

Steroids Decrease Costs And Improve Hospital Stay In Cleft Palate And Speech Surgery Despite Controlling For Duration Of Surgery

Alexander Y. Lin, MD; Michelle M. Eagan, MD; Mary M. Reagan, BS

Abstract

Background: We previously showed that postoperative steroids lead to shorter hospital stays and improved oral intake, without wound healing problems in patients undergoing cleft palate or secondary speech surgery (1). In this new analysis, we controlled for duration of surgery, and evaluated financial costs as well as clinical outcomes.

Methods: Cleft palate and secondary speech operations from 2010 to 2012 were reviewed. Length of stay (LOS) was defined as discharge time minus procedure-end time. The financial department provided cost data. Steroids were measured as total dexamethasone equivalents per kilogram, classified as steroids (S) versus no steroids (NS). Nonparametric tests were used to compare continuous outcomes and categorical outcomes (Fisher exact).

Results: After controlling for duration of surgery by eliminating non-steroid patients with longer duration of surgery than the maximum steroid patient, 65 patients qualified for our study: S 16, NS 49. Average age at surgery was 6.5 years, with average follow-up of 1.1 years. The average LOS were: S 23 hours, NS 33 hours, $^{**}P=0.005$.

Hospital data revealed: poor oral intake: S 0% (0/15), NS 47% (23/49), $^{***}P<0.001$; average maximum pain score (range 1 to 10): S 3.25, NS 4.76, $P=0.055$; average total narcotics (morphine equivalents per kilogram) received on the floor: S 0.159, NS 0.158, $P=0.951$.

Postoperative clinic data disclosed: delayed wound healing: S 36% (5/14), NS 18% (9/49), $P=0.272$; operative site fistulas: S 14% (2/14), NS 10% (5/49), $P=0.646$; snoring: S 29% (4/14), NS 54% (26/48), $P=0.131$; sleep apnea: S 29% (4/14), NS 13% (6/48), $P=0.213$; and average Pittsburgh Weighted Speech Scores: S 6.5, NS 7.3, $P=0.495$.

Averages of both fixed and variable costs were: fixed S \$2840, NS \$3705, $^{*}P=0.013$; variable S \$3313, NS \$3078, $P=0.456$.

Conclusions: Despite eliminating non-steroid patients who had longer duration surgery that could potentially confound our previous study, our duration-matched groups still validated our previous hypotheses. In cleft palate or secondary speech surgery, postoperative steroids lead to shorter hospital stays, improved oral intake, and lower fixed costs. There was no evidence for changes in delayed wound healing, fistula, snoring, sleep apnea, speech outcome, or variable costs. This new analysis supports the benefits of postoperative steroids in both primary and secondary cleft palate speech surgery, for both patient and cost outcomes.

References

1. Eagan, M. M., Reagan, M. M., Lin, A. Y. Postoperative Steroids Improve Hospital Stay in Cleft Palate and Speech Surgery Without Affecting Wound Healing and Speech Outcomes. *American Association of Plastic Surgeons 92nd Annual Meeting*, 2013. Available from <http://meeting.aaps1921.org/abstracts/2013/P10.cgi>.

Disclosure/Financial Support

None of the authors has a financial interest in any of the products, devices, or drugs mentioned in this manuscript.