PEGA MEDICAL

ABSTRACTS

Radiographic Results and Complications of 3 Guided Growth Implants

Journal of Pediatric Orthopedics, 2018 – Dr. Yong-Woon Shin et al.

Background:

Temporary, implant-mediated hemiepiphysiodesis (ie, guided growth) is an effective and popular treatment method for lower extremity angular deformities. The purpose of this study was to retrospectively evaluate the safety profile of 3 different implants used to correct lower extremity angular deformities in pediatric patients.

Methods:

We retrospectively reviewed a consecutive series of pediatric patients with lower extremity angular deformities who underwent implant-mediated guided growth by 2 surgeons at our institution between 2004 and 2014. Implants were selected according to surgeon preference and included the Biomet peanut plate, Orthofix eight-plate, and Pega Medical hinge plate. Medical records and radiographs were reviewed to assess deformity correction, implant integrity, and complications.

Results:

During the study period, 115 plates (63 Biomet peanut plates, 30 Orthofix eight-plates, and 22 Pega Medical hinge plates) were implanted in 52 patients (24 males, 28 females). Average age at implantation was 11.7 years (12.3y in males, 11.1y in females). Average length of follow-up was 18.4 months. There was no significant difference in rate of deformity correction between the implant types (P=0.08). Three broken screws (2.6%) were observed, all of which involved cannulated screws in peanut plates. Four peanut plates (6.3%) had an implant-related complication: 3 broken screws and 1 screw pullout. Three eight-plates (10.0%) had screw pullout. No complications were observed within either the hinge plate or solid screw groups. Implant-related complications were significantly associated with increased body weight and cannulated screw use (P=0.02 and 0.03, respectively), but not bone age, sex, plate type, or rate of deformity correction. No deep infections, premature growth arrests, or plate breakages were observed.

Conclusions:

Implant-mediated guided growth is a safe technique for pediatric lower extremity angular deformity correction with a low complication rate. This study demonstrated that overweight patients had a significantly higher rate of implant-related complications. Screw breakages were only observed with cannulated screws in peanut plates. Thus, we recommend using solid, non-cannulated screws in overweight children who are at an increased risk of implant failure.

Pega Medical
1111 Autoroute Chomedey, Laval, Quebec, H7W 5J8, Canada
www.pegamedical.com | info@pegamedical.com | +1 450 688-5144