BEHIND HER SCALPEL

A Practical Guide To Oral And Maxillofacial Surgery With Stories Of Female Surgeons

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with Co-Authors Rania A. Habib, MD, DDS and Leslie Halpern, MD, DDS, PhD, MPH and Contributors

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Foreword by Dr. Maria Maranga

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CHAPTER 1

What Is Oral And Maxillofacial Surgery?

"Medicines cure diseases, but only doctors can cure patients."

—Carl Jung

When I was a second-year dental student at Columbia University many moons ago, there was a fair about all dental specialties. Each specialty set a table with pamphlets, brochures, and instruments to showcase what a specialist's future might hold. I distinctly remembered hearing roaring noises from the corner table. I turned my head and saw a group of big guys hovering over a station that displayed, "oral and maxillofacial surgery." I wiggled my way in only to see a spread of extraction instruments and I was quickly body-blocked. My first organic reaction was that I didn't feel I belonged because that was the only table full of men.

However, during the last two years of dental school, my clinical rotation in oral and maxillofacial surgery sparkled something within me. One of the first surgical procedures I saw in the VA clinic was a repair of an oroantral communication, a hole between the mouth and the sinus, as a result of an upper molar extraction. I learned

upper molar roots could extend into the maxillary sinus, and dental extraction could potentially cause perforation of the sinus membrane, a thin lining between the mouth and the sinus. Perforation would lead to an opening between the mouth and the sinus. This patient complained that every time he drank coffee, it came out from his nose. During my one month rotation, I witnessed the surgeon close the hole in the maxillary sinus with the aid of a small piece of gold foil, which later led to healing and closing of the area. I was fascinated by the execution of the technique and how the human body responded to a simple elegant maneuver. I was inspired by the magical gold foil. For the last two years of dental school, I explored further into the specialty of oral and maxillofacial surgery, because I was determined to learn more techniques like that to help people resume day-to-day functions most of us take for granted—such as drinking coffee and not having it come out our nose.

What is oral and maxillofacial surgery? The word "maxillofacial" is often confusing and not well understood. Currently, oral and maxillofacial surgery is one of twelve dental specialties recognized by the National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSCB). Its definition is as follows:

> *"Oral and maxillofacial surgery is the specialty of dentistry which includes the diagnosis, surgical and adjunctive treatment of diseases, injuries and defects involving both the functional and esthetic aspects of the hard and soft tissues of the oral and maxillofacial region." (adopted May 2018)*[2]

Oral Surgeon Or Oral Maxillofacial Surgeon?

Have you been a patient needing an oral surgery procedure? What is your impression of an oral surgeon? One of the most common questions I get from patients is: "What is the difference between an oral surgeon or oral maxillofacial surgeon?"

[2] Specialty Definitions. National Commission on Recognition of Dental Specialties and Certifying Boards. ADA.org. NCRDSCB. American Dental Association. https://www.ada.org/en/ncrdscb/dental-specialties/specialty-definitions (accessed May 2021)

Oral and maxillofacial surgery is still a less understood specialty compared to other dental or medical specialties. In a recent study from JOMS by Dalmao et al.[3] investigating the public and professional perceptions of the scope of practice of oral and maxillofacial surgeons, random surveys were sent to the general public, general dentists, and primary care physicians. It was found that more than 25 percent of the general public is unaware of oral and maxillofacial surgery. There was also a low level of awareness among general dentists and primary care practitioners as to the full scope of oral and maxillofacial surgery.

Even the nomenclature of DDS (doctor of dental surgery) versus DMD (doctor of dental medicine) is confusing to the general public. Does the connotation of DDS or DMD have anything to do with the type of specialists? (It doesn't.) Is one better than the other? (They are equivalent.) Most don't understand why some have dental degrees while others have dental and medical degrees. And the abbreviations—OS as in oral surgery, or OMS as opposed to OMFS in reference to oral and maxillofacial surgery—seem to be used interchangeably. To the general public, oral and maxillofacial surgeons are known as dental and medical specialists. Patients may not always understand why they need to visit different dentists for different procedures. Patients also may not understand why we are sometimes called oral surgeons and other times called oral and maxillofacial surgeons. Even dental students or practicing dentists may not all understand the full scope of oral and maxillofacial surgery.

In 1975, the specialty changed its name from "oral surgery" to "oral and maxillofacial surgery." Most people have trouble pronouncing the word "maxillofacial," plus oral and maxillofacial surgeon is not as intuitive or self-explanatory as say, an orthodontist or a dermatologist. Inconsistencies in the names and branding within the profession, often omitting the word "maxillofacial" when communicating with patients,

[3] Oscar Dalmao et al., "Public and Professional Perceptions of the Scope of Practice of Oral and Maxillofacial Surgeons." *JOMS* Vol. 79, Jan 2021: Pg. 18-35.

are not uncommon. Ameerally et al.[4] suggested changing the term "oral and maxillofacial surgeon" to "oral and facial surgeon." Some practices use "oral facial surgery" in their name. Guerrero et al.[5] investigated undergraduate students' perception of specialty's name and showed there's an increased awareness among undergraduate students when "oral facial surgeon" was used instead of "oral and maxillofacial surgeon." Interestingly, no difference was found among dental students.

Regardless of the type of training programs, four-year or six-year, we are all called oral and maxillofacial surgeons. Some surgeons choose to practice a full scope of oral and maxillofacial surgery while others prefer a narrower one, naming their practices differently to reflect the procedures performed. There are oral and maxillofacial surgeons who exclusively practice implant dentistry or cosmetic surgery. Many others practice dentoalveolar surgery, or what is considered the "bread and butter" of oral surgical procedures such as surgical extractions and implant surgery with the option of office-based anesthesia. Many surgeons may also hold faculty positions or conduct clinical research in a hospital setting or a teaching institution, or both. One of the advantages of being an oral and maxillofacial surgeon is having a wide array of practice options and flexibility based on area of interest and expertise. You can practice in a private sector, in a university, in a hospital, or a combination of all. Within the scope of practice, you can decide to focus on a few areas or practice a full scope of procedures.

What Does An Oral And Maxillofacial Surgeon Do?

Dental extraction, or exodontia, remains as one of the most common procedures performed in an outpatient setting, with the option to perform outpatient anesthesia. However, oral and

[4] P. Ameerally, AM. and Fordyce, IC. Martin, "So you think they know what we do? The public and professional perception of oral and maxillofacial surgery." *Br. J Oral Maxillofac Surg* 32 (1994) 141

[5] AV. Guerrero, A. Altamirano, E Brown, CJ Shin, K Tajik, E. Fu, J. Dean and A. Herford, "What name best represents our specialty? Oral and Maxillofacial surgeon versus oral and facial surgeon." *JOMS* Vol. 75, Issue 1.(2017) P9-20

maxillofacial surgeons are more than "exodontists," a term used in the past.

In 1988, the Second Invitational Conference on OMS (IAOMS) in Bermuda developed a consensus regarding the scope of OMS,[6] which includes:

- Oral pathology/oral medicine
- Dentoalveolar surgery
- Pre-prosthetic surgery (including implantology)
- Surgical and nonsurgical management of TMJ dysfunction
- Facial trauma
- Oncology
- Regional reconstructive surgery
- Orthognathic surgery
- Microsurgery
- Esthetic surgery
- Cleft lip and palate surgery
- Craniofacial surgery
- Others (as technological advances dictate)

Moreover, the *Parameters of Care* was originally developed between 1986 to 1988 by a special committee appointed by the American Association of Oral and Maxillofacial Surgeons (AAOMS) Board of Trustees to address areas of specialty that described patient management strategies, including guidelines, criteria, and parameters. The most recent version of AAOMS ParCare 2017[7] includes eleven areas of oral and maxillofacial surgery:

[6] AP.Punjabi and RH. Haug. "The development of the dual-degree controversy in oral and maxillofacial surgery." *JOMS* 48(6) (1990) 621-6

[7] "Parameters of Care: AAOMS Clinical Practice Guidelines for Oral and Maxillofacial Surgery (AAOMS ParCare), Sixth Edition 2017." Supplement to the *Journal of Oral and Maxillofacial Surgery*. JOMS Vol.75 (2017) No.8, Suppl 1.

- Patient assessment
- Anesthesia in outpatient facilities
- Dentoalveolar surgery
- Dental and craniomaxillofacial implant surgery
- Surgical correction of maxillofacial skeletal deformities
- Cleft and craniofacial surgery
- Trauma surgery
- Temporomandibular joint surgery (TMJ)
- Diagnosis and management of pathological conditions
- Reconstructive surgery
- Facial cosmetic surgery

History Of Oral And Maxillofacial Surgery

It would be impossible to understand the specialty of oral and maxillofacial surgery without developing an appreciation for the history of dentistry and oral surgery, the development and evolvement of organizational dentistry and academic programs, and the pioneers who helped to shape and form the specialty to where we are today.

1800 To Early 1900s

During the early 1800s, dental schools did not exist. Most common procedures such as tooth extractions, treatment of dental infections, or treatment of tumors were performed by surgeons who were dentists or physicians, or non-healthcare providers such as barbers or blacksmiths.[8]

The first dental college in the world, Baltimore Dental College, was established in 1840 as a non-university-affiliated dental school, and was the birthplace for the doctor of dental surgery (DDS) degree. Baltimore Dental College later became University of Maryland

[8] Leonard B. Kaban and David H. Perrott, "Dual-degree oral and maxillofacial surgery training in the United States: Back to the future" *JOMS,* Vol. 78, Issue 1 (2020)18-28.

School of Dentistry.[9] In 1867, Massachusetts General Hospital and Harvard University opened the first university-affiliated dental school and conferred the doctor of dental medicine (DMD) degree. Dr. Nathan Cooley Keep was the first dean. He popularized the use of ether anesthesia.[10] In 1918, Dr. Menifee Howard invited a group of twenty-nine dentists, or "exodontists," to form the American Association Society of Exodontists, which was then recognized by the National Dental Association in 1919. The National Dental Association became today's American Dental Association.[11]

During this time, there were two especially notable pioneers: Simon P. Hullihen (1810-1857) and James E. Garretson (1825-1895).[12] Hullihen was a physician and the first surgeon in the US to limit his practice to oral and maxillofacial surgery. Garrettson was the first to introduce oral surgery to the Philadelphia Dental College in 1864. Philadelphia Dental College is today's Temple University. He was also the first appointed oral surgery professor in the country. He wrote a textbook in 1869 called *A System of Oral Surgery*.

Wars Accelerated The Need For OMS

World War I and World War II played key roles in the development of oral and maxillofacial surgery. Facial injuries and reconstructions were performed by mostly physicians who held MD degrees, and dentists who volunteered to work in the army.[13] The specialty of plastic surgery did not exist. Deformed faces were covered by masks. Exodontists evolved to perform more extensive oral and facial surgeries during wartime, gradually expanding the scope of practice, which was reflected over time with a name change.

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[9] University of Maryland, Baltimore. "History." University of Maryland, Baltimore. Accessed May 29, 2021. https://www.dental.umaryland.edu/about/history/.

[10] Leonard B. Kaban and Walter C.Guralnick, "Massachusetts General Hospital/Harvard MD Oral and maxillofacial surgery program." *JOMS* Vol.63. Issue 8 (2005), 1069-72.

[11] AAOMS Centennial. AAOMS History. https://www.aaoms.org/about/aaoms-centennial. (Accessed May 8, 2021).

[12] Daniel Lew. "Chapter 1: Founding A historical overview of the AAOMS". *AAOMS* 2013, Pg. 3,

[13] Danial Lew. *A historical overview of the AAOMS*, Pg. 2.

In 1921, the name of the organization American Association Society of Exodontists was changed to American Society of Oral Surgeons and Exodontists, then later changed to American Society of Oral Surgeons in 1946, and again in 1978 to American Association of Oral and Maxillofacial Surgeons.[14]

During this time, a few key events happened that further facilitated the development and maturation of oral and maxillofacial surgery.

Hospital-Based Dental Services

To perform surgical procedures such as full-mouth extractions, repair of extensive facial trauma or removal of tumors, hospital privileges and presence of dental clinics became necessary. With the discovery of ether anesthesia by Boston dentist William Morton in1846 and penicillin by Alexander Fleming in 1928, more extensive surgical procedures were carried out in the hospital setting.[15] The proposal of dental services in hospital facilities was originally opposed by the medical community. Reasons of objection included lack of academic curriculum, accreditation agency, and professional journal.

Dental Accreditation

In 1936, the American Hospital Association supported dental care in the hospitals. Internship programs began to increase. The Council on Dental Education (CDE) was created in 1949 and the American Dental Association became the accreditation agency. In 1945s annual meeting of the American Society of Oral Surgeons (ASOS), a committee was authorized to conduct examinations for the certification of specialists in oral surgery. The American Board of Oral Surgery (ABOS) was established. The following year, the Board of the American Society of Oral Surgeons was incorporated; its name was changed in 1978 to American Board of Oral and Maxillofacial Surgeons (ABOMS), as it is known today, to reflect the scope of the

[14] Daniel Lew. *A historical overview of the AAOMS*. Chapter 1.

[15] Leonard Kaban and David H. Perrott. "Dual degree oral and maxillofacial surgery training in the United States: back to the future." *JOMS* 2020. 78:18-28

specialty. ABOS and ABOMS were incorporated under the laws of the state of Illinois.[16]

First Issue Of The *Journal of Oral Surgery*

In 1942, the Board of Trustees of the American Dental Association voted to publish the *Journal of Oral Surgery*.[17] The first issue was published in 1943. In 1981, the ownership and publication were purchased by the American Association of Oral and Maxillofacial Surgeons, and the following year, the *Journal of Oral Surgery* changed its name to the *Journal of Oral and Maxillofacial Surgery.*

Continuous Evolution And Development Of Training Programs

The initial one-year internship OMS training in the thirties and forties gradually evolved into a mandated three-year program by the American Society of Oral Surgeons in 1967. In 1985, the American Association of Oral and Maxillofacial Surgeons mandated a four-year integrated program, which includes:

- One-year OMS internship
- One year of rotation (three months of medicine, three months of surgery, four months of anesthesia, and two months of an elective)
- Twenty-four months of junior and senior resident level[18]

In 1971, Harvard Medical School developed a five-year integrated oral surgery/MD program. Dr. Walter Guralnick, chief of oral surgery at MGH and Harvard School of Dental Medicine, felt dual-degree training would be necessary to correct the educational deficit present in OMS training programs. He was also an advocate

[16] Daniel Lew. *A historical overview of the AAOMS*. Chapter 3. AAOMS.

[17] Daniel Laskin. "The History of the Journal of Oral and Maxillofacial Surgery." *JOMS* 76 (2018): 2046-2050.

[18] Leonard B. Kaban and David H. Perrott: *"Dual-degree Oral and Maxillofacial Surgery Training in the United States: Back to the future."* Pg. 21.

of a full-time faculty training model, as most faculty members in the sixties and seventies were part-time. In 1995, the five-year residency program was expanded into a six-year program under the leadership of Dr. Leonard B. Kaban and Dr. David H. Perrott, with two years of medical school built into it.[19]

From the 1940 through the 1970s, the competition of the overlapping scope of the practice between otolaryngology and plastic surgery presented challenges for OMS in the medical community. Dual-degree programs arguably allow broader scopes of practice and opportunities for advancement to fellowships in head and neck oncology and reconstructive surgery, craniofacial surgery, cosmetic surgery, and other advanced fellowship programs. However, there are many single-degree OMSs who are pioneers and exceptional surgeons practicing full-scope oral and maxillofacial surgery, and their contributions are by no means limited by their single degree. According to the *2019-2020 OMS Program, Resident and Faculty Summary Report,*[20] there are currently one hundred accredited OMS programs—fifty-five single-degree OMS programs and forty-five dual-degree OMS programs—and twenty-three programs that offer both single- and dual-degree tracks. Out of 1,197 residents, 59 percent are enrolled in single-degree programs and 41 percent are in dual-degree programs, plus 19 percent residents are female, an increase from 16 percent in the previous year.

Development Of ACOMS[21]

In 1947, Dr. W. Harry Archer, Dr. Herbert J. Bloom, and Dr. Kurt H. Thoma were three oral surgeons in Boston who initiated conversations of gathering certified oral surgeons to form an

[19] Leonard B. Kaban and Walter C. Guralnick. *"Massachusetts General Hospital/Harvard MD Oral and Maxillofacial Surgery Program"*. Pg.1070

[20] "2019-2020 OMS Program, Resident and Faculty Summary Report." *AAOMS*. (Accessed May 2021) https://www.aaoms.org/docs/education_research/edu_training/aaoms_faculty_resident_summary.pdf

[21] "History of ACOMS." American College of Oral and Maxillofacial Surgeons. (Accessed May 2021) https://www.acoms.org/general/custom.asp?page=History

organization to address issues of the American Board of Oral Surgery. Dr. Thoma proposed having a Fellowship of Diplomates of the American Board of Oral Surgeons.

A new organization called the American Diplomates of the American Board of Oral Surgery (ADABOS) received support in 1964, but continued to have challenges and issues. In 1974, the name American College of Oral and Maxillofacial Surgeons was proposed. Its primary objective was to focus on "the upgrading of the quality of the policies and practices of the American Board of Oral Surgery in keeping with the best interests of the specialty." The name was proposed by Dr. Chester Chorazy, and subsequently trademarked.

Today, the American Association of Oral and Maxillofacial Surgeons, American College of Oral and Maxillofacial Surgeons, and American Board of Oral and Maxillofacial Surgeons hold annual conferences and meetings for their members as key organizations for the specialty.