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Editorial

Neglected infected carious tooth: A life threatening condition

Zahoor A. Rana[1], Ali Iftikhar[2]

[1]Chairman Department of Oral & Maxillofacial Surgery, Pakistan Institute of Medical Sciences, Islamabad
[2]Post Graduate Resident, Oral & Maxillofacial Surgery, Pakistan Institute of Medical Sciences, Islamabad

Address of Correspondent
Prof. Zahoor A. Rana
Chairman Department of Oral & Maxillofacial Surgery, Pakistan Institute of Medical Sciences, Islamabad
rajput8@hotmail.com

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"Dentistry is not expensive but neglect is", a common statement found in literature. Majority of people even educated class is unaware that an infected carious tooth can lead to death of a patient. Managing the terminal stage of infected / carious tooth is a routine part of Maxillofacial Surgery Department in tertiary care hospital like PIMS. People from all walks of life, present to OMFS department, after ignoring multiple episodes of pain and swelling in a specific location of oral cavity, some of them are unaware about their compromised immune status like diabetes, which further aggravates the severity of condition.

Maxillofacial region has multiple compartments which are actually fascia lined spaces filled with loose areolar tissue, capable of spreading infection in these planes sequel to a carious tooth. The indigenous bacteria that normally live in or on the host gain access to deeper tissues and spread to path of least resistant initiating in periapical region.[1]

Most of microorganisms associated with odontogenic infections are Gram Negative rods and Gram Positive Cocci. 25% are aerobic and 75% are anaerobic among Gram-Positive streptococci. Infection caused by only aerobic bacteria probably account for 5%, only anaerobic bacteria make up about 35% and both aerobic and anaerobic bacteria comprise about 60% in all odontogenic infections.[5] The most commonly isolated bacteria are Staphylococcus aureus, Klebsiella, E. coli and Peptostreptococcus. Early infection is initiated by highly virulent aerobic streptococci which causes cellulitis followed by mixed aerobic and anaerobic in nature and as infection becomes chronic anaerobic bacteria predominate.[2] Cellulitis is a warm, diffuse, erythematous, indurated and painful swelling in an infected area, and if in lower jaw bilateral involvement of submandibular, sublingual and submental primary and deeper secondary spaces especially parapharyngeal spaces occurs they can causes difficulty in breathing, which may develop a lethal condition called Ludwig's Angina[6] and if the primary and secondary spaces of upper jaw are involved the infection can travel cranially and develops another lethal and serious life threating condition known as cavernous sinus thrombosis, Beside these serious conditions patient may present with bacteremia, septicemia, fatigue, dehydration, trismus, dysphagia, odynophagia, and drooling.

Virulence of the organism, position of muscle attachment in relation to root tip, status of patient's immune response and thickness of bone adjacent to offending tooth or teeth may influence spread of infection from primary facial spaces to secondary facial spaces thus increasing morbidity and mortality from cavernous sinus thrombosis and Ludwig's Angina which lead spreading infection to mediastinum from space between alar fascia and prevertebral fascia.[3]

Timing is another most important factor in the management of odontogenic infection to prevent the subsequent airway complication that can lead to death of the patient.

Clinician should be well aware of the severity score of condition developed by Peterson[1] and should always be alert to the potential complication of the infection. Rapid deterioration of the patient with odontogenic infection can be an easy occurrence especially in immune-compromised patients. Severity score of the fascial space infections is important to know the risk of airway involvement by the infection.

Severity score 1: Include fascial spaces with low risk to airway or vital structures like vestibular, subperiosteal, infraorbital, and buccal spaces.

Severity score 2: Include fascial spaces with moderate risk to airway or vital structures like submandibular, submental, sublingual, pterygomandibular, submasseteric, superficial and deep temporal spaces.

Severity score 3: Include fascial spaces with high risk to airway or vital structures like lateral pharyngeal, retropharyngeal, and pretracheal spaces.

Severity score 4: Include fascial spaces with extreme risk to airway or vital structures like danger space (space 4), mediastinum, and intracranial infection.

In general, strict oral hygiene measures, regularly visiting qualified dentist, early Restoration/ Extraction of offending tooth should be advocated. Ruling out and starting treatment of underlying systemic conditions using appropriate antibiotics[4] by treating dentist and physician should be carried out as early as possible, and referral to Oral & Maxillofacial Surgeon if condition is worsening. It is pertinent to emphasize that a patient with facial space infection should be dealt with aggressive approach and following steps should be taken immediately to save the life of the patient

1. Hospitalization, detailed history, clinical examination, Laboratory and radiological work up[5]
2. Securing airway (Tracheostomy if needed)
3. Incision and Drainage followed by placement of drain and culture sensitivity of pus sample
4. Extraction / emergency endodontic treatment of offending tooth
5. Ruling out any underlying systemic diseases
6. Appropriate medical assistance, if needed
7. Appropriate Antibiotics, analgesics and I.V. fluids administration to meet the nutritional requirement of the patient.

Failure in early diagnosis of fascial space infection especially in immunocompromised patients is a dilemma in countries like Pakistan. Mostly general dental and medical practitioners under estimate the severity of condition, thus increasing morbidity and mortality Another important factor worsening the condition is poor compliance of the patients. Therefore, continuing medical training/education of general dental and medical practitioners and creating awareness among the general population can help preventing such complications. Public awareness campaigns on national level should be launched in print and electronic media regarding oral health and effects of immunocompromised status on it.

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