

# Social demand in ambulatory oral surgery. Experience in the Master of Oral Surgery of Madrid Complutense University (Spain)

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## Abstract

**Objectives.** An evaluation is made of the surgical activity in the context of the Master of Oral Surgery (Madrid Complutense University, Madrid, Spain), together with an analysis of social demand in ambulatory oral surgery.

**Study design.** A descriptive statistical analysis (frequency and contingency tables) is made of the different parameters relating to the activity carried out in this postgraduate master during two academic years.

**Results.** A total of 6750 interventions were carried out in 5877 patients. Females predominated over males (62% versus 38%), and 59.2% of the subjects were in the 21-40 years age range. The most common procedure was tooth extraction (91%); of these, 83.5% corresponded to molars. Other extractions accounted for 5.5%, while impacted canines represented 1.2% of the interventions, cyst removal 1.2%, and periapical surgery 0.5%.

**Conclusions.** Our results show third molar extraction to be the most commonly demanded intervention in ambulatory oral surgery.

**Key words:** Oral surgery, ambulatory surgery, third molars.

## Introduction

The term ambulatory surgery was defined by Marín in 1996 (1) as an optimum organizational model for multi-discipline surgical care, allowing the treatment of certain patients in a safe and effective manner, without having to resort to the traditional hospital bed. This concept encompasses surgery of medium complexity, performed under general, locoregional or local surgery, and not requiring patient admission to hospital after the operation.

The basic premise of ambulatory surgery is that there are operations that can be performed without having to admit the patient to hospital - maintaining the required quality of medical care with a lesser economical cost (2,3).

Morgan et al. (4) defined ambulatory surgery as a type of elective and selective short-stay surgery carried out without patient admission to hospital, on a non-emergency

basis and without the presence of infection.

A range of surgical disciplines are amenable to such ambulatory operations, including gynecology, ophthalmology, ear, nose and throat operations, plastic surgery, maxillofacial surgery, vascular surgery, and oral surgery, among others (5).

In this context, oral surgery is a very important presence in all countries where the development of ambulatory surgery has been greatest. In the United States and the United Kingdom, impacted tooth extraction is one of the most frequent oral surgical interventions (2).

The operations which the Royal College of Surgeons of England considers amenable to performance of an outpatient basis are: the removal of teeth and root fragments, dental fenestration for orthodontic treatment, the removal of small maxillary cysts, hard and soft tissue biopsies, oral

frenulum surgery, the removal of orthodontic maxillary plates and wires, minor soft tissue surgery, peripheral nerve cryoanesthesia, laser and cryosurgery of small soft tissue lesions, arthroscopy and arthrocentesis of the temporomandibular joint, and the removal of salivary stones (6). In Spain, most of the aforementioned oral surgical procedures are performed in the Services of Maxillofacial Surgery of the public hospital system - a situation that generates increasingly longer waiting lists and an excessive social and economical burden for the public administration (6). The present study evaluates the surgical activity in the context of the Master of Oral Surgery of Madrid Complutense University (Madrid, Spain), during two academic years, and analyzes social demand in ambulatory oral surgery.

**Patients and Methods**

The present study has been conducted in the context of the Master of Oral Surgery of Madrid Complutense University (Madrid, Spain), with activities in three centers: the Dental School, San Carlos Clinic Hospital, and de la Zarzuela Hospital. The present study focuses on the surgical activity registered in the Dental School in the course of two academic years.

During this period of two years, a total of 5877 patients were treated. In all cases a clinical record was compiled with the patient age, sex, origin or referring center, and the type of procedure carried out. All patients were informed of the purpose of the study, and verbal and written informed consent was obtained. The results were processed using the SPSS version 11.5 statistical package, conducting a descriptive study and calculating the absolute and percentage relative frequencies, with the elaboration of frequency tables for the description of each study variable. Contingency tables were created to analyze the association between two variables using the chi-square test.

**Results**

A total of 5877 patients were treated during the two academic years, with a total of 6750 operations. As to gender distribution, women predominated over males: 62% (n=3647) versus 38% (n=2230), respectively (Figure 1). Most of the patients (59.2%) were between 21-40 years of age, followed by those under age 20 (31.7%), between 41-64 years of age (7.1%), and those over age 65 (1.9%)(Figure 2).



Fig. 1. Patient distribution by sex.

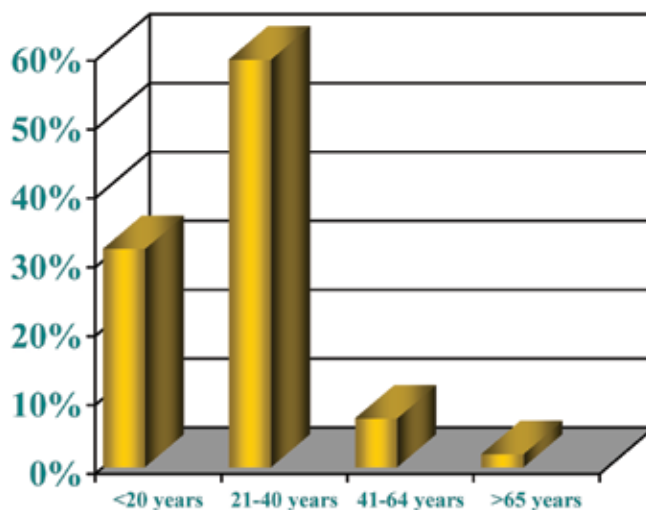


Fig. 2. Patient distribution by age.

INTERVENTION	No. OF CASES	PERCENTAGE
Dental extractions	6152	91%
Periapical surgery	33	0.5%
Orthodontic traction	10	0.2%
Cystectomies	42	0.6%
Bone, torus evening	11	0.2%
Soft tissues	37	0.5%
Consultations	468	7%
<b>TOTAL</b>	<b>6750</b>	<b>100%</b>

Table 1. Distribution of the interventions.

EXTRACTIONS	No. OF CASES	PERCENTAGE
Molars	Lower: 3541: 52.5%	83.5%
	Upper: 2088: 31%	
Impacted canines	84	1.2%
Impacted premolars	21	0.3%
Supernumerary	44	0.5%
Other extractions	374	5.5%
<b>TOTAL</b>	<b>6152</b>	<b>91%</b>

Table 2. Distribution of extractions.

Regarding patient origin, 84% were referred from the Madrid Social Security Institute and the Primary Care Centers pertaining to Doce de Octubre University Hospital in Madrid. In turn, 13.5% of the patients presented on their own accord, while 2.5% were students and personnel of the Dental School.

A full 91% of the operations corresponded to tooth extractions, followed far behind by cyst removal (0.6%), periapical surgery (0.5%) and bone and torus leveling procedures (0.2%). Soft tissue interventions represented 0.5% of the total, and included mainly frenulectomies, biopsies and vestibuloplasties, among other procedures (Table 1).

Among the extractions, lower third molar extractions predominated (52.5%), followed by removal of the upper third molars (31%). The rest of interventions comprised other tooth extractions (5.5%), impacted canines (1.2%), supernumerary teeth (0.5%) and impacted premolars (0.3%)(Table 2).

Finally, consultations and controls accounted for 7% of the procedures. On correlating the interventions carried out with patient age, molar extractions were seen to be

performed mainly in individuals under 20 years of age and in the 21-40 years age interval. In the other two age groups these procedures decreased considerably, while other extractions increased. These results proved statistically significant ( $p < 0.001$ ).

### Discussion

Our results show tooth extractions to be the most common ambulatory oral surgical interventions (91% of the total). This coincides with the observations of Donado, who found tooth extractions to represent over 90% of the surgical activity of general dentists in public or private practice (7). Among the extractions, lower third molar extractions predominated (83.5%), in coincidence with most other studies in the reviewed literature (2,6,8,9). Among other reasons, the above findings could be due to the growing demand for orthodontic treatment, the greater number of panoramic X-ray studies made - allowing early detection of unerupted teeth - and a reduction in caries index. This in turn entails fewer extractions of non-impacted teeth and more extractions of impacted teeth (including third molars)(3,10).

Gilthorpe et al. (10) in 1997 published an evaluation of the surgical activity of most hospitals in the United Kingdom between 1989 and 1994. Oral surgery was seen to account for 1.24% of the operations carried out, and of these interventions, third molar extractions represented 80.8%. These findings are comparable to those published by Satorres et al. (6), who in the context of the clinical activity of the Master of Oral Surgery and Implantology of the University of Barcelona (Spain) during the year 1998, found third molar extractions to account for 80.1% of the interventions. In our study, third molar surgical removal represented a slightly greater percentage (83.5%).

As regards patient profile, most subjects were in the 21-40 years age range, followed by those under 21 years of age. Females in turn predominated over males, in coincidence with the observations of Chaparro et al. (11), who found a larger number of molar extractions in females.

As to patient origin, most subjects (84%) came from Primary Care centers pertaining to Doce de Octubre University Hospital. These data are similar to those reported by Satorres et al. (6), in the study cited above, and by Pérez et al. (3) regarding ambulatory oral surgery in pediatric patients during the year 2000 - where most patients treated came from Primary Care centers.

Likewise, Rodríguez-Armijo et al. (12), in 1998 and in the context of an ambulatory oral surgery pilot program, considered that many oral surgical procedures can benefit from the concept of ambulatory major surgery. Of such interventions, many can be dealt with in Primary Care by dentists - thus allowing a reduction in the waiting lists, important cost savings, and improved quality patient care (13).

Blanco et al. (14), in a study carried out between 1993 and 1995 in public health care area 4 in Madrid, reported

that most disease processes requiring oral surgery can be performed on an ambulatory basis. They therefore recommended the creation of surgical units associated to the Primary Care centers of the public health system, to improve patient care and probably also reduce the costs by allowing definitive treatment of many disorders, a reduction of the waiting lists, and fewer working days lost. The authors also considered the universities to play a very important role, offering ongoing training courses and postgraduate programs to ensure the necessary professional training to meet the existing patient demand.

In this sense, Rodríguez et al. (15) in relation to public postgraduate training in oral surgery in Spain reported that students offer a positive general evaluation of oral surgical training - except as refers to complex subjects that appear to be more amenable to maxillofacial surgeons.

We thus can conclude that surgical dental extractions are the interventions most in demand in oral surgery (particularly as refers to third molars), and are the most common treatments provided in the context of ambulatory oral surgery.

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