Post-Operative Pain and Analgesic Use after Functional Endoscopic Sinus Surgery

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Introduction

- The United States is suffering from an opioid crisis.1
- 91 Americans die from an opioid overdose everyday.1
- Victims are often not recipients of opioid prescriptions and people who use opioids for nonmedical reasons frequently report obtaining them from family and friends.1
- Functional endoscopic sinus surgery (FESS) is among the commonest surgeries performed in the United States, with >250,000 surgeries performed annually.2
- The most common indication for FESS is chronic rhinosinusitis (CRS), which affects 12% of the adult population.2
- Hydrocodone combination analgesic products are commonly prescribed after FESS, but were involved in almost 100,000 abuse-related emergency department visits in the U.S. in 2011.3
- When evaluating postoperative pain after sinonasal surgery, Wise et al. found that pain level was low with little analgesic use needed.4
- Becker et al. found that the number of narcotic pain pills prescribed to patients after sinusosal surgery could be reduced without altering patient care.3
- Kemppainen et al. conducted a clinical trial that concluded acetaminophen is a highly effective pain treatment after FESS.3
- There is a paucity of studies in the literature assessing pain levels after FESS and non-narcotic pain management alternatives.
- This study aims to quantify pain after routine FESS and determine the most commonly used pain management regimen.

Material and Methods

- Retrospective chart review of 63 patients who underwent FESS between October 2017 to May 2018 performed at a single tertiary care facility.
- Inclusion criteria: patients with CRS with or without sinonasal polyposis (SNP). Additional patient information collected included patient demographics, extent of surgery, intraoperative nasal packing and its type, and use of pre- and post-operative steroids.
- Exclusion criteria: concurrent sinonasal neoplasms or extensive surgery, such as nasal valve repair or anterior cranial base surgery.
- Patients completed a daily pain diary up to 10 post-operative days (POD) (Figure 1). Data from POD 7-10 were excluded from analysis due to a <25% response rate.
- Primary outcome measures: patient-reported pain levels using a visual analog scale (range 0-10) before and after analgesic use, and type and frequency of analgesic used.
- Patients were classified into two groups irrespective of POD
  - Group A: those who required analgesics for post-operative pain management
  - Group B: those who did not require analgesics

Results

- 50 patients with CRS who underwent FESS were included
- Mean age was 45.8 years. Male to female ratio was 0.85:1
- SNP or polypoid material was present in 94% patients
- Majority of patients used pre-op (62%) and post-op (90%) steroids.
- All patients used narcotics, some in combination with non-narcotics.
- Hydrocodone was the most frequently used narcotic (86%) and Acetaminophen monotherapy was the most commonly used non-narcotic.
- Pain scores reduced each post-operative day, with the highest mean pain score of 4.2 on POD 1 and the lowest score of 1.6 on POD 6 (Table 1).
  - Minimum mean and median pain scores for group A (minimum post-op pain threshold for analgesic usage) was 4.7 and 4.5 respectively.
  - Highest mean and median pain scores for group B (maximum post-op tolerable limit of pain score for analgesic non-use) was 3.6 and 3 respectively (Table 1).
  - As early as POD 1, 48% of patients were not using any form of analgesics
- The proportion of patients who required analgesics reduced gradually over the first six post-op days (Figure 2).

Conclusions

- Post operative pain after FESS is relatively less intense in nature regardless of analgesic used
- Narcotics are mostly used only in the first two post-operative days, suggesting most patients need only two days worth of narcotics
- Non-narcotics such as Acetaminophen can be used to effectively manage post-operative pain after FESS

References