



# Twenty four years of oral and maxillofacial surgery malpractice claims in Spain: patient safety lessons to learn

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## Abstract

**Purpose** Oral and maxillofacial surgery (OMS) malpractice risk is of special interest due to both the aesthetic component of some procedures and the complexity of the pathologies involved. This study aims to identify relevant factors involved in OMS professional liability (PL) claims to help achieve better management of risks and improve patient safety.

**Methods** We performed a retrospective analysis of 315 OMS claims opened between 1990 and 2014 from the database of the PL Department of the Catalanian Council of Medical Colleges, and identified their clinical, economical and juridical characteristics.

**Results** OMS showed a high rate of compensation (33.8%). Dental implant surgery, third molar surgery and rhinoplasty presented the greatest exposure to claims, and in these cases, lack of osteointegration of dental implants, neurologic injury of inferior dentoalveolar/lingual nerves and a poor aesthetic result were the most frequently compensated sequelae. Statistically, significant association was found between this perioperative complications group and the presence of PL. Poorly documented patient information (informed consent document) was also significantly related with PL outcome.

**Conclusions** OMS is a specialty of medium risk for claims, especially oral surgery cases. Surgical complications, such as neurologic damage after oral/head and neck procedures and poor aesthetic results, do occur and deserve special attention to improve patient safety, as well as patient-information procedure.

**Keywords** Malpractice · Claims analysis · Professional liability · Patient safety

## Introduction

Patient safety and professional liability are the major concerns worldwide. Increasing malpractice litigation risks and medical liability insurance premiums have caused widespread concerns regarding their effects on medical care [1]. In 2002, the World Health Assembly adopted a resolution that urged member states to pay the closest possible attention to the problem of patient

safety and the systems of monitoring [2]. In this context of public interest for the security of patients, it is worth noting that the scientific literature has reported particularly high rates of adverse events in the surgery setting [3, 4].

The risk of litigation changes the practice of specialists and is one of the most cited factors by professionals to influence their decision on whether to provide medical care. Also, an increasing tendency of claims for negligence of adverse events has been

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reported, and professionals dedicated to oral and maxillofacial surgery (OMS) are sensitive to this current problem [5].

Most allegations in surgery lawsuits against oral and maxillofacial surgeons relate in some manner to the deficiency in the surgical practice and/or the presence of postoperative complications [6, 7]. Other reported bases of allegation relate to the mistakes or delays in the diagnosis and the persistence or recurrence of the disease [8]. Whereas the scientific literature about the legal-medical implications of the OMS practice is relatively scarce, considering the type of medical act involved in litigation, most were procedures related to oral surgery and facial aesthetic surgery [8].

Furthermore, the transcendence of the information prior to any treatment is shown as a recurrent theme in the international bibliography, and it seems advisable to use the information generated in consensus of the specialty for the writing of the informed consent documents (DCI) that refer to the most common complications [9].

Analyses of the surgical acts that lead to claims against OMS physicians, as well as the different legal-medical aspects of such claims, contribute to increased knowledge in areas that require special attention and improvements, which could increase patient safety. Reducing liability risk requires an understanding of the prime reasons physicians are sued [10, 11], and different scenarios need to be studied to achieve a comprehensive international picture.

Hereby, we present a 315 malpractice claim analysis in OMS, exploring the clinical and legal characteristics of the sample. Findings from this study will help identify the specific areas at high risk for malpractice claims and understand the various-related circumstances, maintaining patient safety associated with OMS care and thus diminishing the number of adverse events and professional liability claims.

## Material and methods

The Professional Liability Department (PLD) of Barcelona's Official College of Physicians has its own claims database. It collects information of claims against physicians from the main liability insurance company in Catalonia (Spain), with more than 26,000 insured physicians (approximately 70% of physicians in our region). The data sources consist of clinical records, narrative statements, expert and peer reviews, deposition summaries, outcome reports and the cost of the settlement or award. Expert physicians and lawyers use a standardized electronic form to collect information on patient data, clinical characteristics, adverse events and procedure outcomes. Further information about the system can be found in our previous article [12].

Claim files associated with OMS from the January 1, 1990 to the December 31, 2014 were identified and reviewed from among a total of 7,909 claims. Every claim related directly to

some procedure or medical complication corresponding to the OMS specialty was included. For the purpose of the analysis, the events that caused the claim were classified in different categories according to the clinical data collected in the review. The solving procedure was dichotomized as “court” versus “out-of-court”, depending on the courts participation in the resolution. Outcomes were dichotomized as “with” versus “without liability”, according to whether or not indemnity payment was made. Cases awards were registered (allocated loss expenses and attorney fees not included).

We performed a descriptive analysis of the adverse events that led to claims during our study period, as well as their economic and juridical characteristics. Differences between groups were compared with the chi-square analysis test with  $P < 0.05$  for statistical significance. The statistical software package SPSS 12.0 was used for all data analyses. SRP has the CCMC Ethics Committee approval for research in the field.

## Results

Of the 7,909 registered claims in the Service of Professional Liability (SRP) of the CCMC between 1990 and 2014, 315 (4%) were related directly to some procedure or medical complication corresponding to the OMS specialty. Among the 315 procedures, 202 (64.13%) were solved “without liability”, 103 ended up in a payout (either by conviction or out-of-court settlement) (32.69%) and 10 cases are not closed yet. One hundred seventy two claims (54.60%) had court involvement (at least started through the courts). The average compensation in those cases considered to have professional liability was 19,639.58 €, and the mean amount awarded in out-of-court and court-solved procedures was 13,318.39 € and 24,217 €, respectively.

Notwithstanding, the expertise profile of the physicians involved was mixed, as 40% of the claims involved specialists in OMS, with the remainder in other specialties, such as dentistry/oral surgery (22.86%), plastic surgery (20%), and otolaryngology (5.08%), among others. With regard to reiteration in the claims to specific physicians, 200 physicians were claimed against on a single occasion, whereas 115 were involved in 2 or more claims.

Of the 315 surgical procedures claimed, 52% were performed in a hospital setting and the other 48% in an outpatient setting (developed in medical/dental offices or medical centres). Most of them were scheduled, non-urgent surgical events (95%), and there was statistically significant association between the urgency of the claimed act and the presence of professional liability ( $[P = 0.042]$ , Fisher's exact test = 0.067), assuming liability cases a higher percentage in the scheduled events than in the urgent ones, with 35% vs 8%.

Most claims related to oral surgery (184 claims; 58.41%) and facial aesthetic surgery (81 claims; 25.71%) (Table 1). In pathologies affecting aesthetic aspects or minor diseases (as

aesthetic facial surgery and oral surgery), we found a higher percentage of cases with professional liability outcome—higher rate of payment—(37% in aesthetic facial surgery, 34.8% in oral surgery). Implantology diseases were the most frequently claimed event (95, 30.15% of the total claims), and most claims related to the lack of implant osseointegration (45, 14.28% of the total claims) (Table 2).

The reasons given for the claims were various, but the main causes were a defect of surgical practice (65.1%) and perioperative complications after the procedure (13.33%) (Table 3). The perioperative complications most frequently related to OMS claims included functional, sensory motor, and aesthetic diseases, adding among the three 68.5% of the total damages. Functional diseases rank in first position (76/315, 24%). Lack of dental implant osseointegration (45/76 cases, 59%) and wrong or unforeseen tooth extraction (15/76, 20%) were the two most prevalent complications within this group. The sensitive motor diseases due to nerve injury were in second place, with 71 of 315 cases constituting 22.54% of the total diseases, being within this group the anaesthesia/paresthesia of the inferior alveolar and lingual nerves the most prevalent complications (42% and 27%, respectively). The aesthetic diseases rank in third position, with 69 of 315 cases constituting 22% of the total diseases, being within this group the final aesthetic defect after surgery (objective fact) or failure to achieving the expected result and facial scar the most prevalent complications (59% and 23%, respectively).

There was a statistically significant association between the perioperative complications group and the presence of professional liability ( $P = 0.042$ ). Sensitive damage group registered the highest proportion of cases with professional liability (42.6%), followed by functional diseases (41.3%).

On the other hand, in 243 of the claims (77.14%), the DCI was included, whereas in 23 claims (7.3%), it was not included. This data could not be obtained in 15.56% of claims of the total sample (49/315) due to the lack of information on the files. A statistically significant association between obtaining DCIs and the presence of professional liability was found ( $P = 0.000$ ).

## Discussion

Litigation analysis has been described as a patient safety instrument and a method of reducing medical malpractice claims in various fields of medicine including head and neck surgery [13–19]. Its purpose is to identify common sources of litigation for a given medical specialty, procedure, or diagnosis to determine those sources that may be prevented.

Despite covering a wide range of pathologies, OMS is considered of medium risk for being subjected to a claim, and consequently a court procedure, when compared with other specialties. Data regarding the number of cases or complexity of the procedures faced in OMS are lacking in our environment, but OMS procedures accounted for the 4% of the registered claims during the study period and the rate of payouts are higher than the general sample’s percentage (17.32%), although payout amounts are lower [20]. This percentage ranks OMS in seventh position of claims frequency in our environment, after orthopaedics and trauma surgery, obstetrics and gynaecology, and plastic, aesthetic and reconstructive surgery among others [20].

If we perform a OMS procedure, we might be claimed, and, furthermore, being claimed more than once is not so rare. One hundred fifteen physicians were involved in two or more claims. We have previously analysed reiteration in the claims to specific physicians among the general sample, although limited to those with a paid claim, and reported that specialty is a particularly strong determinant of claim incidence, so the risk issue may not be so individually determined, but conditioned by the kind of medicine or procedures we practice [21]. In the OMS sample, this may relate with the aesthetic component of the specialty. We stated that physicians’ risk of future paid claims increases after the second claim; therefore, interventions at a physician level with those physicians in the OMS sample with more than one paid claim may deserve a special attention from the system [21].

Nevertheless, in our sample, most claims did not involve a real defect of praxis and were solved “without liability”

**Table 1** Type of surgery and compensation payments

	Closed claims, <i>n</i> (%)	Claims with consequences, <i>n</i> (%)	Statistical significance between type of surgery and professional liability	Mean compensation payment
Facial aesthetic surgery	81 (25.71%)	30 (37%)	Pearson chi-square ( $P = 0.392$ )	15,355.77 €
Oral surgery	184 (58.41%)	64 (34.8%)		15,590.59 €
Head and neck infections surgery	7 (2.22%)	2 (28.57%)		53,446.5 €
Salivary gland surgery	4 (1.27%)	1 (25%)		65,778.3 €
Other procedures	4 (1.27%)	1 (25%)		15,850 €
Oncologic surgery (except oncologic salivary gland surgery)	11 (3.49%)	3 (27.3%)		90,833.33 €
Dentofacial deformities surgery	10 (3.17%)	1 (10%)		60,952.66 €
Facial trauma	14 (4.44%)	1 (7.14%)		30,050.6 €

**Table 2** Claimed procedures in oral and aesthetic surgery

Procedure claimed	Number of claims, <i>n</i> (%)	Professional liability outcome, <i>N</i> (%)
Oral surgery	184	64 (34.8%)
Implantology	95 (51.63%)	33 (34.7%)
Third molar surgery	60 (32.61%)	19 (31.7%)
Wrong tooth extraction	15 (8.15%)	7 (46.7%)
Extraction of the not included tooth	11 (5.98%)	2 (18.2%)
Other dental inclusion surgeries	1 (0.54%)	1 (100%)
Orthodontic–preprosthetic surgery	1 (0.54%)	1 (100%)
Maxillo-mandibular cysts surgery	1 (0.54%)	1 (100%)
Aesthetic surgery	81	30 (37%)
Rhinoplasty	53 (65.43%)	19 (35.8%)
Facial lift surgery	21 (25.93%)	7 (33.3%)
Blepharoplasty	3 (3.70%)	2 (66.7%)
Aesthetic implants	2 (2.47%)	1 (50%)
Lipofilling	2 (2.47%)	1 (50%)

(64.13%), although percentage of paid claims is higher than general sample's percentage (17.32%) [20]. Claims do reflect claimant's disappointment and may relate to a public belief that bad outcomes should not be tolerated and merit financial compensation and punishment [11]. Fortunately, most of the claims in OMS aim to archive an economic agreement for the damaged caused, with a high percentage of out-of-court claims (45.40%) and civil lawsuits (34.29%), whilst criminal procedures were minority (20.32%). In this sense, our sample showed lower amounts of compensation payments than those reported internationally. Gulati et al. [22] reported that the mean amount of compensation for those OMS claims solved in favour of the plaintiff was £36,488 (approximately 41,957.01 €). In our study, the average payment per claim was 19,639.58 €, remarkably less than those reported abroad. The amount of the payout relates strongly with the system of injury assessment that rules in each country. In Spain, the law that rules in the case of payouts for traffic injuries is frequently used in professional

liability cases which caps damages in a different way than in EEUU. It establishes a minimum and maximum amount for each sequel. Liability in oncologic, orthognathic and salivary glands surgery were uncommon but large amounts were paid, specifically in cases with permanent patient injury. International differences in liability payouts are both a limitation of the generalizability of our results and an opportunity to learn from each other regarding insurance management.

Regarding clinical issues, although data about this subject in our country are lacking, a review of the scientific literature at the international level shows several articles from the USA, UK and Australia that have undertaken similar works [6–8, 22–24]. They analyse similar periods and their index of claims are similar, but some results differ from our study. This could be related to differential characteristics of the OMS activity between countries. In Spain, OMS is a relatively “young” and dynamic specialty, which covers different fields of action in which specialists can subspecialize, ranging from oral surgery

**Table 3** Reason given for claims

Adverse event claimed	Number of claims, <i>n</i> (%)	Professional liability outcome, <i>n</i> (%)
Defect of practice	205 (65.1%)	76 (37.1%)
Postsurgical complication	42 (13.33%)	14 (33.3%)
Misdiagnosis	22 (6.98%)	2 (9.1%)
Sequelae	19 (6.03%)	3 (15.8%)
Deficiencies in the informed consent process	12 (3.81%)	5 (41.7%)
Failure to follow up	7 (2.22%)	2 (28.6%)
Delay of assistance	4 (1.27%)	0
Lack of medical means	1 (0.32%)	0
Contagiousness	1 (0.32%)	0
Denial of help	1 (0.32%)	1 (100%)
False public document	1 (0.32%)	0

and aesthetic procedures to oncological procedures, craniofacial deformities (of great complexity and risk) and the surgery of the salivary glands.

Andrew R. Simonsen et al. [7] reviewed 315 claims obtained from 16 members of the Physician Insurers Association of America (PIAA), closed between 1978 and 2007. Oral surgery and facial aesthetic procedures were not included in their study. Perioperative complications represented the largest cause of claims (53.7%), higher than the 13.33% found in our sample, where the defect on the surgery procedure was the largest cause (65.1%). Among perioperative complications, nerve injuries were the largest group (20.3%), similar than in our sample (22.54%).

In a 2015 study by Badenoch-Jones et al. [8], just 15 cases over a 20-year period were located across almost all Australian jurisdictions. Judicial cases dealing with medical negligence in the fields of general dentistry (oral surgery procedures) and oral and maxillofacial surgery were analysed using their three main legal databases. Aesthetic facial surgery cases were not included in this study either. Eight cases involved general dental practitioners (53.3%) with the remaining seven cases dealing with oral and maxillofacial surgeons (46.7%). Eight cases involved third molar tooth extraction with nerve damage in four cases, and three cases related to orthognathic surgery, with nerve damage in two of those cases. Six cases of nerve damage were reported (40% of the sample), higher than the 22.5% in our sample.

Peter F. Svider et al. [6] evaluated medical negligence cases in craniofacial surgery, during a 24 years period between 1989 and 2013. As in our study, plastic surgeons, oral surgeons and otolaryngologists were the most commonly named defendant specialties. Including out-of-court settlements, 74% of cases were solved in the defendant's favour (84.18% in our study) and the most common alleged factor raised in litigation was intraoperative negligence (81%, higher than the 65.1% in our sample).

The most common alleged factors raised in our sample were intraoperative negligence and perioperative complications after the procedure, and among perioperative complications, functional diseases were the largest group (24.13%), followed by nerve injuries (22.54%) and poor cosmetic results (22%). Overall, as dental implant surgery, third molar surgery and rhinoplasty are very common procedures in the oral and maxillofacial surgeon's practice; they also represent the greatest exposure to both court and out-of-court claims in order to get a financial compensation for the damage caused. In these cases, lack of osteointegration, the poor aesthetic result and neurological injury of inferior dentoalveolar/lingual nerves are the most frequently compensated sequelae. Accordingly, neurological deficit has been described in the literature as one of the most common causes of claims following wisdom teeth extraction or implant placement, ranging from the 18.1 to 25% [23, 24].

Treatments with high aesthetic components, such as oral surgery and aesthetic facial surgery (two of the most common elective surgical procedures in OMS [8, 22, 23], that should typically have a low morbidity rate, are those that generate the most dissatisfaction in patients when the results are not as expected. Therefore, they give place to a significant number of claims according to our data (55.86% of implantology and aesthetic facial surgery cases in our sample). In pathologies affecting aesthetic aspects or minor diseases (such as aesthetic facial surgery and oral surgery), we found a high percentage of cases with professional liability outcome and a higher rate of payment (37% in aesthetic facial surgery, 34.8% in oral surgery).

Wrong-site surgery should also be a matter of concern in OMS, with 15 cases of wrong or unforeseen tooth extraction, which should be considered a “never event” in medicine [25].

The issue of information about OMS procedures cannot be overstated. It applies to all causes of medical malpractice but most specifically to claims related to surgical complications, and even more in aesthetic procedures, considered elective surgery [26]. Therefore, we must be exhaustive in offering patients the right information, obtaining patients' consent and should use informed consent documents (DCIs) when appropriate [27]. Both verbal and written communications are essential in medical practice. Written consent should be obtained by a member of the surgical team who is fully familiar with the operation, and all relevant complications should be noted and explained [22]. The significance of information prior to any treatment is shown as a recurrent theme in the international literature, and in our sample study, there is a statistically significant association between obtaining DCIs and the presence of professional liability ( $P = 0.000$ ).

In conclusion, in our geographic region, Catalonia (Spain), claims are likely to be triggered by bad outcomes but very few malpractice claims actually involve medical negligence. Furthermore, although OMS treats severe pathologies, such as oncologic surgery or craneofacial deformities surgery, that deserve special attention due to their complexity, unsatisfactory surgical procedures linked to mind pathologies (such as aesthetic surgery of the face and oral surgery procedures) are more frequently claimed. In those procedures, results that do not fulfil the patient's expectations are likely to merit a claim, so close adherence to clinical practice guidelines and a complete both verbal and written information and communication prior to any treatment are essential, both in terms of quality and safety of care as in preventing malpractice claims. Written consent should be obtained, and all relevant complications should be noted and explained.

The data presented in this review show that litigation is a part of medical practice in OMS specialty. The number of claims in OMS may be related to high expectations of patients and unsatisfactory results, rather than with a true malpractice. Nevertheless, in order to protect patients against faulty practices, increase patient satisfaction and protect physicians who

act reasonably, safety issues highlighted by claim analysis should be strongly addressed.

## Limitations

Although the data collected do not represent 100% of the claims filed in relation to OMS practice in our environment (there is an unknown percentage following a procedure of patrimonial liability in the contentious administrative courts concerning the public health centres in the area of Catalonia), our investigation is the first in our country to analyse so many claims over such a long period and covering the whole spectrum of surgical procedures in oral and maxillofacial surgery.

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## Compliance with ethical standards

**Conflict of interest** The research was carried out by the Professional Liability Department of the Council of Physicians Colleges of Catalonia.

**Ethical approval** The Professional Liability Department of the Council of Physicians Colleges of Catalonia has the ethical approval to analyse records of claims by the Ethics Committee of the Barcelona's College of Physicians.

**Informed consent** There was no a priori informed consent for the use of data, regarding this record review. Any identifying information from the data set was removed before analysis and treated confidentially.

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