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Predictors of pain and prolonged length of stay after orthognathic surgery: A retrospective cohort study☆

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ABSTRACT

Introduction: Orthognathic treatment has assumed an important role in orthodontics and maxillofacial surgery in the last years; however, little has been investigated about this type of treatment.

Objectives: The main purpose of this study was to identify major factors and/or predictors associated with postoperative pain (PP) and hospital length of stay (LOS) after orthognathic surgery.

Materials and methods: 52 patients who underwent orthognathic surgery from 2008 to 2010 at the University Hospital of São Paulo University were investigated. Study variables such as patient characteristics, preoperative, intraoperative and postoperative data were collected. The outcome variables were PP and LOS. Descriptive and analytical statistics was computed for all variables.

Results: 27.6% of patients had pain in the postoperative period. Lidocaine used in general anesthesia was an associated factor of PP. The overall mean LOS was 2 days; gender, location of procedure, type and duration of anesthesia were identified as probable predisposing factors. There was a significant correlation between anesthesia time and discharge. Anesthesia variables were more predictably related with postoperative pain and hospitalization time. Location of orthognathic procedure, however, was an important surgical variable that influenced in LOS.

Conclusions: Intravenous lidocaine boluses used during general anesthesia were associated with PP. Male patients, single-jaw surgery, inhalational anesthesia and duration of anesthesia were predisposing factors that improve LOS.

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Predictores de dolor y tiempo de internación prolongado tras cirugía ortognática: estudio de cohorte retrospectivo

Palabras clave:
Cirugía ortognática
Dolor posoperatorio
Anestesia
Tiempo de internación
Pain

RESUMEN

Introducción: la cirurgía ortognática ha asumido un papel importante en la ortodoncia y en la cirugía maxilofacial en los últimos años. Sin embargo, se ha investigado poco sobre este tipo de tratamiento.
Objetivos: el objetivo principal de este estudio fue identificar los principales factores o predictores asociados con el dolor posoperatorio (DP) y el tiempo de internación (TI) después de la cirugía ortognática.
Materiales y métodos: fueron estudiados 52 pacientes que se sometieron a cirugía ortognática (2008 - 2010) en el Hospital Universitario de la Universidad de São Paulo. Se recolectaron variables de estudio tales como características de los pacientes y datos perioperatorios. Estadística descriptiva y analítica se calculó para todas las variables.
Resultados: el 27,6% de los pacientes presentaron dolor en el posoperatorio. La lidocaína utilizada en la anestesia general fue un factor asociado del DP. El TI medio global fue de 2 días. El género, la localización del procedimiento, el tipo y la duración de la anestesia se identificaron como factores predisponentes probables. Hubo una correlación significativa entre el tiempo de anestesia y de descarga. Las variables de anestesia podían predecirse más cuando estaban relacionadas con el DP y el TI. La localización de la cirurgía ortognática, sin embargo, fue una variable quirúrgico importante que influyó en lo TI.
Conclusiones: la lidocaína intravenosa en bolo utilizada durante la anestesia general se asoció con el DP. Los pacientes varones, la cirugía sobre una sola mandíbula, la anestesia inhalatoria y la duración de la anestesia fueron factores predisponentes que prolongaron el TI.

Introduction

Orthognathic treatment has assumed an important role in orthodontics and maxillofacial surgery over the past 3–4 decades, with esthetic, functional and social impact on the quality of life of patients.[1] However, little has been investigated whether clinical practice features have affected variables such as postoperative pain, duration of inpatient stay or chance of requiring high level nursing (sub acute care). These issues are clearly important when orthognathic treatment is done in a publicly funded health care system as they influence the use of resources. Improved knowledge in this field would increase the ability of public health systems to plan their provision of these services and allocate resources appropriately.[2]

Reduction of postoperative pain (PP) and of length of stay (LOS) after surgery can result in improved allocation and use of health care resources and a substantial reduction in the cost of health care delivery. Although a number of reports have attempted to identify patient characteristics and perioperative adverse events that correlate with pain and prolonged hospital stay, there is a paucity of published papers focused on PP or LOS after orthognathic surgery.

A better understanding of the variables affecting PP and LOS may allow surgeons to assess the management of patients undergoing orthognathic surgery, and hence improve patient care and discharge planning.[3]

The overall purpose of this study was to estimate the postoperative pain (PP) and the hospital length of stay (LOS) after orthognathic surgery in a large series of patients. The specific aims of this study were to identify major factors associated with PP and LOS, and to determine predictors of PP and prolonged LOS after orthognathic surgery.

Methods

Investigators evaluated clinical records from subjects who underwent orthognathic surgery from 2008 to 2010, in a retrospective cohort study. A total of 67 patients were admitted for surgical treatment in the Department of Oral and Maxillofacial Surgery. Fifty-two patients (32 females, 20 males) who underwent orthognathic surgery were selected. Patient age ranged from 16 to 63 years (average age 29).

Subjects included in the sample had congenital or acquired skeletal deformities corrected using conventional orthognathic operations. Subjects undergoing distraction osteogenesis were excluded. This study was reviewed and approved by the Ethics Committee of the University Hospital.

Study variables

Study variables were grouped into the following sets: patient characteristics, preoperative, intraoperative and postoperative. Patient variables were age, sex, and body mass index (BMI). Preoperative variables include ASA classification, medical history, acquired habits and physiological data.

The intraoperative variables were divided into subgroups surgical and anesthesia. Surgical subgroup variables