



TRIGEN[◇] SURESHOT[◇] Distal Targeting System facilitates shorter distal locking time and exposure time compared with free-hand (FH) method for distal locking during intramedullary (IM) nailing procedures

+ Plus points



Significantly shorter distal locking time with TRIGEN SURESHOT System versus FH method (p=0.001)



Significantly shorter radiation exposure time with TRIGEN SURESHOT System versus FH method (p=0.001)

Overview

- Systematic literature review and meta-analysis comparing outcomes with an electromagnetic navigation method (TRIGEN SURESHOT System) to FH method for distal locking during IM nailing procedures
- MEDLINE, Embase and Cochrane Library databases were searched with terms for ‘fracture fixation, intramedullary’, ‘free-hand’ and ‘electromagnetic’
- Articles published prior to September 2019 were reviewed and included if they compared TRIGEN SURESHOT System to FH method for an intraoperative or postoperative outcome of interest
- Nine studies (three randomised controlled trials [RCTs] and six non-RCTs) were identified, comprising 569 patients for analysis

Results

- TRIGEN SURESHOT System significantly reduced distal locking time compared with FH method across six studies (p=0.001; Table)
- Radiation exposure time was also significantly shorter with TRIGEN SURESHOT compared with FH method across five studies (p=0.001; Table)
- Other outcomes showed no significant differences between TRIGEN SURESHOT System and FH method, including (Table):
 - Success rate across four studies
 - Healing time across two studies
 - Operating time across two studies

Table. Pooled meta-analysis of outcomes of TRIGEN SURESHOT System compared to FH method.

Outcome	Favours TRIGEN SURESHOT System	No significant difference between methods	Favours FH method	P Value
Distal locking time	✓			0.001
Radiating exposure time	✓			0.001
Success Rate		✓		0.231
Healing time		✓		0.090
Operating time		✓		0.510

Conclusions

TRIGEN SURESHOT System demonstrated significantly shorter distal locking time and radiation exposure time for distal locking in IM nailing procedures compared with FH method. This suggests TRIGEN SURESHOT System supports surgeons’ aims of keeping radiation exposure as low as reasonably achievable.

Citation

*Zhao X, Fan Y, Chen J. A comparison of free-hand method and electromagnetic navigation technique for the distal locking during intramedullary nailing procedures: a meta-analysis. *Arch Orthop Trauma Surg*. 2020 [Epub ahead of print].

Available at: [Archives of Orthopaedic and Trauma Surgery](#)