

AWARENESS OF LUDWIG'S ANGINA AMONG DENTAL PRACTITIONERS

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Abstract

Ludwigs angina is a life-threatening cellulitis. It is primarily seen involving the submandibular space followed by secondary involvement of the submental space. This disease has an aggressive characteristic and spreads rapidly causing a compromised airway with little warning. The aim of the study is to determine the level of knowledge and awareness of dental practitioners regarding ludwig's angina and its management techniques. A total of 10 multiple choice questions were formed and distributed to 100 dental practitioners with more than 5 years of experience. All 10 questions assessed the knowledge of dental practitioners regarding the Ludwig's angina and awareness of the various management techniques. After all the participants have given their response, their responses were noted and tabulated. All the respondents were aware of cause and causative factors of ludwigs angina. 78% said it is a cellulitis. Broad spectrum antibiotics are the choice in 78% of the respondents. 80% are aware this condition involve multiple space infections and 64% said they can diagnose this condition based on clinical features. The awareness of management techniques of ludwigs angina among were high among the dental practitioners. The importance regarding knowledge of various disease which mainly affects the head and neck region is crucial for dental practitioners. Thus it is essential for the dental practitioners to have knowledge of the conditions and be aware of the managements of these conditions

Keywords: Awareness, ludwigs angina, dental ,infection

Introduction

Ludwigs angina is a life-threatening cellulitis. It is primarily seen involving the submandibular space followed by secondary involvement of the submental space. This disease has an aggressive characteristic and spreads rapidly causing a compromised airway with little warning. (Kurien et al., 1997; Pandey et al., 2017) it is seen mostly in young adults due to dental infections however it may develop among children. (Pandey et al., 2017) This was first described by Wilhem Frederick Von Ludwig in 5 patients in .As we know the submandibular space is divided into the submaxillary and sublingual spaces with the mylohyoid muscles between the two. In

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some patients it is secondary to abscess of a posterior molar. The infection will penetrate through the inner table of the mandible to the submaxillary space, around the mylohyoid to the sublingual space. Spread of infection is contained anteriorly by the mandible and inferiorly by the mylohyoid (Candamourty et al., 2012; Robbins & Thomas Robbins, 1992)

Ludwig's angina is a potentially lethal infection with a mortality of 8% (Candamourty et al., 2012; Pak et al., 2017) This evolves from odontogenic infections, a penetrating injury in the floor of the mouth, osteomyelitis or fracture of the jaw, otitis media, tongue piercing, sialadenitis or sialolithiasis of the submandibular gland There are various predisposing factors to this disease which includes dental caries, systemic illnesses such as diabetes mellitus, malnutrition, alcoholism and compromised immune system (Balasubramanian et al., 2014; Moreland, 1988). Ludwig's angina in children can occur de novo without any apparent precipitating cause

Early diagnosis and immediate initiation of the appropriate treatment must be done for this condition. Treatments incision and drainage of exudates from the associated space bilaterally, extraction of offending tooth/teeth, aggressive antibiotics (penicillin and metronidazole) and fluid therapy. These are important in the management of this odontogenic infection. Airway management is the first step into managing ludwig's angina as airway compromise can lead to death of the patient. Intravenous steroids and nebulized adrenaline use have been shown to allow for easier intubation avoiding tracheostomy or cricothyroidotomy. It allows for increased penetration of antibiotics into the fascial space by reducing oedema and cellulitis. (Har-El et al., 1994) Surgery is indicated for patients who develop abscesses and are unresponsive to antibiotics and medical management which is achieved by decompression of the submental, submandibular and sublingual spaces by external incision and drainage

Thus , the aim of this study, is to determine the level of knowledge and awareness of dental practitioners regarding ludwig's angina and its management techniques

Materials and Method

A total of 10 multiple choice questions were formed and distributed to 100 dental practitioners with more than 5 years of experience. All 10 questions assessed the knowledge of dental practitioners regarding the Ludwig's angina and awareness of the various management techniques. Table 1 shows the questionnaire which was distributed to the dental practitioners

Table 1: Questionnaire

Question	A	B	C	D
1. First person to describe Ludwigs Angina?	Wilhelm Friedrich Von Ludwig	Robert Hooke	Hippocrates	
2. Cause of Ludwigs angina ?	Bacterial	Viral	Fungal	
3. Causative organism ?	Streptococcus	Enterovirus	Herpes virus	
4. Also commonly known as ?	Pterygoid space infection	Submandibular space infection	Massetric space infection	
5. Progressive cellulitis or an Abscess?	Cellulitis	Abscess		
6. Ludwigs angina is due to ?	Dental infection	Immunocompromised patients	Hypersensitivity	
7. Initial line of treatment ?	Incision and drainage	Broad-spectrum antibiotic	Tracheostomy	
8. Preferred antibiotic prescribed?	Penicillin	Cephalosporin	Metronidazole	
9. Spaces involves?	Submandibular	Submental	Sublingual	All three
10. How will you diagnose a patient with Ludwigs Angina ?	Clinical presentation	Dental X Rays	Patient history	

Results

After all the participants have given their response, their responses were noted and tabulated. Table 2 shows the responses to the questions.

Table 2 : Knowledge and Awareness of Ludwigs Angina among Dental Practitioners

Question	A	B	C	D
1. First person to describe Ludwigs Angina?	97	0	3	
2. Cause of Ludwigs angina ?	100	0	0	
3. Causative organism ?	100	0	0	
4. Also commonly known as ?	3	96	1	
5. Progressive cellulitis or an Abscess?	78	22		
6. Ludwigs angina is due to ?	87	10	3	
7. Initial line of treatment ?	10	78	12	
8. Preferred antibiotic prescribed?	88	0	12	
9. Spaces involves?	12	3	5	80
10. How will you diagnose a patient with Ludwigs Angina ?	64	36	0	

All the respondents were aware of cause and causative factors of ludwigs angina.78% said it is a cellulitis.Broad spectrum antibiotics are the choice in 78% of th respondents.80% are aware this condition involve multiple space infections and 64%said they can diagnose this condition based on clinical features.[Table 2]

Discussion

97% of the participants are aware of the man who first describes Ludwig’s angina. This shows that majority of the students were aware of the term Ludwig’s angina and the awareness regarding the term Ludwig’s angina is relatively good. However there has been a study conducted among dental students which showed that only 53.5% of the students were aware that Wilhelm Friedrich Von Ludwig was the main to first describe this condition. Our study showed that 100% of the participants are aware of the causative organism and the main causes of this condition. We can deduce that the importance regarding the knowledge of the causative organism is to differentiate it from other conditions.

This study also shows that 96% of the participants were aware of the other of this condition which is submandibular space infection. The name given is mainly due to the path of spread of infection as it involves the submandibular space.(Chow, 1992) As stated Ludwig’s angina is bilateral and can spread rapidly, secondary to

being compartmentalized within the submandibular space (Endicott et al., 1982; Reynolds & Chow, 2007). There is another term used to describe Ludwig's angina which is 'bull's neck'. This name was used to describe this condition due to its path of spread of infection. As we know Ludwig's angina spreads via the fascial spaces which are submandibular, submental and sublingual spaces, 80% of the participants have selected all three spaces to be involved in this disease. The participants are aware that this condition involved all three spaces.

The most common confusion regarding this condition is whether to call it cellulitis or abscess, and it is evident that certain participants were still unaware. Only 78% of the participants have selected that Ludwig's angina is a type of cellulitis. There are many literatures available which mentions that Ludwig's angina is a life threatening cellulitis.

Knowledge regarding the causative organisms and the spread of this disease will aid in the treatment/management of this disease. (Srirompotong, & Art-smart . 2003) About 78% of the participants have chosen broad-spectrum antibiotics as the initial line of treatment. Thus about 88% of the participants are aware that penicillin belongs to the broad-spectrum antibiotic class. As we know that the cause of this disease is due to a bacterial infection, thus antibiotics are the best option to be prescribed.

Conclusion

The awareness of management techniques of Ludwig's angina were high among the dental practitioners. The importance regarding knowledge of various disease which mainly affects the head and neck region is crucial for dental practitioners. Thus it is essential for the dental practitioners to have knowledge of the conditions and be aware of the managements of these conditions

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Conflict of Interest :

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