

عنوان مقاله:

Intramedullary Nailing Versus Plate Fixation for Humeral Shaft Fractures: A Systematic Review and Meta-Analysis

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خلاصه مقاله:

Background: The two techniques most utilized in the surgical treatment of humeral shaft fractures are open reduction internal fixation (ORIF) and intramedullary nailing (IMN). Although there have been multiple comparative clinical studies comparing outcomes for these two treatments, studies have not suggested one approach to be superior to the other. The purpose of this study is to perform a systematic literature review and meta-analysis of studies that evaluated the treatment of humeral shaft fractures with either ORIF or intramedullary nail. **Methods:** We conducted this meta-analysis utilizing stricter inclusion and broader exclusion criteria to examine these two common approaches. We examined those articles which have compared first-time, closed fractures of the humeral diaphysis in adults in fracture patterns that could be treated equivalently by intramedullary nail or plate fixation. The primary outcome of interest was nonunion, and studies that did not report nonunion rates were excluded. **Results:** There were a total of 1,926 abstracts reviewed and a total of three articles were included in the final analysis after screening. There was no significant difference in the incidence of nonunion between plating (2/111, 1.8%) and nailing (4/104, 3.9%) ($P > 0.05$). The mean difference in average time to union for plated fractures and nailed fractures was 1.11 weeks (95% CI 0.82 to 1.40) which was statistically significant ($P < 0.05$). There was a significant difference in the incidence of radial nerve palsy (12/111, 10.8%) for plating compared to nailing (0/104, 0%) ($P = 0.0004$). There was no difference in incidence of post-operative infection between the two groups intramedullary nailing ($P > 0.05$). **Conclusion:** The results of this analysis demonstrate an increased risk of iatrogenic radial nerve injury, and a significantly shorter time to union when treating humeral shaft fractures with plating as compared to intramedullary nailing. There was no difference in the rates of nonunion or delayed union. Based on the evidence, both plating and nailing can achieve a similar treatment effect on humeral shaft fractures. Level of evidence: II

کلمات کلیدی:

Humeral fractures, intramedullary nailing, internal fracture fixation, malunited fractures

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