

## **PR-1-9. The Effect of MBCP block as carrier of rhBMP-2 in combination with e-PTFE membrane on Bone formation in Rat calvarial Defects**

**Chul-Woo Shin\***, Min-Soo Kim, Sung-Won Jung, Chang-Sung Kim, Seong-Ho Choi, Kyoo-Sung Cho

The Graduate School Yonsei University Department of Dental Science  
Department of Periodontology, Research Institute for Periodontal Regeneration, College of Dentistry, Yonsei University

### **Background**

This study evaluated the osteogenic potential of rhBMP-2 delivered with MBCP block/e-PTFE membrane upon 2weeks and 8weeks wound healing phase in a critical sized rat calvarial defect model.

### **Materials and methods**

Eight-millimeter critical sized calvarial defects were created surgically in 28 male Sprague-Dawley rats. The animals were divided into 2 groups containing 14animals each. The defects were treated with rhBMP-2/MBCP block and rhBMP-2/MBCP/e-PTFE membrane. MBCP block(8x3 mm)was used as a carrier of rhBMP-2. The e-PTFE membrane was used to cover rhBMP-2/MBCP block. The rat were euthanized at 2 and 8weeks after surgery for histologic and histomorphometric analyses.

### **Results**

The level of Bone formation was significantly higher in defects of both group at 8 weeks than 2 weeks( $P<0.05$ ). A comparison of the rhBMP-2/MBCP block, there was no additional effect in rhBMP-2/MBCP block/e-PTFE membrane. At 8weeks, membrane group showed more even bone formation in the top of the MBCP block.

### **Conclusion**

These results suggest that use of rhBMP-2/MBCP block combined with e-PTFE membrane may achieve bone augmentation, but compared to rhBMP-2/MBCP block(without membrane) there was no significant difference in membrane groups.