vessels (segment D) were removed. And then two remaining fibula segments were folded, and placed in parallel to each other in the defect (Figure 2).

Results

The flap has survived. Radiography revealed bone healing between the fibula and mandible.

Conclusions

One and a half barrel technique may be a good solution for incompatibility of the sizes of the segmental mandibular defect and the vascularized fibula flap. This technique eliminates volume insufficiency of the classical technique, and volume excess of the double-barrel technique. One and a half vascularized fibula flap perfect fit for mandibular defect.

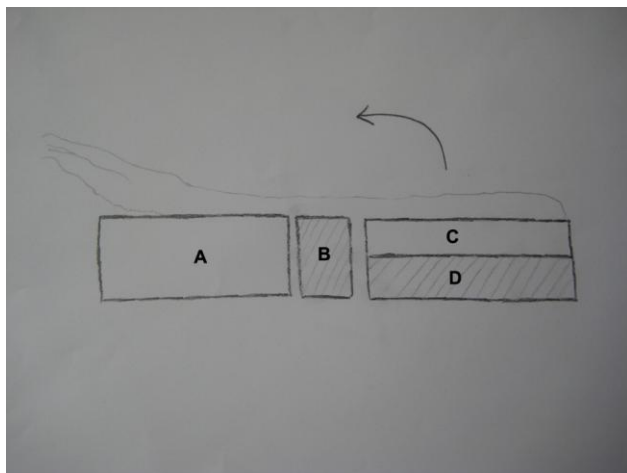


Figure 1. Schematic drawing of the flap (arrow is showing the direction of the folding)

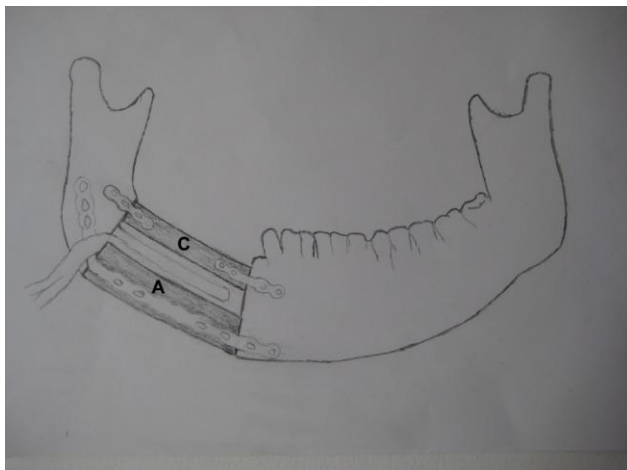


Figure 2. The final view of the flap in the defect.

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