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Operative Times in Adolescent Idiopathic Scoliosis Surgery. What Do They Mean?

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marasigan, joanne abby, "Operative Times in Adolescent Idiopathic Scoliosis Surgery. What Do They Mean?" (2019). *Research Days*. 14.

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Research Abstract Title

Operative Times in Adolescent Idiopathic Scoliosis Surgery. What Do They Mean?

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IRB Number: Not needed for systematic review of the literature

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

Active role in comprehending and analyzing published study results and evaluating need for further standardization of operative times. Currently revising manuscript for publication.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background:

Documenting key times in spine surgery including anesthesia time, time prone, and surgical time, are important to compare operative risks, assess learning curves and evaluate team efficiency in adolescent idiopathic scoliosis (AIS) surgery. “Operative time” in literature has not been not standardized.

Objectives/Goal:

Our objective is to report and define “operative time” in AIS posterior spinal fusion (PSF) surgeries.

Methods/Design:

Systematic review was performed by two reviewers. Keywords included operative time, duration of surgery, and scoliosis. 1,906 studies were identified, 1,092 duplicates were removed, 814 abstracts were screened, and 670 abstracts were excluded. 144 articles were reviewed, and 67 studies met inclusion and exclusion criteria. Studies were included if AIS patients 10-21 years-old underwent PSF and a quantitative operative time was reported. Studies were excluded if published before 1997, non-English, systematic reviews, meta-analyses, included complex co-morbidities or complications, and prior spinal surgery. Studies were evaluated for number of patients, operative time, and if provided, definition of operative time. In 1 study data was unable to be included for analysis. Meta-analysis was not performed due to confounders.

Results:

Of the 67 studies (6,678 patients), only 14 (1,565 patients) defined operative time, all specified as incision to closure. From these 14 studies, median operative time was 248 min (range 174-448 min). In the 53 studies (5,113 patients) without a definition, data was analyzed for 52 studies (5,078 patients) with a median operative time of 252 min (wider range 139-523 min). Anesthesia time was reported in only 1 study and was not defined. Time in the prone position was never reported.

Conclusions:

When operative times are reported they are seldom defined and have a wide range of variability. In order to accurately compare operative risks, surgeon learning curves, and team efficiency, documentation of standardized times should be reported.