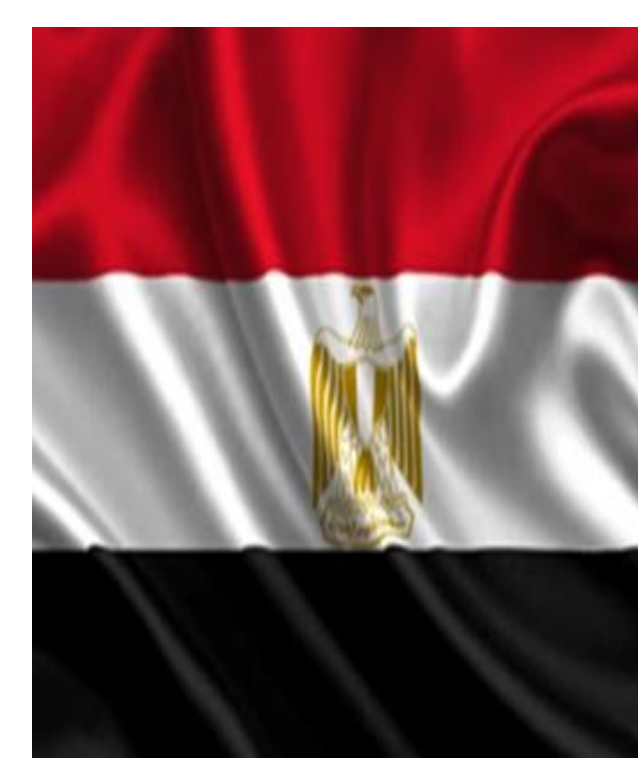
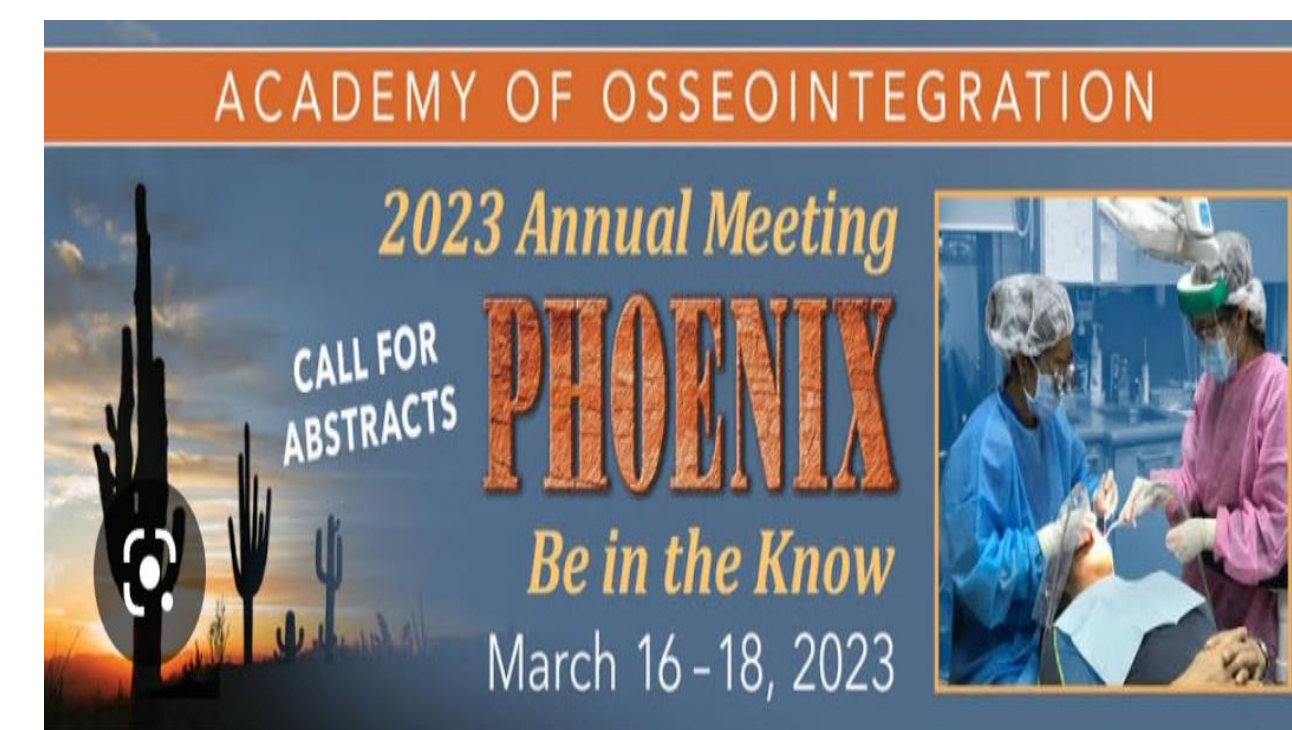




Evaluation Of Marginal Bone Loss Using Different Materials And Techniques As A Gap Filling Material In Immediate Implant Placement In Maxillary Esthetic Zone: A Randomized Clinical Trial



Mohamed Mounir, Mina Elhadidy Ragia Mounir, Mohammed Shaalan, Amr El Bahkery, Ahmed Alaa, Abdallah Farahat

oral & maxillofacial surgery department faculty of dentistry Cairo university, EGYPT

- Introduction:** The aim of the study is to evaluate marginal bone loss using different materials a gap filling material between the labial aspect of the implant and the facial surface of the socket in immediate implant placement in maxillary esthetic zone.

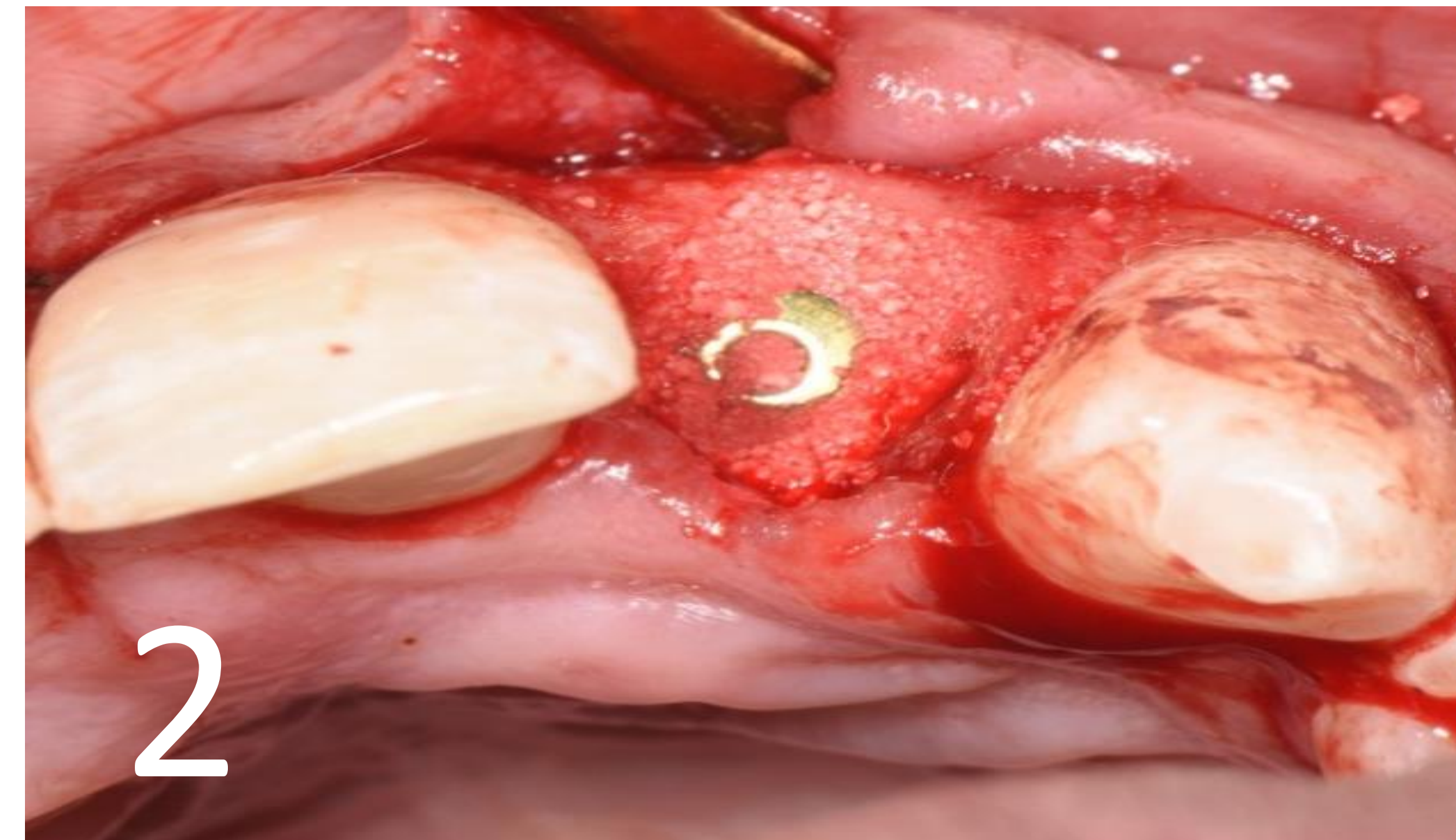
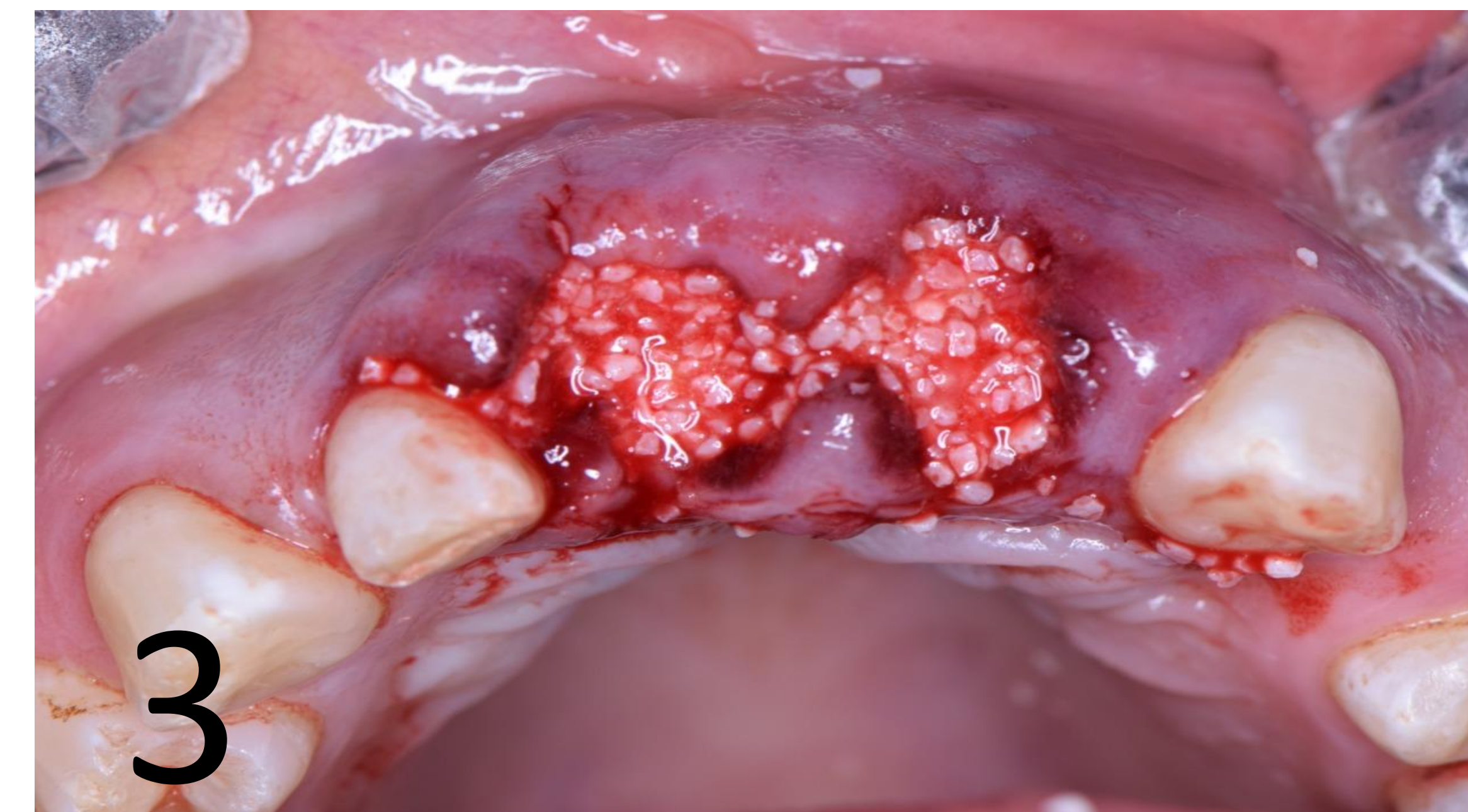
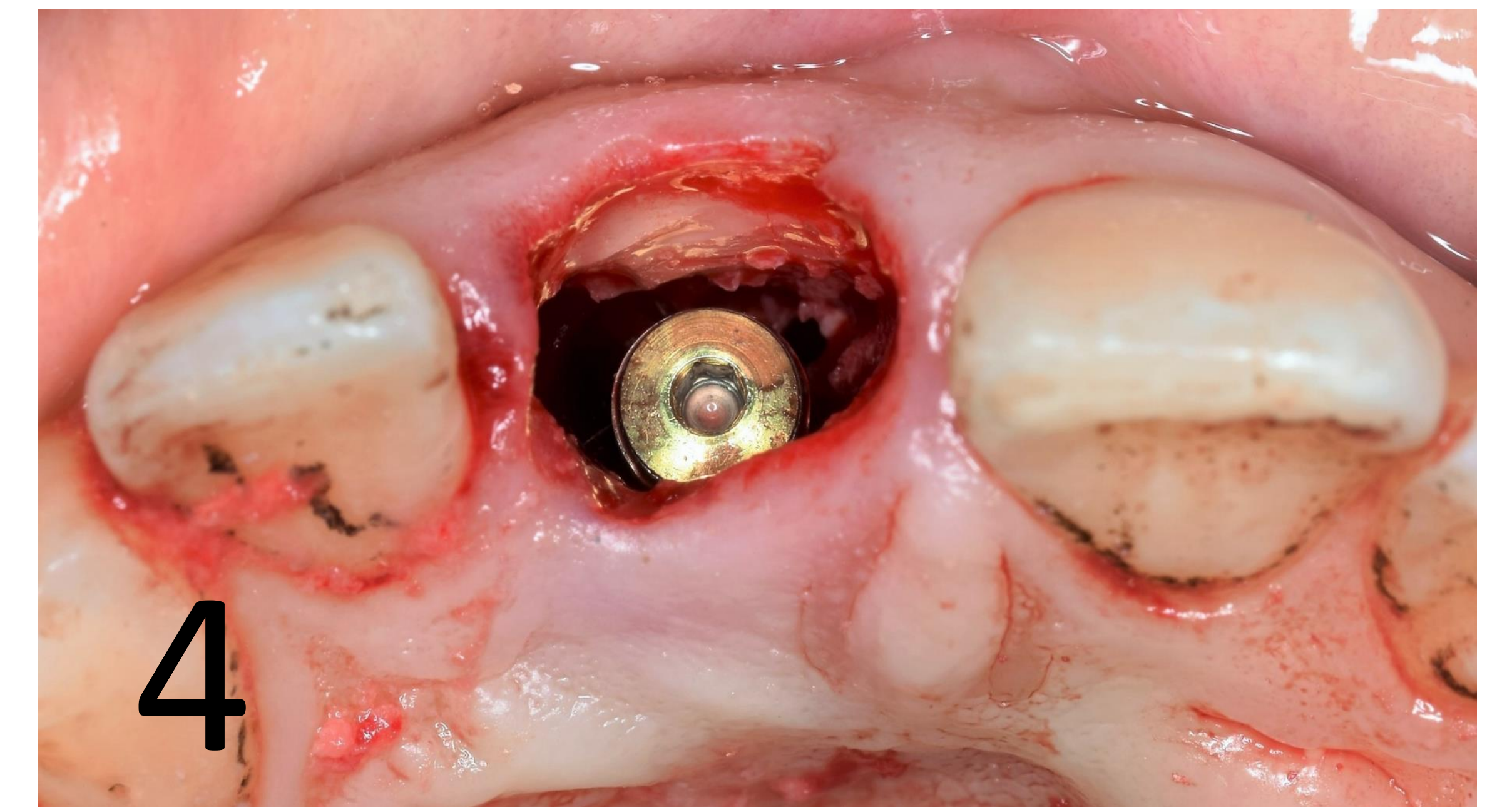


Figure 1-4 : immediate implant placement in the anterior aesthetic zone with different material filling the jumping gap 1) Non grafted site 2) Nano bone, 3) Coral-bone graft, 4) Socket Shield technique

Methods: 36 patients participated in this study, having badly broken single or multiple maxillary anterior teeth (72 implant sites). Patients were randomly divided into four equal groups, 9 in each group received 18 post extraction immediate implant placement in the anterior maxilla. (Group A) immediate implant placement without any graft material between the residual labial bone and implant surface (jumping gap). (Group B) using nanobone graft in jumping gap. (Group C) using coral bone graft material in jumping gap. While (Group D) received immediate post extraction implant placement using socket shield technique leaving thin part of the tooth root between the residual labial bone and implant surface. Cone beam CT was taken immediate and 4 months postoperatively to measure the amount of marginal bone loss in each group and then the percentage of vertical bone loss in each group was calculated.

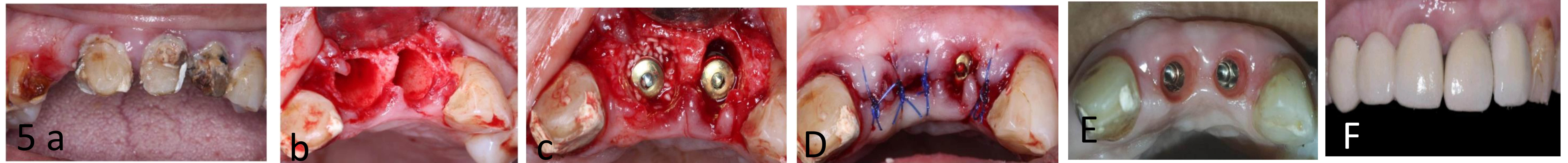


Figure 5 (a-f): immediate implant placement in the anterior aesthetic zone(a,b) with Nano bone filling the jumping gap for maxillary right incisor (c) and no graft for maxillary left incisor(c) , then suturing of the wound using proline(d), 4 months postop.(e) And final cemented prosthesis in place(f)

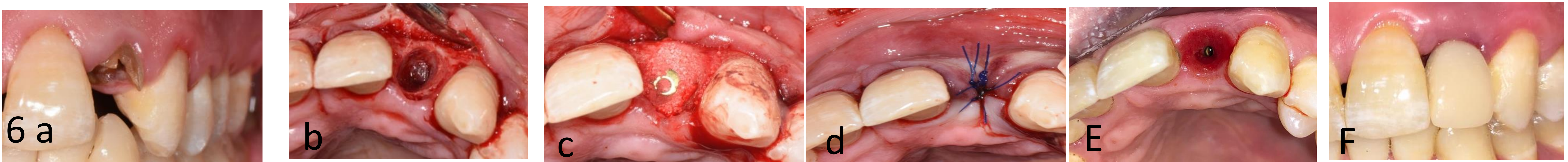


Figure 6 (a-f): immediate implant placement in the anterior aesthetic zone(a,b) with Nano bone filling the jumping gap for maxillary left lateral incisor and suturing of the wound using proline(d), 4 months postop. Healing (e) And final cemented prosthesis in place (f).



Figure 7 (a-f): immediate implant placement in the anterior aesthetic zone(a,b) with coral bone filling the jumping gap for maxillary right and left lateral incisors (c) and no graft for maxillary left incisor(c) , then suturing of the wound using proline(d), 4 months postop.(e)

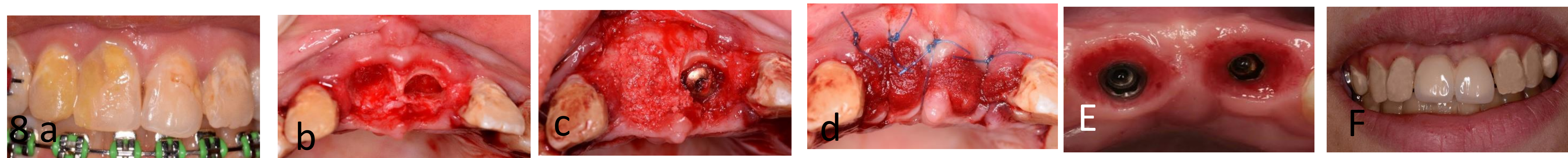


Figure 8 (a-f): immediate implant placement in the anterior aesthetic zone(a,b) with coral bone filling the jumping gap for maxillary right incisor (c) and socket shield technique for maxillary left incisor(c) , then suturing of the wound using proline(d), 4 months postop.(e) And final cemented prosthesis in place(f)

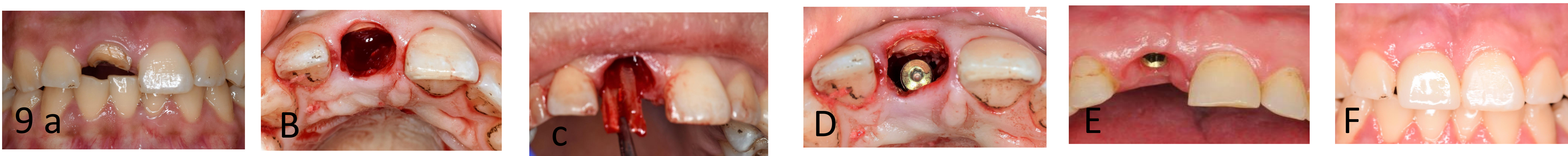


Figure 9 (a-f): immediate implant placement for maxillary right incisor with socket shield technique (a,b,c) then suturing of the wound using proline (d), 4 months postop.(e) And final cemented prosthesis in place (f)

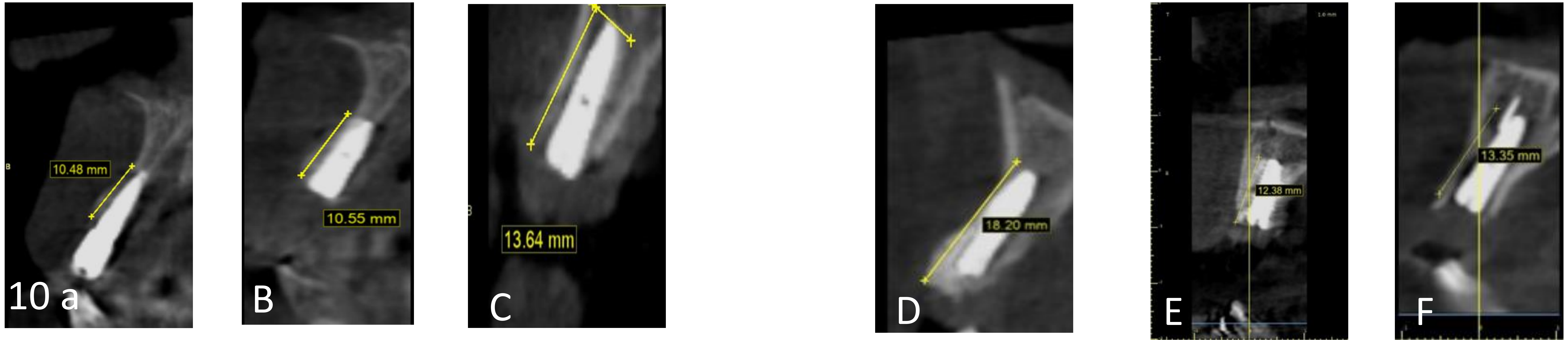


Figure 10 (a-f): 4 months postoperative CBCT (a) non grafted group, (b,c) nano bone group , (d) coral bone group and (e,f) socket shield group

Results: All cases showed uneventful wound healing without any signs of infection or wound dehiscence. The percentage of marginal bone loss was not statistically significant in Groups A 4.01 % ($P=0.486$), B 7.2 % ($P=0.467$) and C 7.36 % ($P=0.807$). But in Group D it was statistically significant 3.76 % ($P<0.001$).

Conclusion: The minimum percentage of vertical height loss was found in group D using socket shield technique with maximum preservation of facial bone contour , it provides better aesthetic results compared to the other grafts as jumping gap filling materials.

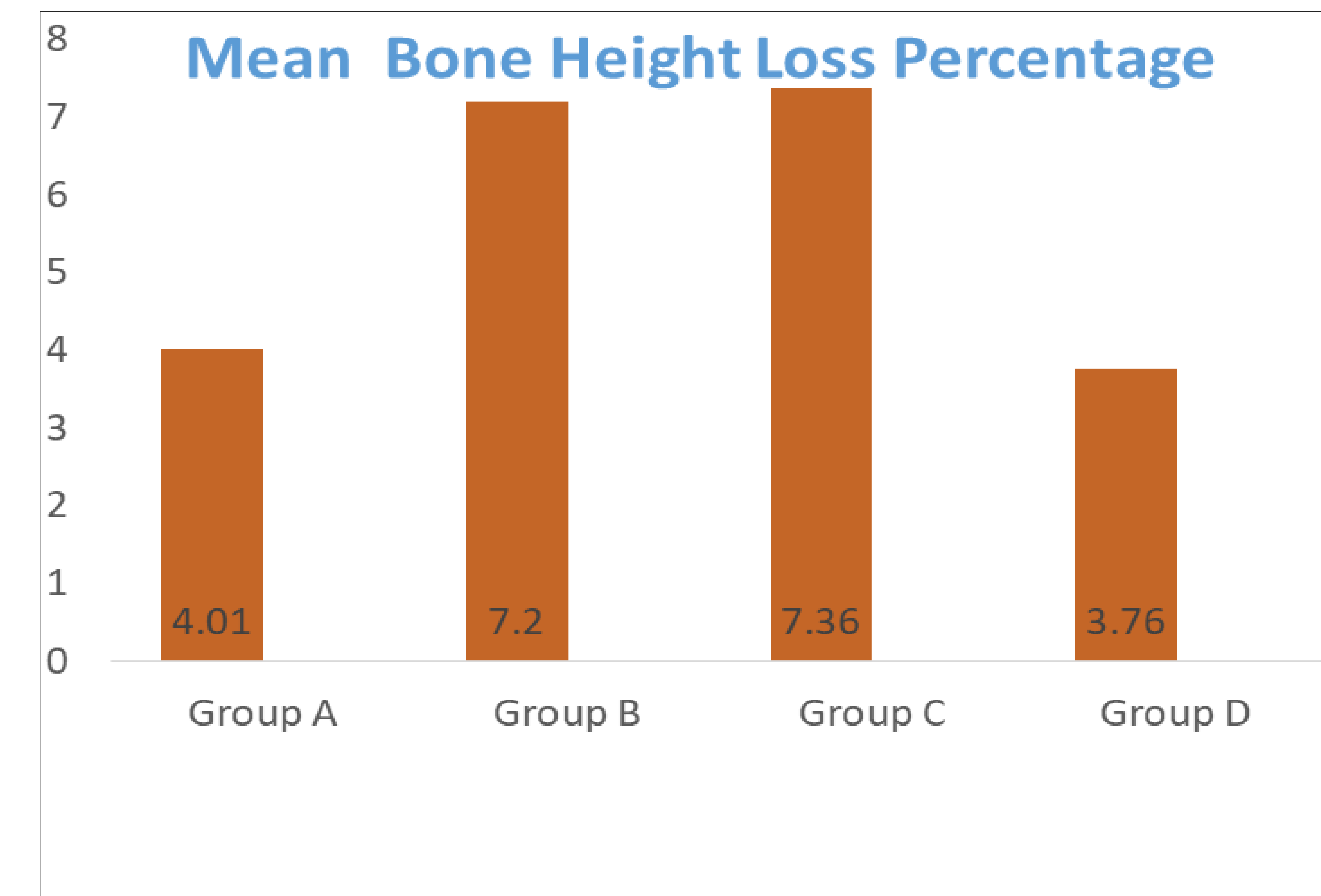


Fig 11 : percentage of bone loss between the 4 groups