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## A comparison of tissue-engineered bone from adipose-derived stem cell with autogenous bone repair in maxillary alveolar cleft model in dogs

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This study was designed to compare bone regeneration of tissue-engineered bone from adipose-derived stem cell and autogenous bone graft in a canine maxillary alveolar cleft model. In this prospective clinical trial, mesenchymal stem cells (MSCs) were isolated from subcutaneous canine adipose tissue. Undifferentiated cells were incubated with a 3 mm×3 mm×3 mm hydroxyapatite/ beta-tricalcium phosphate scaffold in specific osteogenic medium for 21 days. Four mongrel dogs were prepared by removal of two of the three incisors bilaterally and a 15 mm defect in bone was created from crest to nasal floor. After healing, repair was followed by a tissue engineered bone graft from adipose-derived stem cells on one side and corticocancellous tibial auto graft on the other side. Bone regeneration was evaluated by histomorphometry on days 15 and 60 after implantation. The data were analyzed with descriptive and t test methods ( $\alpha$ = 0.05). Bone formation on the autograft sides was higher than on the stem cell sides at 15 and 60 days, 45% and 96% versus 5% and 70%, respectively. Differences between the two groups at 15 and 60 days were significant (p=0.004 and 0.001, respectively). Although autograft is still the gold standard for bone regeneration, tissue engineered bone may provide an acceptable alternative.

## Biography

Shirin Shahnaseri is practicing as an Assistant Professor in Oral & Maxillofacial Surgery Department of Isfahan University of Medical Sciences since 2010 while seeking further training and experience in Craniofacial Cleft Surgery. Her project for getting oral and maxillofacial specialist degree entitled A comparison of tissue-engineered bone from adipose-derived stem cell with autogenous bone graft. has been done in May 2010.

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