Decreasing the Occurrence of Intraoperative Technical Errors Through Periodic Simple Show, Tell, and Learn Method

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Background/Purpose: Technical errors (TEs) that occur during surgery for treating fractures are considered as being preventable by good preoperative planning and surgeon education. This prospective study evaluated a new instructional method for improving surgical outcomes that involved assessing surgeons' own recent performances in a seminar setting.

Methods: Postoperative radiographs from two groups of patients were assessed during consecutive 4-month periods. 350 operations were included in the early group and 411 operations in the late group. All the TEd that occurred during the first period were reviewed and discussed among the residents and the consultant surgeons who had performed those operations in a scheduled, seminar-type presentation. The same procedure was followed 4 months later. The TEs were classified as minor, moderate, and major.

Results: The two groups included the same 41 surgeons. The most common surgical sites were: proximal femur (21.4%), radius (17%), ankle (12.88%), and tibia (11.43%). The most common TEs were insufficient reduction, varus and valgus malalignment, and prominent hardware. The total number of errors dropped significantly, from 52 (14.7%) during the first period to 25 (6.3%) during the second period ($P = 0.0003$). The TE score for the severity classifications dropped from 81 to 38, respectively ($P = 0.0001$). The seven major events that occurred in both periods were reoperated with satisfactory results. The consultants performed statistically better than the residents in the first period (12% vs. 20%, $P = 0.036$), but almost similar to the residents in the second period (5.3% vs. 9%, $P = 0.164$). A TE index was calculated by dividing the accumulated sum by the number of operations and it dropped in both groups from 0.2 and 0.3 to 0.09 and 0.09, respectively.

Conclusion: Intraoperative TEs can be significantly reduced by periodic performance evaluations in a seminar setting during which groups of surgeons can review the TEs that they and their colleagues had made during recent orthopaedic surgical procedures.

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an "off label" use). For full information, refer to page 600.