Minimally Invasive Cerclage Stabilization of Proximal Femur Fractures Using a Cerclage Suture Device

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Purpose: This paper describes a novel, minimally invasive cerclage technique utilizing a two-part articulating cerclage passing device and a radiolucent cerclage suture tape for proximal femur fractures (OTA/AO 32A1) undergoing intramedullary nailing (IMN).

Methods: Utilizing the same lateral incision (3-4 cm) used for lag screw placement in cephalomedullary nails, a two-part articulating cerclage passer is passed on the anterior and posterior aspects of the femur and mated on the medial side. This is done in a manner with minimal soft-tissue stripping and without the need for direct visualization of the fracture site or cerclage device. Once the passer is in place, a FiberStick is threaded through the passers to facilitate shuttling the FiberTape cerclage around the femur. Once length and rotation are confirmed, the suture cerclage is then tensioned and tied to obtain and maintain the final reduction. Figure 1 shows the steps for cerclage reduction. The suture tails are then cut and the nail is placed using standard techniques.

Results: In 2020, this technique was utilized in five patients who underwent IMN of a proximal femur fracture that was amenable to cerclage reduction prior to nail placement. In all cases, a near anatomic reduction was achieved and maintained during the nailing process. No complications were noted at 2-week follow-up.

Conclusion: This technique describes a minimally invasive way to pass a radiolucent, cerclage suture device around proximal femur fractures undergoing IMN. In this limited series, each fracture was reduced to nearly anatomic and there were no complications in early follow-up.