Superficial and Deep Infections Rate in Primary Total Ankle Replacement through Anterior Approach versus Lateral Transfibular Approach
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Introduction/Purpose: Periprosthetic joint infections represent a relatively infrequent complication following total ankle replacement (TAR), with reported incidence ranging from 2% to 8.6%. Early treatment of any wound infection is the key to prevent disastrous outcomes. One of the most recent TARs (Zimmer Trabecular Metal Total Ankle, Zimmer Biomet, Warsaw, IN) requires implantation through a lateral transfibular approach. Potential advantages of this approach include the supposed decreased risk of wound complications, thanks to a preservation of the distal leg angiosomes. The purpose of this study is to retrospectively compare the rate of superficial and deep infections between TARs performed through an anterior approach and TARs performed through a lateral transfibular approach at 12-months follow-up.

Methods: This study included 150 consecutive primary TARs performed between May 2011 and July 2015 with at least 1-year follow up. The 3-component uncemented Hintegra implant (Newdeal SA, Lyon, France) was used in 81 TARs (54.0%) through an anterior approach (group A). The 2-component uncemented Zimmer Trabecular Metal Total Ankle prosthesis, was implanted in 69 TARs (46.0%) through a lateral transfibular approach (Group B). Operative time, tourniquet time and superficial and deep infections were recorded up to 1-year follow-up. All patients were clinically and radiologically evaluated postoperatively at two, six and twelve months. Superficial wound infections were classified as dehiscence, eschar, or wound drainage according to criteria of the Centers for Disease Control and Prevention for surgical wound infection. Deep infections were classified according to Fitzgerald’s classification: acute postoperative, deep late infections, late hematogenous infections. We compared the incidence of superficial and deep infections as well as the operative time.

Results: In group A there were 4 (4.9%) superficial infections. Two of these patients developed a deep infection. Overall, there were 3 (3.7%) deep infections in group A that required: intravenous antibiotics and vacuum assisted closure; replacement of the tibial component and polyethylene liner; polyethylene exchange and VAC treatment. In group B, there were 2 (2.9%) superficial infections. One of these patients developed the only deep infection (1.4%) that was treated with antibiotic-impregnated cement spacer. There was no statistically significant difference in terms of superficial (P= 0.687) and deep infections (P= 0.625). The mean operative time in group A was 115.2 minutes (65-150) and 179.5 minutes (105-333) in group B. Operative time was statistically different between group A and group B (P <0.001).

Conclusion: This study demonstrates a lower superficial and deep infection rate in the lateral transfibular approach group compared to the anterior approach group. Nonetheless, this difference was not statistically significant. The significantly longer operative time in the lateral approach group did not seem to affect the infection rates. In conclusion, TARs performed through a lateral approach appear to be as safe as TARs done through an anterior approach in terms of the infection rate within the first postoperative year. Further studies on larger cohorts and longer follow-up are essential to validate the findings from this study.