A Survey of the Use of Perioperative Glucocorticoids in Oral and Maxillofacial Surgery

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Purpose: The aim of the study was to clarify the use of perioperative glucocorticoids (GCs) in association with oral and maxillofacial surgical procedures.

Materials and Methods: We conducted a survey of consultant oral and maxillofacial surgeons (OMSs) working in tertiary and secondary referral hospitals in Finland.

Results: The administration of GCs is common among OMSs (85.2% of respondents), especially in association with orthognathic surgery (100% of respondents) and facial fractures (43.5%). All OMSs who administered GCs reported that they reduce swelling. The next most common reasons for administering GCs were established practice (43.5%) and pain reduction (39.1%). The regimens differed widely from a 5-mg single dose to a 116-mg total dose of dexamethasone equivalent.

Conclusions: GCs are widely administered by OMSs, especially in major surgery. The literature shows some benefits of their use in dental and orthognathic operations, and their use seems rather safe. Proof of efficacy remains to be determined for other major maxillofacial surgical procedures; thus further studies are needed.

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Glucocorticoids (GCs) are involved in a wide variety of homeostatic, cardiovascular, metabolic, and immunologic actions. The natural GC cortisol is produced in the adrenal cortex and controlled by the hypothalamus and anterior pituitary gland. The synthetic GCs mimic the effects of cortisol, but have different biological half-lives and potencies.

GCs have been reported in the literature to be beneficial in reducing postoperative inflammatory symptoms in patients undergoing surgical removal of the third molar.[1-13] Studies also have shown that patients undergoing orthognathic surgery may benefit from GCs.[14,15] However, the effect on surgical wound healing is contradictory.[16-18] After surgery for orbital blowout fractures, GCs improve interpalpebral width.[19] In reconstructive surgery, to our knowledge, the evidence on GCs is nonexistent. Yet, because of their immunosuppressive effects, GCs are probably widely used in association with various types of surgical procedures in the facial region.

Assimes and Lessard[20] conducted a survey of North American members of the American Society of Maxillofacial Surgeons to clarify the prevalence of administration of GCs by surgeons performing craniomaxillofacial or esthetic surgery. The survey showed that 46.7% of the respondents administer short-term high-dose GCs perioperatively. This finding reflects our experience that GCs also are used frequently in Finland, but it remains unclear why, when, and how they are used.

The aim of this study was to clarify the use of perioperative GCs in association with oral and maxillofacial surgical procedures. The specific aim was to design

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and implement a survey of Finnish consultant oral and maxillofacial surgeons (OMSs) working in secondary and tertiary referral hospitals to identify the prevalence of, and reasons for, administering GCs. The main hypothesis was that GCs are commonly administered to decrease postoperative swelling and pain.

Materials and Methods

All oral and maxillofacial consultants in 12 secondary and 5 tertiary referral hospitals in Finland were contacted by phone or in person and asked to respond to a standardized questionnaire about their policy for administration of short-term high-dose perioperative GCs. The inclusion criterion was that the respondent performs 1 or more of the surveyed surgical procedures on a regular basis. Of 34 consultants contacted, 27 (79.4%) responded to the questionnaire.

The key question was "Do you use short-term high-dose perioperative GCs in association with oral and maxillofacial surgery?" Use of GCs as a substitute for any medical condition was excluded.

The respondents who do not administer GCs were further asked to specify the reasons for not administering corticosteroids. The options were as follows: *1)* the literature does not support the use of GCs, *2)* there is an increased risk of complications, *3)* GCs are not cost-effective, *4)* GCs offer no benefits, and/or *5)* other reason (with a request to elaborate).

The OMSs who administer GCs were further asked about their reason for use, among several options: *1)* reduces swelling (airway compromise or general swelling caused by surgery was not further defined), *2)* reduces pain, *3)* reduces postanesthesia nausea, *4)* improves operation outcome in general, *5)* shortens hospitalization time, *6)* shortens sick leave, *7)* is an established practice of our department, and/or *8)* other reason (with a request to elaborate). These OMSs also were asked to report any steroid-induced complications that they had encountered.

Finally, the steroid-administering consultants were asked about their frequency of GC administration in patients undergoing third molar surgery or dentoalveolar surgery, orthognathic surgery, surgery for facial fractures, and oncologic reconstructive surgery. The options were *1)* always or very often, *2)* about half of the cases, *3)* seldom, or *4)* I do not perform this kind of surgery. The participants also were asked to provide detailed information about their treatment regimens for each of the aforementioned procedures.

Results

Of the 27 respondents, 7 held double degrees (ie, MD and DDS) and all of them claimed they administer GCs. Years in practice did not seem to reflect the policy regarding the administration of GCs, nor did the place of work (ie, tertiary or secondary referral hospital) (Table 1).

RESPONDENTS ADMINISTERING GCS

Of the 27 respondents, 23 (85.2%) claimed that they administer perioperative GCs. The reasons for GC administration were many. All 23 OMSs who administer GCs agreed that they reduce swelling. The additional reasons for GC administration were as follows: it is an established practice of the department (10 of 23 OMSs who administer GCs, 43.5%), it reduces pain (9 of 23, 39.1%), it shortens hospitalization time (7 of 23, 30.4%), it reduces postanesthesia nausea (4 of 23, 17.4%), and it shortens sick leave (1 of 23, 4.3%).

Of those respondents who perform orthognathic surgery actively, 100% claimed that they administer GCs, the respective figures for those who perform reconstructive surgery, facial fracture surgery, and third molar or dentoalveolar surgery being 50.0%, 43.5%, and 3.7%. Figure 1 shows the frequencies of GC administration in more detail, in association with different types of surgical procedures.

The steroid regimens differed greatly between the respondents in general and were particularly different between types of procedures. Overall, dexamethasone was the most frequently used GC, being administered by 13 respondents (60.9%). Hydrocortisone (6 respondents, 26.1%) and methylprednisolone (5 respondents, 21.7%) also were occasionally used.

Some respondents initiated treatment on the evening before surgery, whereas others initiated it during induction of anesthesia or intraoperatively. The course

Table 1. RESPONDENTS' BACKGROUND

	Respondents Who Do Not Administer Glucocorticoids (n = 4)	Respondents Who Administer Glucocorticoids (n = 23)
Experience		
6-10 yr	—	5
11-15 yr	1	5
15-20 yr	—	4
≥20 yr	3	9
Working hospital		
Secondary	1	11*
Tertiary	3	13*
Degrees		
Double (MD, DDS)	—	7
Single (DDS)	4	16

* One surgeon working in 2 hospitals.

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