

Steroids and control of post-tonsillectomy pain

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Abstract

A prospective, randomized, double-blind study to assess the effect of steroids on post-tonsillectomy pain was performed on 82 adults. The premedication, anaesthesia, surgical technique and post-operative analgesia were standardized. Pain was assessed on a visual analog scale. Steroids were found to have no appreciable effect on the amount of post-operative pain.

Key words: Tonsillectomy; Pain, post-operative; Steroids

Introduction

Following tonsillectomy the fossae are bare of lining mucous membrane, leaving severed nerve endings exposed to stimulation. Granulation tissue gradually forms over these endings leading to resolution of pain. However before this happens the throat is painful and causes difficulty in swallowing.

Apart from oral and systemic analgesics various methods of controlling post-tonsillectomy pain have been tried in the past. These have included injections of local anaesthetic (Campbell, 1953), local penicillin-steroid-anaesthetic mixture (Rundle, 1967), intravenous procaine (Somers, 1951), systemic antibiotics (Orzac, 1956; Telian *et al.*, 1986) and local radiation (Hope *et al.*, 1954).

Steroids have also been used to alleviate the symptoms after tonsillectomy. Anderson *et al.* (1975) in a double-blind study injected depo-steroid or saline into the tonsillar fossae immediately after tonsillectomy in 165 patients and reported a significant decrease in reflex otalgia and the amount of post-operative analgesia used in the steroid group. There was, however, no difference in the amount of pain. Papangelou (1972) reported on 480 tonsillectomy patients, 323 of whom were given oral betamethasone in addition to analgesics as in the control group. The steroid group were found to have less tissue oedema and pain and had a more comfortable post-operative period.

Patients and methods

Approval for this study was obtained from the local ethical committee. Eighty-four consecutive patients over the age of 16 years admitted for tonsillectomy were invited to take part in the study. The outline and purpose of the study was explained to the patients on admission and their written consent obtained. Patients having additional surgical procedures were excluded from the study as were patients on steroids and those having any contraindication for their use. The amount of pain experienced was recorded on a ten point visual analog scale.

Randomization into treatment and control groups was done by the anaesthetist just before induction by selecting a card. The steroid group were given 4 mg dexamethasone intravenously during anaesthesia. A standard protocol for premedication, anaesthesia, operative technique and post-operative analgesia was used. Premedication consisted of lorazepam (2 mg), domperidone (10 mg) and paracetamol 1 g two hours before surgery. General anaesthesia was induced by thiopentone and atracurium and the patient was intubated. Morphine (0.1 mg/kg body weight) was given intramuscularly at induction. Anaesthesia was maintained by IPPV with oxygen and nitrous oxide mixture and enflurane. The tonsils were dissected by blunt and sharp dissection and removed using a cold snare. Haemostasis was secured by ligation of bleeding vessels with linen. Diathermy was not used. Intravenous glycopyrrolate and neostigmine were used to reverse the anaesthetic. Post-operatively all patients were prescribed intramuscular morphine (10 mg) and co-codamol, 8500, two tablets, every four hours on demand.

Patients were routinely discharged on the second post-operative day unless there were complications and the record of pain was kept until this time. The amount of analgesia used and the amount of pain, as recorded on the pain scale, were studied. The pain recordings on the scale were averaged separately for each patient and the two groups were compared statistically by comparison of medians.

Results

Eighty-two patients were included in the study. Two patients declined to take part. The steroid group consisted of 40 patients (18 female and 22 male) ranging in age from 16 to 34 years (median 22 years). This group received 4 mg dexamethasone intravenously during anaesthesia. The control group consisted of 42 patients (22 male and 20 female) ranging in age from 16 to 31 years (median 21 years). Three patients in the steroid group and two in the

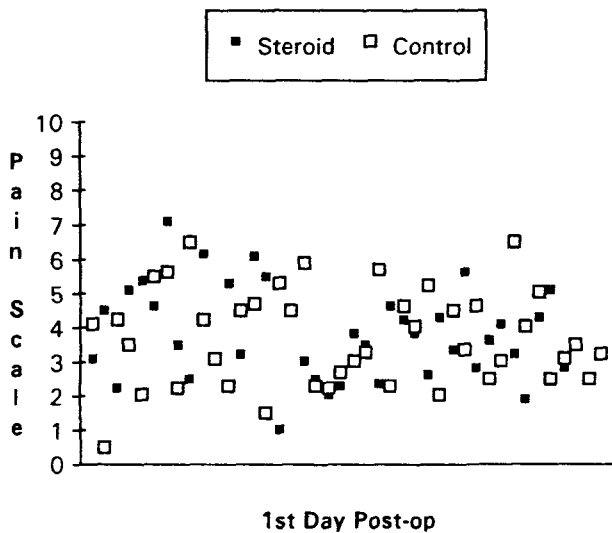


Fig. 1
Perceived pain.

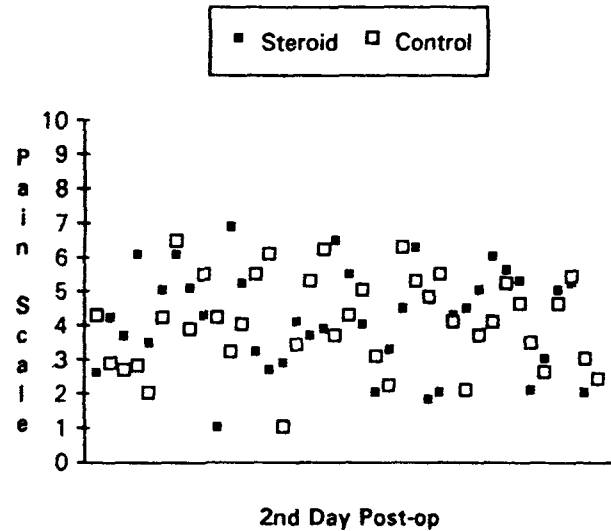


Fig. 2
Perceived pain.

control group stayed in the hospital an extra day because of odynophagia. Four patients in the control group and three in the steroid group were prescribed antibiotics for persistent pyrexia.

All patients had 0.1 mg/kg body weight morphine at induction and one post-operative dose of 10 mg. Five patients in the steroid group and six in the control group required one more dose. All patients used co-codamol four hourly on the first post-operative day and had three to four doses on the second day. There was no difference in the analgesic requirements for the two groups.

The amount of pain recorded on the ten point pain scale at different times of the day was averaged for each patient for the first and second post-operative day (Figs. 1 and 2). There was no significant difference in the amount of pain recorded between the two groups (day 1—95 per cent confidence interval for difference between the two groups = -0.50 to $+0.70$; day 2—95 per cent confidence interval = -0.50 to $+0.70$).

Discussion

Catlin and Grimes (1991) have reported a similar study of 25 children, 10 of whom received intravenous dexamethasone intra-operatively. They found that the steroid group were able to eat solid food earlier when compared with the controls. Maniglia *et al.* (1989) in a report on day-case tonsillectomy have described using dexamethasone intra-operatively and post-operatively in adults and feel that its use minimized pain allowing the procedure to be performed on an ambulatory basis.

This study was done in adults to ensure a more reliable assessment of pain. Both direct recordings and indirect assessment of pain by the amount of analgesia used

showed one dose of intra-operative dexamethasone to have no effect on the perception of post-tonsillectomy pain.

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