Baloul to receive AAO research award

D r. Susan Baloul is the winner of the 2010 American Association of Orthodontists (AAO) Milo Hellman Research Award. The award will be presented at the Excellence Luncheon held during the annual session in May in Washington, D.C.

Baloul was chosen for this prestigious award based on her research, “Mechanism of Action and Morphological Changes in the Alveolar Bone in Response to Selective Alveolar Decortication Facilitated Tooth Movement.” She chose this topic because of her interest and experience in both periodontics and orthodontics.

Baloul worked on this research during a three-year span while completing her DSc in orthodontics and dentofacial orthopedics at Boston University Henry M. Goldman School of Dental Medicine (GSDM). Associate Professor of Periodontology and Oral Biology Dr. I. Alpdogan Kantarci mentored Baloul on the research project, which sought to test if corticotomy-induced osteoclastogenesis and bone remodeling underlie the orthodontic tooth movement and how selective alveolar decortication enhances the rate of tooth movement.

“This was an interesting area for us to get involved in and it was certainly a challenge to learn about bone biology in response to surgery-assisted orthodontic tooth movement,” Kantarci said.

To better understand the mechanism, Baloul used 114 Sprague-Dawley rats, which were separated into three treatment groups. The groups included corticotomy alone, tooth-movement alone and “combined” therapy.

Changes in each therapy group were assessed using faxitron analyses, microcomputed tomography, histomorphometric studies and quantitative-real time PCR (q-PCR) of expressed mRNAs.

Baloul “developed novel assays for alveolar bone structures of the rats, isolated sufficient amounts of RNA to study numerous markers by q-PCR, adapted micro-CT measurement for the three-dimensional changes in the alveolar bone and generated large amounts of samples for future testing,” Kantarci said.

“In order to complete such a thorough characterization of the alveolar bone response, [she] worked hard, spent weekends and evenings in the lab and evaluated her interim data very frequently, getting exposed to sophisticated statistical analyses.”

The resulting data — which was consistent at all levels of analysis — suggested alveolar decortication enhances the rate of tooth movement during the initial tooth displacement phase. This results in a coupled mechanism of bone resorption and bone formation during the earlier stages of treatment, and this mechanism underlies the rapid orthodontic tooth movement.

“It is an honor to be the recipient of the Milo Hellman Award,” Baloul said. “I faced many obstacles and was challenged by many difficult decisions. Choosing to leave a prominent private practice was terrifying. However, it has proven to be one of my best decisions.

“My experience has been humbling yet rewarding. This confirms to me that I made the right decision and that pursuing a doctorate degree for a future career in academia is the correct path for me.”

(Source: Boston University Henry M. Goldman School of Dental Medicine)

with legislative staff as well as background materials and information.

Some of the other highlights of this year’s meeting include:

• new course topics, including an examination of how stem cells and tissue engineering may impact the future of orthodontics, a look at current issues surrounding oral bisphosphonates and a discussion of the issue of access to orthodontic treatment.

• a special risk management program that will focus on common concerns at the beginning of an orthodontic career.

• live clinical procedures filmed and broadcast to both doctor and staff seminars. Topics include mini-implant insertion and application of laser technology.

• the music of Frankie Valli and the Four Seasons and a performance of the comedy “Defending the Caveman” during the opening ceremonies on Saturday, May 1.

For plenty more information on this year’s AAO, plus a sneak peek of new products and other offerings you’ll find on the exhibit hall floor, don’t miss the April edition of Ortho Tribune.