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Case Report

Management of Ludwigs Angina: What We Do!

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Abstract

Ludwig Angina is a life-threatening condition often encountered by the medical and dental practitioner. It is a form of severe diffuse cellulitis having an acute onset that spreads, bi-laterally involving the submandibular, sublingual and submental spaces. This is a state of emergency. Early diagnosis and preparing a treatment plan for its management are important factors and can be life- saving. Late stages are to be addressed immediately and importance given to the maintenance of airway which is to be followed by surgical decompression and antibiotic coverage. With the use of parenteral antibiotics, airway maintenance techniques, and surgical drainage of the space infection is the standard protocol of treatment in the cases of Ludwig's angina.

Keywords: *Ludwig's Angina; Odontogenic Infection; Management; Surgical Decompression; Tracheostomy*

Introduction

Ludwig's angina as a disease was described by Karl Friedrich Wilhelm von Ludwig in 1836, he described it as an edema of the soft tissues and gangrenous cellulitis of the neck and the floor of the mouth [1]. Ludwig's angina is known by many alternative names, like cynanche, car-buculus gangraenosus, angina maligna, morbus strangularis, and garotillo [2]. Even though the term "angina" is associated with pain of cardiac origin, it is derived from the Latin word for choke (angere) and the Greek word for strangle (ankhone) [3]. In the case of Ludwig's angina, it refers to the feeling of strangling and choking secondary to lingual airway obstruction [3].

It is a fatal condition. It causes swelling of the soft tissues as well as elevation and posterior displacement of the tongue, which leads to airway obstruction that is a life-threatening complication in Ludwig's Angina.

Prior to the development of antibiotics, mortality for Ludwig's angina exceeded 50% [1]. Due to recent developments in the antibiotics the mortality rate has drastically reduced. Odontogenic infections are the most common cause of Ludwig's angina. Peritonsillar abscesses, parapharyngeal abscesses, mandibular fracture, oral lacerations or submandibular sialadenitis are few other causes.

In Ludwig's angina, the primary site of infection is the submandibular space. The sub-mandibular space is subdivided superiorly by the mylohyoid muscle into the sublingual space and inferiorly by the submaxillary space. Once an infection is present because of the communicating spaces it spreads freely through the tissue planes. Thus, the bilateral nature of Ludwig's Angina. Infection can also spread to pharyngomaxillary and retropharyngeal spaces [2].

Case Report

The early recognition of this disease is important. The most common complaints are Painful neck swelling, tooth pain, dysphagia, dyspnoea, fever, and malaise. swelling over the neck and an elevated or protruding tongue are seen. Stridor, trismus, cyanosis, and tongue

dis-placement suggestive of an airway difficulty. Edema and induration of the anterior neck, with cellulitis can be seen in advanced cases. Early signs and symptoms of obstruction may be subtle. Confusion or other mental changes may occur because of prolonged hypoxia. Ear ache (otalgia), difficulty in swallowing (dysphagia), difficulty in speaking (dysphonia), and dysarthria are also seen.

Figure 1: *Clinical picture showing Ludwig's angina.*

Early diagnosis is an important key for saving the patient from this life threatening condition. Management includes securing airway, early and aggressive surgical intervention and proper antibiotic therapy.

Management of Ludwig's Angina: Our Protocol

The patient usually presents to the OPD with chief complaint of swelling in the submental and bilateral submandibular region of the jaw and difficulty in breathing, phonation, swallowing.

1. Immediate Hospitalization of the patient.
2. Careful assessment and history taking.
3. Diagnosis of the condition.
4. Intraoral examination for etiologic factor and assessment of the floor of the mouth.
5. Securing of Intravenous Cannula for fluid administration.
6. Immediate administration of Inj. Hydrocort IV as it helps to reduce the laryngeal edema and reduces respiratory distress.
7. Patient to be kept in propped up position.
8. Oxygen by mask or nasal cannula administered continuously.
9. Administration of IV fluids, physiologic solution Ringer's Lactate (RL) or Dextrose Normal Saline (DNS).
10. IV antibiotics started immediately.
11. Chest X-Ray adviced to check for involvement of additional deep neck spaces.
12. Blood withdrawal for routine investigations.
13. Emergency Surgery scheduled for incision and drainage either in LA/ GA.
14. Airway secured. (if required tracheostomy is to be performed).

15. Local infiltration given in the area of incision.
16. Small Incisions given in the submental and bilateral submandibular areas (Figure 2).
17. Mosquito or sinus forceps used to explore the spaces until the accumulated pus from the space starts to drain.
18. Pus collected with a sterile swab and sent for culture sensitivity.
19. Etiologic factor (offending tooth) removed.
20. Betadine and H2O2 (hydrogen peroxide) irrigation is done.
21. After thorough exploration of the spaces a corrugated rubber drain (CRD) placed in the incision line to allow drainage of pus and secured with suture.
22. IV antibiotic therapy given for 5 days.
23. Aggressive exploration of the involved spaces in post-operative period.
24. CRD changed after every 24 hours.
25. Patient asked to maintain proper oral hygiene.
26. Once the pus discharge is considerably reduced and patient if fit, patient is discharged.
27. Regular follow up adviced.

Figure 2: *Incisions for draining*

Discussion

As mentioned above, Ludwig's Angina is a life-threatening condition frequently en-countered by dental practitioners and clinicians. It is a form of severe diffuse cellulitis having an acute onset that spreads, bilaterally involving the submandibular, sublingual and submental spaces. This is a state of emergency. Early diagnosis and preparing a treatment plan for its management are important factors and can be life- saving. Late stages are to be addressed immediately and importance given to the maintenance of airway which is to be followed by surgical decom-pression and antibiotic coverage. With the use of parenteral antibiotics, airway maintenance techniques and surgical drainage of the space infection is the standard protocol of treatment in the cases of Ludwig's angina. The clinician should be aware of the presentation of Ludwig's angina because prompt diagnosis and institution of antibiotic therapy and possible surgical management are essential to prevent the severe morbidity that can be associated with the condition [5,6].

Conclusion

Ludwig's Angina is a life threatening condition frequently encountered by dental professionals. It is of utmost importance to know the importance of maintenance of airway, adequate hydration and prompt incision and drainage of such patients. Early diagnosis and planning are necessary and if necessary the patient should be referred to an Oral and Maxillofacial surgeon for further management.

Bibliography

1. Saifeldeen K and Evans R. "Ludwig's angina". *Emergency Medicine Journal* 21.2 (2004): 242-243.
2. Nicholas Costain., *et al*. "Ludwig's Angina". The American Journal of Medicine 124.2 (2011): 115-117.
3. Patterson HC., *et al*. "Ludwig's angina: an update". *Laryngoscope* 92.4 (1982): 370-378.
4. Spitalnic SJ and Sucov A. "Ludwig's angina: Case report and review". *Journal of Emergency Medicine* 13.4 (1995): 499-503.
5. Fischmann GE and Graham BS. "Ludwig's angina resulting from the infection of an oral malignancy". *Journal of Oral and Maxillofacial Surgery* 43.10 (1985): 795-796.
6. Owens BM and Schuman NJ. "Ludwig's angina". *General Dentistry* 42 (1994): 84-87.

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