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DURATION OF HOSPITALISATION FOR TREATMENT OF ORTHOGNATHIC SURGERY

Ashwin Shravan Kumar
Undergraduate Student
Saveetha Dental college
Saveetha Institute of Medical and Technical Sciences (SIMATS)
Saveetha University, Chennai , India

Corresponding author:
Dr. Arun Murugaiyan
Senior Lecturer
Department of Oral and Maxillofacial Surgery
Saveetha dental college
Saveetha Institute of Medical and Technical Sciences (SIMATS)
Saveetha University, Chennai , India
Mail id: arunm.sdc@saveetha.com

ABSTRACT

Aim :

Orthognathic surgery is a versatile, widely accepted procedure for the correction of dentofacial deformities. The benefits of orthognathic surgery are well-documented and include three main aspects: improved dental and facial aesthetics, better dental function, and improvements in psycho-social characteristics and quality of life

Materials and methods:

The clinical records of all Orthognathic surgery cases during the period between 1 January 2020, and 1 January 2021 were. Surgical osteotomy preference were taken into account. Gender and age of the patients were also included in the study.

Results:

It can be seen that majority of patient undergoing any osteotomy were discharged in 3 days on an average. And the highest number of days for hospitalisation is seen in bilateral sagittal split osteotomy for a period of 9 days.

Conclusion:

The patients' hospital stay was directly related to the complexity of the orthognathic procedure, the operation time, the length of time spent in the ICU and the year in which the operation was done.

Keywords: innovative, orthognathic, osteotomy, clinical trial

INTRODUCTION:

Orthognathic surgery is a versatile, widely accepted procedure for the correction of dentofacial deformities. The benefits of orthognathic surgery are well-documented and include three main aspects: improved dental and facial aesthetics, better dental function, and improvements in psycho-social characteristics and quality of life (Proffit *et al.*, 1989; Hunt and Cunningham, 1997)].

Major oral and maxillofacial surgery, including orthognathic surgery, has traditionally been performed on an inpatient basis. The rationale for inpatient care was based on the need to manage the recovery from anesthesia, potential airway instability, homeostasis, resumption of oral intake, pain control, and any unpredictable morbidity associated with maxillofacial surgical cases (Dann, 1998; Van Sickels, 1998; Shepherd, 2008). Reports from the United Kingdom have shown that the use of inpatient beds following surgery have been 'the most expensive resource of the National Health

Services'. This high cost could be one of many reasons for the increase in day care surgeries. Other reasons could include patient preference which would result in reduced cancellation of lists and value-for-money outcomes

There is scant information concerning the needed in patient stay after orthognathic surgery and the factors that affect that stay. The transition of oral and maxillofacial surgical care to an outpatient setting challenges preconceptions regarding the morbidity associated with these procedures(Dann, 1998; Van Sickels, 1998; Shepherd, 2008; Garg *et al.*, 2010) . Many authors have reported that if oral and maxillofacial surgical care could be provided with less morbidity and rapid postoperative recovery, the inpatient care will not be necessary, the patient experience with the surgery will be better and the cost would be reduced. Our team has extensive knowledge and research experience that has translate into high quality publications(J *et al.*, 2018),(Wahab *et al.*, 2018),(Mudigonda *et al.*, 2020),(Narayanasamy *et al.*, 2021),(Gan *et al.*, 2019; Li *et al.*, 2019; Ma *et al.*, 2019; Bishir *et al.*, 2020; Zhang *et al.*, 2020; Fan *et al.*, 2021; Saravanakumar *et al.*, 2021; Veeraraghavan *et al.*, 2021; Wang *et al.*, 2021; Wei *et al.*, 2021)(Sathya *et al.*, 2020),(Felicita and Sumathi Felicita, 2018; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Chandrasekar *et al.*, 2020).(Su *et al.*, 2019; Wan *et al.*, 2020)

The aim was to determine the LHS following orthognathic surgery and the factors that influence the length of stay.

MATERIALS AND METHODS

The study was done as a retrospective, single centered study. Ethical approval was obtained from the Institutional Ethical Committee (Ethical approval number. SDC/ SIHEC/ 2020/ DIASDATA/ 0619-0320). We reviewed case records of the data of patients who had Orthognathic surgery done. Incomplete data were excluded. Age, gender and the type of surgical intervention were collected. These data were cross verified with photographs and radiographs. The collected data were analysed using SPSS statistical software. Descriptive statistics (percentage, mean, SD) and inferential test (Chi-square test) were done appropriately.

RESULTS AND DISCUSSION

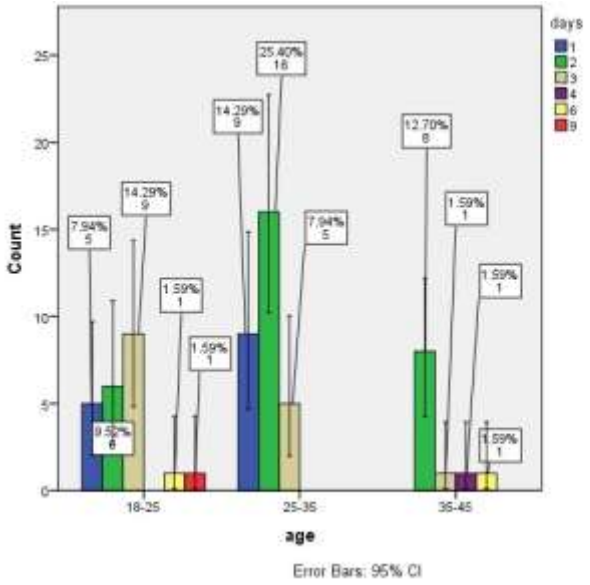

Fig-1 representing the association between age and number of days of hospitalization. X axis represents age group(18-25, 25-35, 35-5), Y axis represents number of days (blue-1, green-2,gold-3, violet-4,yellow-6,red-9). Chi square analysis was done and p value was found to be <0.01

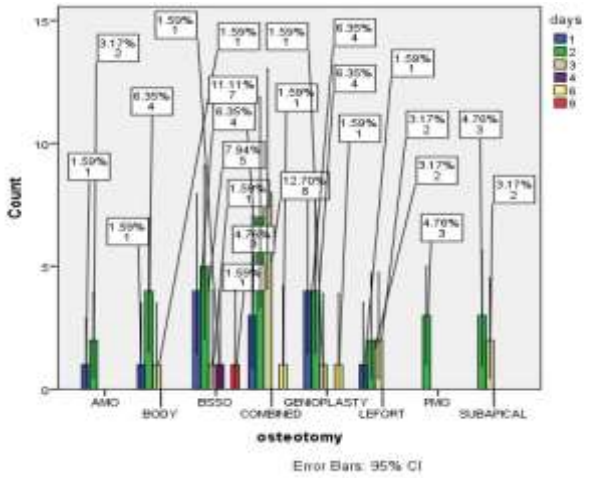

Fig-2 representing the association between tye of osteotomy and number of days of hospitalization. X axis represents type of osteotomy(AMO, body, BSSO, combined, geniiplasty, lefort, PMO, subapical), Y axis represents number of days (blue-1, green-2,gold-3, violet-4,yellow-6,red-9). Chi square analysis was done and p value was found to be <0.01

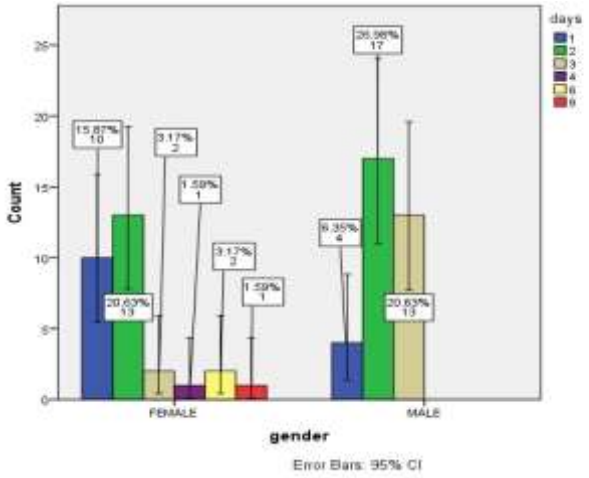

Fig-3 representing the association between gender and number of days of hospitalization. X axis represents gender (female, male), Y axis represents number of days (blue-1, green-2,gold-3, violet-4,yellow-6,red-9). Chi square analysis was done and p value was found to be <0.01

It can be seen that majority of patient undergoing any osteotomy were discharged in 3 days on an average. And the highest number of days for hospitalisation is seen in bilateral sagittal split osteotomy for a period of 9 days.

There was no statistical relationship between the age and the gender of patients to the LHS; this was also reported by other authors. The average LHS was 4.2 days which lies within the reported range of between 1.3 to 8.5 days.The increase in the number of cases during the study period could be attributed to an increase in awareness and education amongst the general public in relation to their facial esthetics.(Kumar *et al.*, 2007; Parbatani *et al.*, 2010) Over the study period, the population was increasingly exposed to international television and media which could have increased their need for facial improvement. It is also possible that over the study period, the clinical and support staff improved their techniques and clinical skills. This could have reduced some of the complications and hence reduced the LHS. Lastly, the reduction in LHS could be due to an increase in the number and type of surgical instruments which impacted on anesthetic time and indirectly on LHS.

Many authors have reported that the length of anesthesia time as a significant predictor of the need for subsequent hospitalization. According to Lupiro there was a positive correlation between the duration of the procedure (including anesthesia time) and the admission for observation.

Lombardo et al. and Dolan and white noted a procedure-based LHS pattern, reporting the longest LHS in bimaxillary procedures, followed by maxillary procedures and then mandibular procedures.(Calev, 2001; Mani, 2010) Lupori determined that increased duration of anesthesia and increased number of procedures resulted in increased frequency of hospital admissions. Interestingly, these authors found that the use of ancillary procedures increased LHS, but the increase was not statistically significant, and there was no significant difference between Le Fort I and Bilateral Sagittal Split osteotomy in relation to LHS.

CONCLUSION:

The patients' hospital stay was directly related to the complexity of the orthognathic procedure, the operation time, the length of time spent in the ICU and the year in which the operation was done. A significant reduction was noticed in LHS over the progressing years and this may reflect an increase in experience and knowledge amongst the clinicians and an improvement in the medical facilities.

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CONFLICT OF INTEREST: Nil

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