

**New versus Old: A Prospective, Randomized Controlled Trial Comparing the 95° Angled Blade Plate with the Locking Condylar Plate for Distal Femur Fractures**

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**Purpose:** The purpose was to determine if new technology, the locking condylar plate (LCP), was better than old technology, the 95° angled blade plate (ABP). Our hypothesis was that LCP would be superior to ABP.

**Methods:** The investigators performed a randomized trial comparing ABP and a distal femoral locking plate (LCP) from 2007 to 2015. Coronal plane fractures (n = 42) or insufficient cortex for blade insertion (n = 3) were excluded. Type 3C open fractures (n = 3), periprosthetic fractures (n = 51), proximal femur fractures (n = 3), and preexisting implants (n = 3) were excluded, leaving 139 patients with 142 fractures. Of those, 2 declined, 1 was deemed ineligible due to mental illness, and 60 fractures were excluded by surgeon preference, so 78 patients with 79 eligible fractures were randomized (36 ABP, 42 LCP). No differences in demographics or injury features were noted between randomized and nonrandomized eligible patients. Outcomes included nonunion, minor deformity ( $\geq 5^\circ$ ), major deformity ( $\geq 10^\circ$ ), infection, and secondary procedures.

**Results:** 31 males and 47 females with mean age 60 years and mean ISS 16 with 62 closed and 17 open fractures (5 type 1 and 12 type 3A), classified as 33A (n = 38) and 33C (n = 41) were studied. 73 fractures occurred after blunt trauma (27 motorized collisions, 5 falls from height, 41 falls from standing), and 6 were after low-energy gunshot. ABP and LCP patients were similar for age, mechanism, associated injuries, and patterns. All patients were followed to union with mean follow-up 25 months (range, 12-40). There were 2 infections, 1 superficial after LCP and 1 deep after ABP. There were 3 nonunions after LCP, none after ABP (P = 0.06). Nine patients healed with minor deformity ( $\geq 5^\circ$ ) after LCP versus 5 after ABP. One fracture in the ABP group united with a major deformity ( $\geq 10^\circ$ ) versus 2 after LCP. There were 7 patients who underwent secondary procedures after LCP versus 2 patients after ABP (P = 0.08).

**Conclusion:** The investigation failed to support the hypothesis of newer being better. There was no evidence to indicate the LCP was superior to the ABP and while trends suggested that the ABP had better rate of primary union (P = 0.06) and fewer secondary procedures than the LCP (P = 0.08). In an era of increasing measurement of quality and cost, the ABP represents a value proposition.