KLEBSIELLA PNEUMONIA INFECTION PRESENTED BY NECK MASS AND DEEP NECK ABSCESSE, CASE REPORT


1Consultant Otolaryngology, Department of ENT in King Fahad General Hospital, Saudi Arabia, Jeddah.
2MBBS, Umm Alqura'a University, Saudi Arabia, Makkah.
3Consultant Otolaryngology, Department of ENT in King Fahad General Hospital, Saudi Arabia, Jeddah.
4MBBS, Umm Alqura'a University, Saudi Arabia, Makkah.
5ENT Resident, Department of ENT in King Fahad General Hospital, Saudi Arabia, Jeddah.
6MBBS, King Abdulaziz University, Saudi Arabia, Jeddah.
7MBBS, King Abdulaziz University, Saudi Arabia, Jeddah.
8MBBS, King Abdulaziz University, Saudi Arabia, Jeddah.
9MBBS, Umm Alqura'a University, Saudi Arabia, Makkah.
10ENT Resident, Department of ENT in King Fahad General Hospital, Saudi Arabia, Jeddah.
11ENT Resident, Department of ENT in King Fahad General Hospital, Saudi Arabia, Jeddah.
12MBBS, Umm Alqura'a University, Saudi Arabia, Makkah.

ABSTRACT
Neck abscess and deep neck infections(DNI) are considered as a serious disease. The neck abscess is known as a collection of pus in facial planes and spaces of the head and neck. DNI is classified according to the anatomical location of the infection. These are paraphryngeal, retropharyngeal and peritonsillar. Here we reported a 24 years old Saudi male known case of DM HTN and Sickle cell disease. Admitted through ER with a complaint of progressive painful right neck mass for 2 weeks. No radiation of pain, no relieving or aggravating factors, no previous episode, no history of trauma, insect bite or contact with sick person. Systemic review was unremarkable. Examination showed right neck swelling 4*5 cm rounded, hard and tender mass with no fluctuation, no pulsation, no skin changes. Based on the above clinical findings, the patient was started on antibiotic and aspirated fluid sent for culture and sensitivity which reveal the presence of " klebsiella pneumonia " which considered quite rare to be present in paraphryngeal abscess.

KEY WORDS: Neck abscess, klebsiella pneumonia, rare organism, deep neck infection.

INTRODUCTION
Neck abscess and deep neck infections(DNI) consider as a serious disease. The neck abscess is known as a collection of pus in facial planes and spaces of the head and neck. The incidence has been decreased as a result of the use of antibiotics and improved oral hygiene.[1, 2] Serious complications such as life threatening deep space infection associated with upper airway obstruction, mediastinitis, thoracic empyema, pericarditis and jugular vein thrombosis can be developed because the presence of vital structures near these spaces.[3] DNI is classified according to the anatomical location of the infection. These are paraphryngeal, retropharyngeal and peritonsillar. DNI has been shown to be predisposed by multiple condition.[12, 4, 6] DNI presented by variety of the clinical manifestations include fever, sore throat, dysphagia, neck mass or swelling, dyspnea, and limited neck motion.[3] There were several bacteria associated with DNI such as Klebsiella pneumoniae, Escherichia coli, Clostridial sp, Proteus sp and Pseudomonas aeruginosa.[7]

The presence of klebsiella pneumoniae in paraphryngeal abscess is considered quite rare.[8]

Case summary
A 24 Y-Old, Saudi male Patient admitted through ER on 18-9-2016. known case of DM, HTN and Sickle cell disease. presentation: right neck mass since two weeks
History of presenting illness: painful right neck mass started two weeks ago increasing in size, no radiation of pain, no relieving or aggravating factors, no previous episode, no history of trauma or insect bite or contact with sick person.

Clinical finding:
Showed right neck swelling 4*5 cm rounded in shaped, hard mass and tender with no fluctuation, no pulsation, no skin changes.

Hospital course:
Patient admitted for neck mass for evaluation and management. Patient started on antibiotic and routine lab work showed re strained profile, uncontrolled DM and low hemoglobin so hematologist and nephrologist was consulted and their impression was sickle cell disease and chronically disease respectively. Patient then went for OR for incision and drainage and it was not accessible in OR and only aspiration was done at that time. The culture and sensitivity from the neck abscess was "klebsiella pneumonia" and Patient. then received the course of antibiotic with according to sensitivity. In course of treatment Patient was admitted to ICU when sudden SOB developed, then he discharged from ICU in a stable condition and shifted to the ward for observation. after that he was stable and fit for discharge, so patient discharged home.

LABs:
Routine lab work done for the PATIENT showed hemoglobinemia and high renal function test. Other investigation including serology was unremarkable

CBC: RBC 3.34 LOW, WBC 7.61 NORMAL, HGB 6.5 LOW, HCT 21.3, MCV 63.8 LOW, MCH 19.5 LOW, MCHC 30.5 LOW PLATELET 614 HIGH, BUN 34 HIGH, CREATININ 1.77, K 4, CA 7.6 LOW.

FNA:
GROSS DESCRIPTATION: 1 cc bloody puss fluid.

MICROSCOPIC DESCRIPTATION: smear and cell block show profuse infiltrate of polymorphs neutrophils, back ground fragments of necrotic fibrous tissue also many sickled shape RBCs seen.

DISCUSSION
Although the incidence of these infection has decreased considerably as a result of the use empirical antibiotic and improvement of oral hygiene.\textsuperscript{[1, 2]}

The head and neck anatomical complexity in term of multiple spaces and proximity to vital structure that may develop more serious complication such as life threatening deep space infection associated with upper airway obstruction, mediastinitis, thoracic empyema, pericarditis and jugular vein thrombosis.\textsuperscript{[3]}

DNI has been shown to be predisposed by multiple condition, such medical condition has different incidence rate in relation to different age groups. According to a few studies, tonsillitis had a higher incidence rate in pediatrics in comparison to odontogenic infection in adults.\textsuperscript{[2, 4, 5]}

In one study they have reported that parapharyngeal abscess is considered to be the most common type of DNI among children, although it has been shown in multiple studies the incidence of different type of DNI is variable, for instance a study on DNI in central Taiwan by Yen et al. showed that retropharyngeal space was reported as the most common site for DNI.\textsuperscript{[9]} where as a study in North Taiwan showed that peritonsillar space was reported as the most common site for DNI in adolescents.\textsuperscript{[10]}

Among of various bacteria associated with DNI, Klebsiella pneumoniae a member of the family Enterobacteriaceae, It is a gram-negative, non-motile, encapsulated, lactose fermenting, facultative anaerobic bacteria, It’s may colonize the skin, pharynx, or gastrointestinal tract and it’s typically affects middle-aged and older men with debilitating diseases such as alcoholism, diabetes, or chronic bronchopulmonary disease, one study showed That the most common organism in diabetic patients was K. pneumoniae (54.5%).\textsuperscript{[11]}

The presence of klebsiella pneumoniae in parapharyngeal abscess is considered quite rare.\textsuperscript{[3]}

Appropriate treatment planning for patients with a deep neck infection requires clear differentiation between cellulitis and abscess.

Medical Therapy
Airway:
The airway is the first priority of treatment.\textsuperscript{[13]}

Patients presenting with impending respiratory distress should undergo a tracheostomy while under local anesthesia to secure a safe airway. Multiple studies suggested the use of iv antibiotics over surgical drainage.\textsuperscript{[14-16]}

Choosing parenteral antibiotics to cover the most likely organisms, Initiate empiric regimens before culture results are obtained based on the local resistance patterns and most common etiologies, Cover gram-positive and gram-negative organisms and aerobic and anaerobic bacteria, including beta-lactamase producing organisms.

Although surgical drainage is considered cornerstone of therapy of deep neck abscesses especially after 48 h of antibiotics therapy.\textsuperscript{[16]}

There are different traditional surgical approaches have been described in relation to the site of infection and the involvement of adjacent structures.\textsuperscript{[17]}
Endoscopic approaches have a number of important advantages in comparison to external approaches, including minimal complication, the absence of cervical scarring, and a short operation time.\(^\text{18}\)  

In addition to external incision for drainage, percutaneous ultrasound- or CT-guided aspiration of deep neck abscesses using a spinal needle has been reported.\(^\text{19, 20}\)

Deep neck infections are usually drained through an external approach. As recommended by Sethi and Stanley,\(^\text{21}\) the entire cavity is then explored by blunt finger dissection to avoid any residual purulent material, particularly in the case of multilocular abscesses. Moreover, tracheotomy can be performed to avoid respiratory distress in patients with compromised upper airway patency.

In a multivariate statistical analysis of 282 cases of deep neck infection showed that the following factors were associated with increase hospital stay:

1. Presence of comorbidities
2. Nonodontogenic sites of origin
3. Leukocyte counts above 11.0 cells × 10^9/L at presentation
4. Need for both medical and surgical treatments.\(^\text{22}\)

So In SePatientember 2016, a 24 years old man with underlying disease of poor controlled type 2 diabetes and HTN came to our emergency department With a right neck mass since two weeks, painful increasing in size, no radiation of pain, no relieving or aggravating factors, no previous episode, no history of trauma or insect bite or contact with sick person, no dental problem of ear fullness.

Fibro oPatientic scope was done and there was no tumor in the nasopharyngeal region, the initial impression was TB vs lymphadenopathy.

Pan CT was done right neck abscess and no lymphadenopathy and no tumor or metastatic lesion, the Index case was caused by klebsiella pneumoniae is a common hospital-acquired pathogen and it may also be a community acquired pathogen, only six cases was reported in the English literature, the Antibiotic treatment should be according to the sensitivity of the culture taken from the abscess.

This case exemplifies a unusual organism of neck abscess; klebsiella pneumoniae, it also illustrate a high index of suspicion of cases of neck mass with underlying diabetes mellitus in adult.

REFERENCES


