Orthobiologics in Pediatric Orthopaedics

In orthopaedic surgery, biologic devices such as bone graft substitutes are used to enhance bone healing in a structural or augmentative fashion. These devices are termed “orthobiologics.” Fortunately, in pediatric orthopaedics, the robust healing potential of children eliminates the need for such devices. However, there are certain clinical situations in which orthobiologics have proven to be instrumental in improving outcomes in children with musculoskeletal disorders.

In surgery for scoliosis, orthobiologics such as allograft have proven to be efficacious in obtaining a fusion mass. This eliminates the need for autogenous harvested iliac crest bone graft, which can leave the child with donor site pain in their hips for months or even years. Instead, a robust fusion mass after correction surgery for adolescent idiopathic scoliosis can be demonstrated (Figure right). The patient on the right was treated with allograft paste mixed with antibiotics and returned back to sports in six months.

Other uses for orthobiologic devices can also be found in the pelvis and foot. These devices are used in a structural fashion to correct pelvic and foot deformity in children. Graft in corporation is reliable, with minimal risk of side effects. A flatfoot deformity can be treated with a structural allograft after a calcaneal osteotomy (Figure below).

Dr. Robert Murphy and Dr. Matthew Dow, pediatric orthopedic surgeons at the Medical University of South Carolina, utilize a variety of orthobiologics, when indicated, in the treatment of children with musculoskeletal disorders. Please visit our website at www.musckids.org/ortho, to find out more about what we are doing to change what's possible in pediatric orthopaedics. For referrals or new appointments, call 843-876-0111.