



Impact Of Covid-19 On Oral Surgery Practice: A Review

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Abstract

The COVID-19 pandemic caused by SARS-CoV-2 profoundly altered healthcare delivery worldwide, with dentistry and oral and maxillofacial surgery (OMFS) among the most affected specialties due to the risk of aerosol transmission. This review aims to evaluate the impact of COVID-19 on oral surgery practice, including third molar impaction management, maxillofacial trauma, and road traffic accident (RTA)-related fractures. It explores modifications in clinical protocols, patient management, infection control measures, and the psychosocial and educational effects on practitioners and trainees. Literature suggests that elective oral surgical procedures were drastically reduced, emergency care was prioritized, and stringent infection-control and triage systems were implemented. The pandemic emphasized teleconsultation, minimally invasive techniques, and personal protective equipment (PPE) use. As normalcy resumed, these adaptations shaped a more resilient and infection-conscious oral surgery practice.

Keywords: COVID-19, Oral surgery, Impaction, Jaw fracture, Maxillofacial trauma, Infection control, Pandemic impact.

1. Introduction

The COVID-19 pandemic, first identified in Wuhan, China in late 2019, led to an unprecedented global health crisis that deeply affected all branches of medicine, including oral and maxillofacial surgery (OMFS). Transmission via respiratory droplets and aerosols placed dental and surgical professionals at particularly high risk. According to the World Health Organization (WHO), by mid-2021, over 170 million cases were recorded globally¹. Oral surgery, being a field involving close patient contact, exposure to saliva and blood, and aerosol-generating procedures (AGPs), was forced to rapidly adapt to minimize infection risks².

This review discusses the impact of COVID-19 on the clinical, operational, and educational aspects of oral surgery, focusing on the management of impaction, jaw fractures, and road traffic accident-related injuries.

2. Disruption of Routine Oral Surgery Services

At the onset of the pandemic, lockdowns, social distancing norms, and fear of infection led to closure or restriction of dental facilities worldwide. Elective and non-urgent oral surgical procedures, including third molar extractions and implant surgeries, were deferred³.

Hospitals and dental colleges redirected resources toward COVID care, resulting in limited operating room access for maxillofacial surgeons. Emergency services were prioritized, mainly for trauma, infections, and oncologic cases⁴. This triaging system, though essential for infection control, led to a backlog of untreated conditions, increased patient anxiety, and progression of pathology in some cases⁵.

3. Changes in Clinical Protocols and Infection Control

The pandemic catalyzed a paradigm shift in infection-control protocols. Clinics were restructured to minimize cross-contamination and ensure safety for both patients and staff. The key measures included:

- Patient Screening: Use of temperature checks, travel history, and COVID-19 questionnaires before appointments⁶.
- Personal Protective Equipment (PPE): N95 masks, face shields, gowns, and disposable caps became mandatory for all aerosol-related procedures⁷.
- Aerosol Control: Use of rubber dams, high-volume evacuators, and pre-procedural mouth rinses with povidone-iodine or hydrogen peroxide were recommended⁸.
- Environmental Disinfection: HEPA filters, UV disinfection units, and proper ventilation were adopted⁹.

The incorporation of these protocols significantly increased operational costs but improved long-term infection control awareness among practitioners.

4. Impact on Impaction Surgeries

Third molar impaction surgery is one of the most frequent elective procedures in oral surgery. During the pandemic, such elective interventions were largely suspended except in cases involving pericoronitis, abscess, or cystic complications¹⁰.

Delays in treatment resulted in recurrent infections, pain, and compromised oral hygiene. Moreover, patients avoided hospital visits due to fear of exposure, leading to self-medication and misuse of antibiotics¹¹.

Post-lockdown recovery saw a surge in demand for impacted tooth removal, forcing clinics to adopt efficient scheduling and pre-operative COVID screening. Minimally invasive flap designs and atraumatic surgical techniques were preferred to reduce aerosol generation¹².

5. Maxillofacial Fractures and Road Traffic Accidents

The pattern and incidence of maxillofacial fractures changed significantly during the pandemic. With lockdown measures in place, the number of road traffic accidents (RTAs) decreased drastically in the early months¹³. However, domestic accidents and interpersonal violence-related injuries saw a relative rise due to prolonged confinement and psychological stress¹⁴.

Emergency management of facial fractures during COVID-19 required balancing the need for timely surgical intervention with infection-control precautions. Surgeons prioritized closed reduction techniques over open approaches to limit aerosol exposure¹⁵. When general anesthesia was necessary, pre-operative RT-PCR testing, negative-pressure operation theatres, and minimal staff presence were recommended¹⁶.

As restrictions eased, the number of RTA cases gradually returned to pre-pandemic levels, emphasizing the need for sustainable infection-control measures in trauma care.

6. Teleconsultation and Remote Management

Telemedicine emerged as a crucial tool during lockdowns. Oral surgeons conducted virtual consultations for triage, postoperative reviews, and minor complaints¹⁷. Patients were advised on analgesic and antibiotic use, and minor infections were managed conservatively when appropriate. Though teleconsultation cannot replace surgical interventions, it proved valuable for reducing hospital visits and maintaining patient-doctor communication. It also facilitated preoperative assessments, counseling, and postoperative follow-ups, improving time efficiency¹⁸.

7. Educational and Training Challenges

Dental education and surgical training were severely disrupted due to closure of academic institutions and clinical departments. Hands-on surgical experience, which is fundamental in OMFS training, was replaced by online lectures, webinars, and virtual simulations¹⁹. While digital education enhanced theoretical learning, the lack of clinical exposure affected confidence and skill development among students and residents²⁰. Institutions gradually implemented hybrid models combining limited clinical sessions with strict infection-control protocols and online learning for didactic content.

8. Psychosocial and Economic Impacts

The psychological toll on oral surgeons and dental healthcare workers was significant. Fear of infection, isolation from families, and reduced patient flow contributed to stress and burnout²¹.

Private practitioners faced financial strain due to reduced income and increased cost of PPE and sanitization materials²². Conversely, the crisis fostered solidarity, teamwork, and professional resilience. Many practitioners adopted flexible schedules and enhanced patient communication to rebuild trust.

9. Research and Technological Adaptation

The pandemic accelerated research in infection control, telehealth, and digital workflows. 3D printing, CAD/CAM surgical guides, and virtual surgical planning were increasingly utilized to minimize contact time and improve precision²³.

Studies also explored antiviral coatings for dental instruments and the use of intraoral suction devices to reduce aerosols²⁴. These innovations continue to influence post-pandemic oral surgery practices, making them safer and more efficient.

10. Post-Pandemic Recovery and Lessons Learned

With global vaccination campaigns and improved understanding of COVID-19 transmission, oral surgery services gradually resumed normal operations. However, the lessons learned—particularly in infection control, patient triage, and digital adaptation—remain integral to modern practice²⁵.

The pandemic underscored the importance of preparedness, mental health support, and multidisciplinary collaboration in healthcare systems. Continuing education on infection control and the use of telemedicine for follow-ups have now become standard components of oral surgical practice.

11. Conclusion

The COVID-19 pandemic reshaped oral and maxillofacial surgery at every level—from clinical workflows to education and research. Elective procedures such as impaction surgeries were postponed, while trauma management adapted to minimize infection risk. Enhanced PPE protocols, teleconsultation, and digital technologies have now become embedded in daily practice. Although the pandemic disrupted conventional oral surgery services, it also provided opportunities for innovation, resilience, and systemic improvement. The integration of safety, flexibility, and technology defines the post-pandemic evolution of oral surgery worldwide.

12. References

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