Platelet-Rich Plasma Accelerates Healing

By N. Lindsay Harris, MD & Andrew I. Larson, BSME

Aspen Sports Medicine Foundation & Aspen Orthopaedics Associates

Aspen Orthopaedics Associates and the Aspen Sports Medicine Foundation research reveals platelet rich plasma (PRP) accelerates healing of damaged tissue.

In a specialty as ever-advancing as orthopaedics, it is integral to maintain a commitment to research and technological improvement. Orthopaedic Associates of Aspen and Glenwood is at the forefront of this initiative and has spearheaded research in conjunction with the Aspen Sports Medicine Foundation, Colorado State University, and The University of Colorado. This year, the research projects have focused on investigating the uses of platelet-rich plasma (PRP) and its ability to accelerate a healing response within numerous types of injuries. Dr. N. Lindsay Harris represented Orthopaedic Associates and the Aspen Sports Medicine Foundation while presenting his research on PRP in February of 2009 at the American Academy of Orthopaedic Surgeons in Las Vegas.

Biologics Research

In the recent past, orthopaedic surgeons have made breakthroughs in treating a variety of musculoskeletal diseases and injuries with improved implants and biologics. For patients, biologics potentially allow for less-invasive procedures, faster healing, and shorter hospital stays. Some examples of biologics in orthopaedics are bone grafts to help remodel areas around fractured bone; tissue engineering, such as collagen scaffolds to aid in reconstructing various types of tissue; and PRP, which is used to initiate a healing response within damaged tissue, offering the potential for an alternative to replacement and earlier recovery.

PRP in the News

PRP was in the headlines this year as two of the biggest stars of the Pittsburgh Steelers, Hines Ward and Troy Polamalu, used PRP therapy for injuries prior to leading their team to a Super Bowl victory. PRP is derived by placing a small amount of the patient's blood in a filtration system or centrifuge that rotates at high speed, separating red blood cells from the platelets that release proteins and growth factors involved in the body's self-healing process. A small amount of highly concentrated platelets are then injected into the damaged area, which has the ability to

catalyze the growth of new soft tissue or bone cells. Because this substance can be injected where blood would rarely flow otherwise, it can deliver the healing instincts of platelets without triggering the clotting response for which platelets are typically known. On its own, PRP therapy has the potential to heal stubborn injuries like tennis elbow and knee tendinitis.

It is important to note that PRP is not appropriate in all cases. A clear understanding of the repair response, the development of PRP therapy, and the variables that may affect the body's response to PRP therapy is necessary to make informed clinical judgments on its use.

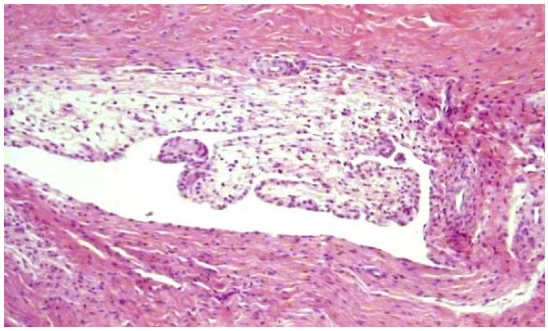

Figure 1: A torn meniscus undergoing a healing response generated by a PRP injection to the area showing "synovial-like" in-growth of tissue.

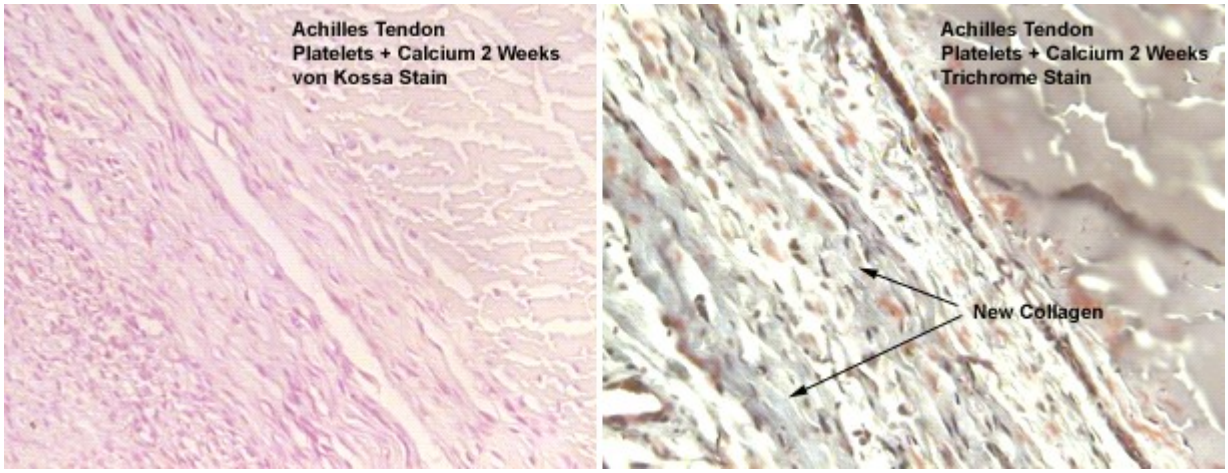

Figure 2: A PRP-treated Achilles tendon showing areas of new collagen formation.