



MANAGEMENT OF SUBMENTAL ABSCESS IN PREGNANT WOMAN WITH COVID-19: CASE REPORT

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INTRODUCTION

Pregnancy is associated with many physiological and hormonal changes, altered immunological activity aggravating response to dental infection resulting in serious life threatening condition. Delay or avoidance by either the patient or clinician may result in severe spreading odontogenic infection.^{1,2} This might be worsen by the coronavirus disease 2019 (Covid-19) pandemic therefore the management of odontogenic infection must be based on medical protocols during the Covid-19 pandemic.³ The purpose of this case report is to discuss the management of a submental abscess in a pregnant patient with Covid-19

CASE REPORT

Case

A 30 years old pregnant woman with 28 weeks of gestation presenting with a complaint of swelling on the chin area. About 2 months prior to admission, the patient complained of toothache at right lower tooth but she didn't seek any treatment. About 1 month before admission, the swelling occurred at chin region, then 1 week prior to admission the swelling got bigger and the patient complained her condition didn't get better, later she was referred to Hasan Sadikin Hospital Emergency Department for further treatment.

- Physical condition : blood pressure, heart rate, respiration rate were normal, with 98% of oxygen saturation, febrile temperature.

- Extra oral : swelling chin region, reddish, localized, fluctuation, pain on palpation (Figure 1).



Figure 1. Extra oral examination (Pre OP)

- Intra oral examination, poor oral hygiene, limited mouth opening around 15 mm (Figure 2)
- Covid-19 screening : confirmed positive Covid-19 by Rapid and PCR swab test.
- Blood examination : slightly anemia, and increased of SGOT SGPT followed up by consultation to internal medicine and obstetric gynecologist.

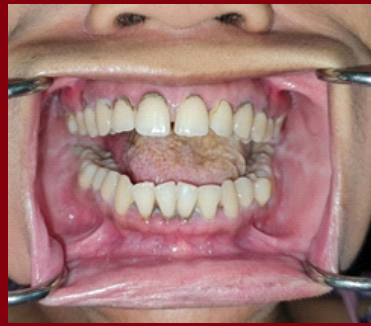


Figure 2. Intra oral examination (Pre OP)

Diagnosis

- Submental abscess due to pulp gangrene of tooth 48
- Transaminitis due to medication
- Anemia of inflammation
- Malnutrition
- Covid-19

Treatment

- Broad-spectrum antimicrobial therapy
- Drainage insicion
- Extraction of tooth 48
- Comprehensive treatment for systemic condition

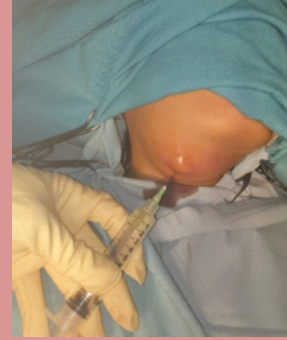


Figure 3. Pus aspiration



Figure 4. After a sharp incision followed by blunt dissection and penrose drain placement

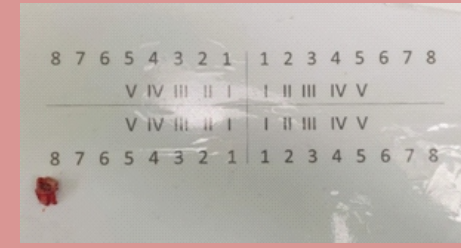


Figure 5. Extraction of tooth 48

- Post operative day III : the swelling had reduced and mouth opening was increased (Figure 6),
- Post operative day VII : 2nd PCR swab test with negative result and the patient was approved to be discharged with stable vital signs.
- One month follow up (Figure 7),



Figure 6. Post operative day III

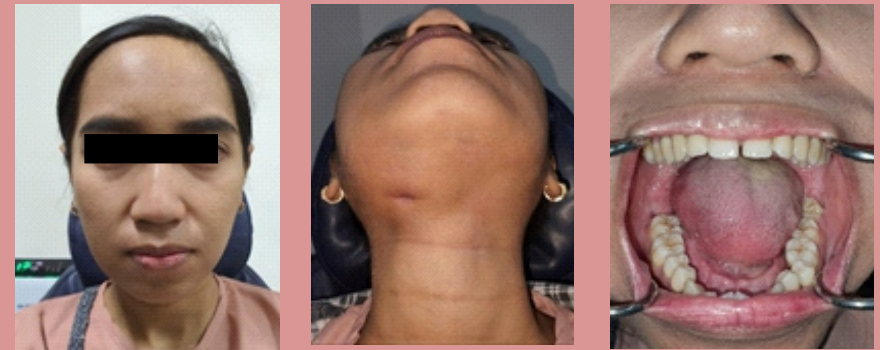


Figure 7. Post operative 1 month

DISCUSSION

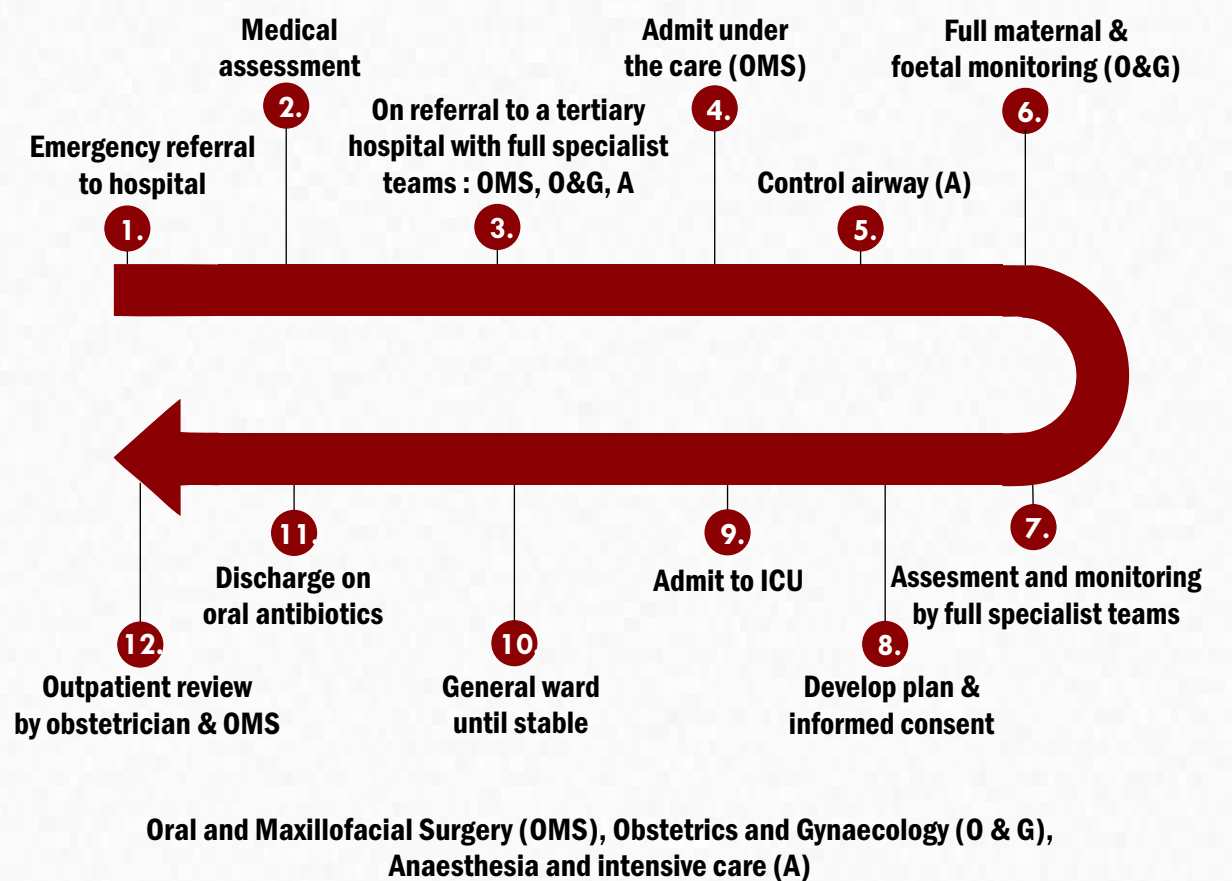
Pregnancy is associated with many changes to haemodynamics and the immune system, as well as intraoral changes. The maternal immune system is well-prepared to defend the invasion of foreign pathogens. In relation to Covid-19, innate immune cells, such as NK cells and monocytes, respond more strongly to viral challenges, while some adaptive immune responses are down-regulated during pregnancy (decreased numbers of T and B cells), besides during pregnancy the upper respiratory tract tends to be swollen by a high level of estrogen and progesterone, and restricted lung expansion makes the pregnant woman susceptible to respiratory pathogens.⁴

These factors may increase the patient's risk of developing odontogenic infections where some of the changes relevant to patients with odontogenic infections are increased cardiac output, decreased blood pressure, increased gastric reflux, relevant anemia and leucopenia, shift of leucocytes (Increased monocytes and regulatory T cells, Decreased CD4+ and CD8+ T cells, B cells), and hypercoagulable state. As we see in this patient anemia might be arising due to increased of plasma volume and complicated with severe infection. On the other side, transaminitis on this patient was associated with prolonged medication without adequate planning and dosage therapy from the previous treatment.²

The definitive management of odontogenic abscess is surgical exploration and drainage in need of decompression. In the setting of pregnancy this does not change, and early and aggressive surgical management is likely to be less harmful than prolonged antibiotics, which is commonly associated with progression of disease to sepsis and multi-organ dysfunction syndrome, compromising both the patient and the baby. In basic, there is no absolute contraindication in pregnant woman, as in abscess patient surgery intervention is necessary to prevent further infection, however, there are particular consideration needed related to management and drug options.⁵

All known or suspected COVID-19-positive patients requiring surgical intervention must be treated as positive until proven otherwise in order to minimize infection spread. All staff must be specifically trained to don, doff, and dispose of personal protection equipment (PPE). Careful planning and segregation of infected patients may help minimize staff shortages related to uncontrolled viral spread.³

Chart 1. Protocol for Management of Pregnant Patients with Severe Odontogenic Infections²



CONCLUSION



The combination of altered hormonal and immune function in pregnancy lead to exceedingly high risk of developing severe odontogenic infections. These infections can be life-threatening for both the mother and her baby. Submental abscess management requires adequate measurement according to clinical guidelines for the management of odontogenic infections by a multidisciplinary team to prevent the spread of infection by considering the systemic conditions and medical procedures for patients with Covid-19.

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