



EFFECTIVENES OF REPAIR IN NASOALVEOLAR FISSURES USING ANTERIOR ILIAC CREST GRAFT AND PLASMA RICH IN GROWTH FACTORS



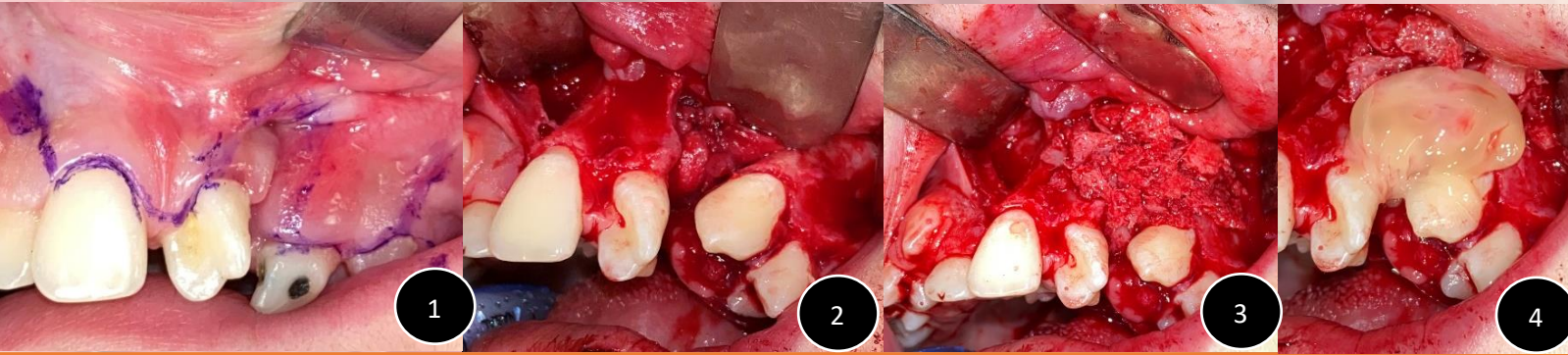
Gómez Hernández Kevin Andrew*, Alonso Moctezuma Alejandro**

*Third-year resident of oral and maxillofacial surgery, National Autonomous University of Mexico

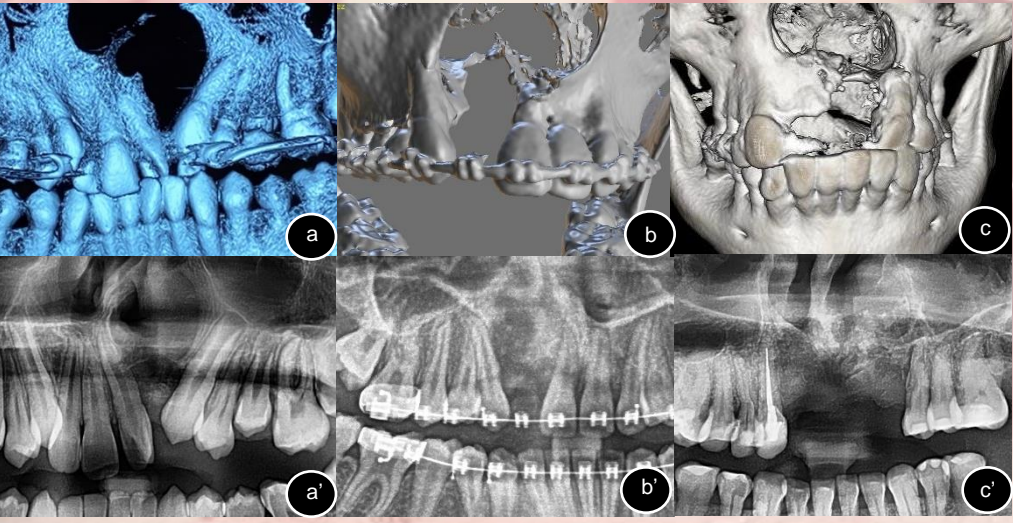
** Coordinator of the specialty of oral and maxillofacial surgery, National Autonomous University of Mexico

Introduction: Nasoalveolar fissures (NAF) are related to incomplete primary nasal floor reconstruction [1], affects 75% of patients with cleft lip and palate, causing abnormalities in the pattern of permanent teeth eruption, deformities in the nasal floor, hygiene and speech difficulty [2]. The time for surgical closure is between 6 and 10 years of age, after orthodontic preparation, maxillary expansion and 75% root formation of the upper canine [3]. The objectives of the graft are to provide a mature bone matrix for the support and movement of the upper canine, the formation of a stable dental arch, the repair of the oronasal fistula and the bone support of the lip and nose [4,5]. The autologous graft of iliac crest is excellent due to the large quantity and quality [6] of cortical and cancellous bone. It complies with the properties of osteoconduction, osteoinduction and osteogenesis to improve integration and decrease graft reabsorption, the most common complications are flap dehiscence, graft exposure, contamination, and high reabsorption of the graft [7].

Plasma Rich in Growth Factors: PRGF is a biomaterial obtained by spinning the patient's autologous blood using a standardized protocol described by Anitua, when activated with calcium chloride the PRGF promotes the formation of an adhesive matrix consisting of polymerized fibrin and the release of biomolecules with regenerative potential [8–10]. These factors promote extracellular matrix synthesis, stimulate the synthesis of type 1 collagen, fibronectin, osteonectin and decrease the synthesis of metalloproteinase and plasminogen activator factor by mitosis stimulation and cell migration; thus preventing the destruction of the extracellular matrix [11,12], they also contain chemotactic agents for endothelial cells that promote neovascularization [13]. The PRGF has offered favorable results for iliac crest grafting for reconstruction of nasoalveolar fissures [14–17].



Clinical cases: Three patients with a diagnosis of nasoalveolar fistula aged 10, 12 and 36 years with no significant pathological history are presented. Nasoalveolar fissure closure was performed with a conventional technique (Figure 1), with an incision around the fistula and closure in two planes with 4-0 vicryl of the nasal mucosa (Figure 2). During the procedure, autologous blood was taken to process it with the system of Dr. Anitua et.al [9]. and obtain the PRGF (Figure 3). Fraction 1 was used to form a fibrin membrane, which was placed on the graft, fraction 2 was placed on the previously particulate iliac crest graft for 8 minutes (figure 4), then it was taken to the recipient bed (figure 5) and finally the oral mucosa was closed with the same suture.



Results: At 6 months of follow-up no patient had wound dehiscence and adequate bone density of the regenerated bone was observed on compared preoperative (a, b, c) and postoperative x-rays (a', b', c').

Conclusion: In the three clinical cases presented, favorable results of the use of PRGF were observed so we can conclude that its use promotes the angiogenesis and soft tissue healing, avoiding its dehiscence and improving the integration of grafted bone tissue showing favorable results.

Conflict of interest: There were no conflicts of interest in this work.

References: In the QR code

