



Minimizing contagion risks of COVID-19 during Trans Oral Robotic Surgery

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ABSTRACT

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In this communication we would like to share our experience in managing TORS patients during COVID-19 pandemia

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RAPID COMMUNICATION

A general consensus exists on high risks of contagion by SARS-CoV-2 during otolaryngology procedures that may determine an aerosolisation with nosocomial amplification of infection¹⁻³.

Even asymptomatic carriers contribute have a potential role in spreading the disease². For those reasons, the use of particular Personal Protective Equipment(PPE) is mandatory to protect health-workers, especially otolaryngologists¹.

Taking a look at current Italian situation, elective hospital activities have been remodulated and reduced as much as possibile to essential emergency and oncologic procedures, according to worldwide experiences. The Italian Society of Otolaryngology (SIO) recently developed a couple of recommendations to address the routine and emergent activities during COVID-19 pandemia⁴.

Albeit those recommendations also reflect how much is being implemented in the world, many logistical and technical problems still exist in supplying hospitals with suitable materials and performing active infection surveillance by RT-PCR test.

In particular, testing eligible patients for surgery is still inconsistent haphazard in Italy.

In this situation, our departmental policies are to consider all of patients as infected. So in- and out-patient activity is modulated to minimally reduce contagion risks.

Regarding the surgery, we deferred all elective procedures limiting the number of operations only for oncological cases, similarly to others protocol^{1,5,6}. A part of our cancer surgery consists in Trans Oral Robotic Surgery(TORS) of oropharyngeal carcinoma. TORS may be considered high impact

procedure on aerosolization similar to any other trans oral surgery in accordance with the statement of the Confederation of European Otorhinolaryngology – Head & Neck Surgery⁵.

Although high-risk operations in patients with known or suspected COVID-19 should be performed in a designated operating room with negative pressure, this issue cannot be done in our hospital due to technical problems. A naso-tracheal intubation is preferred^{7,8}, although nasopharynx and nasal cavity are known to harbor significant viral loads^{9,10}. For those reasons, eligible patient for TORS is prepared and intubated in another room side to operating room. Here anesthesia team may freely work with adequate PPE and all necessary instrumentations. Before translating patient to the operating room, nose and mouth were wrapped with transparent plastic dressing. A soaked gauzed with Povidone-Iodine solution might be positioned in the mouth¹¹. Surgeons and staff nurses are scrubbed wearing suitable PPE. The operation starts usually with neck dissection. This policy may allow the possibility of ligating lingual and/or the carotid arteries with consequent reduction of the post-operative bleeding risks, the needing for tracheotomy, reducing the trans oral resection time due to bloodless field without the significant risk of fistula formation^{7,12}. Moreover, this strategy avoid a second hospital admission that could be an additional risk of contagion and inadmissible for the shortage of hospital beds. Once neck dissection is over, the patient is positioned in sniffing position and wrapped with surgical drapes. Before starting the exposure, a sterile transparent plastic bag is positioned with one inner part behind the patient's head. Then transparent plastic dressing will be removed. According with our experience^{7,8}, we strongly suggest the use of Davis-Meyer mouth gag with aspirating blade especially during COVID-19 pandemic. The aspirating blade permits to reduce aerosolization towards assistant surgeon's face generated by monopolar robotic cautery. Once a fine exposure is achieved, the remain part of the transparent plastic bags unrolled to cover the whole face including the mouth gag. The one hole in the central part of the mouth and

other hole side to the each labial commissure are made with scissors in order to introduce the scope (central hole) and robotic arms with instruments (labial commissure holes). Extra two holes, one per side, can be made side and laterally to the inferior teeth in order to insert Lawton suction devices.

These instruments are useful to help the robotic resection and also to give an extra aspiration of the aerosol. In case of bleeding control with Microfrance Dessy bipolar forceps an extra hole laterally to the superior teeth can be made. Once the trans oral resection is over, the specimen can be retrieve from the mouth making a linear cut on the plastic bag. Then robotic arms and scope can be removed and a wide transparent plastic dressing is applied to cover all holes waiting the frozen sections as needed. In case of a remargination holes can be made once again in the same fashion as previous described. In our brief experience, no any breakages or weakening of plastic bag was registered. Similarly El-Sayed¹³ proposed an innovative system. However, this smart system appears to difficult especially in countries where the supply of devices is limited.

In a scenario where the scarcity of PPE, appropriate preoperative testings, and the cumbersome italian procedures for the acquisition of such devices, our tricks represent inevitably the minimum set for reducing aerosolization during TORS.

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