

## 2. Thwarting form COVID-19: New Impediment Technique

---

*\*Dr. Madhumita Srivastava<sup>1</sup>, Dr. Sanjoy Chowdhury<sup>2</sup>, Dr. Gaurav Vishal<sup>3</sup>*

<sup>1</sup>*Department of Oral and Maxillofacial Surgery, Bokaro General Hospital, Jharkhand, India.*

<sup>2</sup>*Department of Ophthalmology, Chief Ophthalmologist, Director of Medical and Health Services  
Bokaro General Hospital, Jharkhand, India*

<sup>3</sup>*Department of Microbiology, Senior Medical Officer*

*\*email: [dr.madhumitasri.20@gmail.com](mailto:dr.madhumitasri.20@gmail.com)*

### **Abstract**

*The COVID-19 outbreak has led to an number of diagnosed cases and also an number of death throughout the world, but emergencies doesn't come with prior information. We have to practice best regarding intubation and ventilation of such cases in amid of COVID -19. Here we report a case of dentigerous cyst who was also suspect of today's pandemic, was intubated orally with the help of locally inventive transparent chamber to prevent contamination.*

**Key words:** *COVID -19, intubation, contamination, protection, cyst*

### **Introduction**

The challenge which dominates in admonishing patients with the novel corona virus disease (COVID-19) is bilateral pneumonia and acute respiratory distress syndrome. Its human-to-human transmission is established.<sup>[1,2]</sup> Intubation in patients with COVID-19 is critical. In this pandemic it is not possible to investigate immediately each and every patient who attends to emergency department with other co morbid conditions for the same. So in such scenario every patient should be treated as a suspect of COVID-19 if he or she has to be taken up for emergency surgery until proven otherwise.<sup>[3]</sup> Here in we report a case of innovative protective technique to intubate a patient of infective huge dentigerous cyst in relation to left lower third molar, extending towards lateral pharyngeal space.

### **Case Reports**

A 44 year old male reported to emergency department of tertiary care hospital of Jharkhand, with complaint of difficulty in mouth opening and swallowing since three days along with swollen and

painful left half of face since one week. [Figure 1] Patient's vitals were slightly raised. On examination there was gross swelling of left half of face and trismus. Swelling extended from left temporal region superiorly to sub mental region inferiorly. Medially lateral to nasolabial fold to preauricular region laterally. Swelling was soft and fluctuant. He was screened for symptoms of novel corona virus disease and his oropharyngeal sample was sent for investigation. X-ray PA view of face depicted huge cyst in left lower mandible infiltrating ramus half the way superiorly, in relation to 38. [Figure 2] Provisional diagnosis of infected dentigerous cyst was made. Considering patients life threatening condition an immediate incision and drainage along with enucleation of huge cyst under general anesthesia was planned. Though patient reports were awaited, he was treat as COVID-19 positive. He was intubated via a very innovative protective technique as personal protection is the priority. So to avoid self-contamination a transparent plastic box with metallic frame was used as a barrier between anaesthetist and patient as shown in Figure [3]. Box head end had two holes for anaesthetist hands to insert in the operating area. A blind nasal intubation was done following premedication, which was again a big challenge as patients oropharyngeal area was compromised due to swelling of left lateral pharyngeal space. Above all odds patient was intubated successfully via right side. Post intubation box was removed. Cyst was intraorally enucleated along with extraction of 37 and 38. To avoid aerosol generation chisel and mallet was used for removal of bone instead of micro motor and bur. Considering the compromised airway status patient was not extubated for next 24 hours, and was kept on supportive treatment. Next day we received patient report which showed negative for COVID-19. Following this patient was successfully extubated maintaining oxygen saturation of 98% and patient was discharged after two days.

## Discussion

Prominent complication of advanced COVID-19 is typified by acute hypoxemic respiratory insufficiency demanding oxygen and ventilation remedies. [4] Although elective surgeries are rescind worldwide due to this pandemic, but emergent surgeries are acceptable amid this outbreak. As of February 29, 2020, a total of 105 emergent surgical procedures, were performed in patients with confirmed or suspected COVID-19 in Tongji Hospital in Wuhan (data from Dr. Wan). Some of these procedures were performed under general anesthesia with endotracheal intubation. [5]

It is very well known that anesthetist play an integral act in equipping in-hospital intubation, but periodically they do not deal with patients with such highly endemic disease. The safety of the patient

and the health workers who are tangled in the intubation requires special attention and insurance. [6] Recently 138 confirmed COVID-19 cases were reported among which, 41.3% were acquired infection from the hospital, and more than 70% of these cases were healthcare providers. [7] Considering the pandemic any cases taken up for surgery without testing for COVID-19, they should be treated as suspected COVID cases. As we all are cognizant that aerolization and droplet transmission of the COVIS -19 viruses are critical hazards in the habitat of operating theatres, notably with transactions such as endotracheal intubation, tracheotomy etc. [8, 9] To curtail the contact contemporary ideas are invariably welcomed and when it comes to treat masses, it should be evoked that such ideas should be cost effective also. This single transparent chamber used in our present case can be safely used in other patients after proper sterilization. Also it is easy to use and remove from the operating field and it also furnishes anesthetists a handful working area to execute direct intubation. Surgeons and personnel not need for intubation should prevail outside the OT until anesthesia induction, intubation & extubation is borne out. [10]

### Conclusion

In the event of a difficult intubation, additional personnel and tools may not be immediately available; hence a backup plan needs to be established. A high level of vigilance is necessary to prevent contacting the infection when intubation is performed. Ingenious methods are the pathway to deal such deadlock empyrean; COVID -19.

### References

- 1) Yang, X, Yu, Y, Xu, J, Shu, H, Xia, J, Liu, H, Wu, Y, Zhang, L, Yu, Z, Fang, M, Yu, T, Wang, Y, Pan, S, Zou, X, Yuan, S, Shang, Y. *Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: A single-centered, retrospective, observational study. [Epub ahead of print]. Lancet Respir Med. 2020. DOI: 10.1016/S2213-2600(20)30079-5.*
- 2) Gates, B. *Responding to COVID-19—A once-in-a-century pandemic? N Engl J Med. 2020. [Epub ahead of print]. DOI: 10.1056/NEJMp2003762.*
- 3) *A practical Manual COVID-19 and dental practice. Department of Oral & Maxillofacial Surgery, GDC, Nagpur.*

- 4) Huang, C, Wang, Y, Li, X, Ren, L, Zhao, J, Hu, Y, Zhang, L, Fan, G, Xu, J, Gu, X, Cheng, Z, Yu, T, Xia, J, Wei, Y, Wu, W, Xie, X, Yin, W, Li, H, Liu, M, Xiao, Y, Gao, H, Guo, L, Xie, J, Wang, G, Jiang, R, Gao, Z, Jin, Q, Wang, J, Cao, B . *Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China*. Lancet. 2020; 395:497–506.
- 5) *Intubation and Ventilation amid the COVID-19 Outbreak: Wuhan's Experience*. Lingzhong Meng, M.D.; Haibo Qiu, M.D.; Li Wan, M.D.; Yuhang Ai, M.D.; Zhanggang Xue, M.D.; et al. *Anesthesiology* 6 2020, Vol.132, 1317-1332. doi:<https://doi.org/10.1097/ALN.0000000000003296>.
- 6) Zuo, MZ, Huang, YG, Ma, WH, Xue, ZG, Zhang, JQ, Gong, YH, Che, L; Chinese Society of Anesthesiology Task Force on Airway Management. *Expert recommendations for tracheal intubation in critically ill patients with novel coronavirus disease 2019*. [Epub ahead of print]. Chin Med Sci J. 2020. DOI: 10.24920/003724.
- 7) *Real time dynamics of the COVID-19 in China, National Health Commission of the People's Republic of China* 2020.
- 8) Wu, Z, McGoogan, JM. *Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: Summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention*. JAMA. 2020. [Epub ahead of print]. DOI: 10.1001/jama.2020.2648.
- 9) Xie, J, Tong, Z, Guan, X, Du, B, Qiu, H, Slutsky, AS. *Critical care crisis and some recommendations during the COVID-19 epidemic in China*. Intensive Care Medicine. 2020. [Epub ahead of print]. DOI: 10.1007/s00134-020-05979-7.
- 10) *WHO guidelines on COVID-19 : Considerations for optimum surgeon protection before during and after operation*.

## Figures



Figure 1: Patient clinical presentation at time of reporting to emergency department



Figure 2: X-ray PA view of face depicted huge cyst in left lower mandible infiltrating ramus half the way superiorly.



Figure 3: transparent plastic box with metallic frame was used as a barrier between anaesthetist and patient