



CLINICAL PROFILE OF NECK SPACE INFECTIONS IN A TERTIARY CARE CENTRE

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ABSTRACT

In this study we try to understand the various clinical presentations of patients with neck space infections coming to the department of ENT of MGM Medical College & Hospital, Aurangabad and to see how early detection and appropriate timely management done at such a tertiary care centre helps to reduce the morbidity and mortality associated with it and thus improve the treatment outcome.

KEYWORDS :

INTRODUCTION

Neck space infections are very commonly seen regardless of the wide use of antibiotics these days. In the pre-antibiotic era even though the incidence of infections were much more higher, in the third world countries it still causes significant morbidity and mortality and poses as an important health problem.

The anatomy of the neck is complex as it comprises various crucial structures of the airway, gastrointestinal system, many major vessels and nerves. Abscesses are formed along the various fascial planes of the neck.⁽¹⁾

The clinical presentation often points to the various spaces involved with it making the diagnosis difficult due to the complex anatomy. Treatment of neck space infections requires knowledge of the natural history of the disease and a detailed understanding of anatomy which gives the surgeon the ability to treat these grave infections.

REVIEW OF LITERATURE

Neck is the space between skull base and clavicle. Despite it being a very small area it has a lot of important structures traversing through it with anatomic features.

Neck Space Infections (NSI) suggests infection in the potential spaces of the neck with abscess formation or with cellulitis. Antibiotics usage at adequate strength and duration has brought a significant decrease in the occurrence and progression of the disease. These infections are severe and inadequate treatment may lead to progression and can be associated with high morbidity and mortality.

The commonly encountered sources of infections were odontogenic infections, salivary gland infections, tonsillitis, pharyngitis, etc. especially in developing countries.⁽²⁾

The presenting complaints seen commonly were neck swelling with pain, odynophagia,⁽³⁾ fever, difficulty swallowing, trismus, dysphonia, ear pain, and difficulty breathing⁽⁴⁾ In the pediatric age group, fever, neck swelling with stiffness were most commonly seen, followed by sore throat, poor oral intake, drooling of saliva and enlarged lymph nodes⁽⁵⁾

MATERIAL & METHODS :

Simple sampling method was used for inclusion of study samples.

Patients coming to OPD/IPD/Emergency of MGM Medical College, Aurangabad with history pointing to neck space infections.

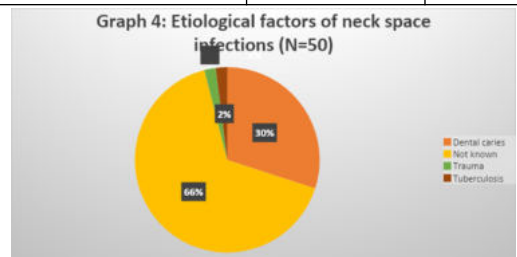
A total number of 50 patients of neck space infections were selected during the period between October 2018 to October 2020. Patients presenting with complaints like neck swelling with pain, fever, odynophagia, dysphagia, toothache and tenderness over the neck were selected for the study.

All patients underwent a thorough history taking and detailed examination. Once the history and examination findings point to an infection in the neck space most of them were subjected to radiological investigations like ultrasound and/or computed tomography scan depending on the relevant investigation based on the examination.

Some patients were directly taken for incision and drainage as they presented with either a burst abscess or an abscess about to burst.

Table 1 : Etiological Factors Of Neck Space Infections

| Etiological factors | Frequency | Percent |
|---------------------|-----------|--------------|
| Not known | 33 | 66.0 |
| Dental caries | 15 | 30.0 |
| Trauma | 1 | 2.0 |
| Tuberculosis | 1 | 2.0 |
| Total | 50 | 100.0 |



Above table & graph shows the Etiological factors of deep neck space infection in study subjects. Out of 50 study subjects 15 had dental caries, 1 each had trauma and tuberculosis and in 33 it was not known.

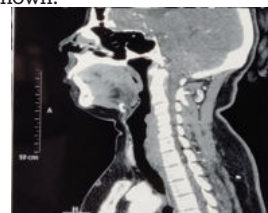


Figure 1: Sagittal Ct Neck Showing Retropharyngeal Abscess

Table 2 : Diagnosis Of Neck Space Infections

| DIAGNOSIS | FREQUENCY | PERCENT (%) |
|-----------------------|-----------|-------------|
| Submandibular abscess | 15 | 30 |

| | | |
|-------------------------|-----------|------------|
| Visceral space abscess | 9 | 18 |
| Ludwig's angina | 8 | 16 |
| Submental abscess | 7 | 14 |
| Cheek abscess | 4 | 8 |
| Parotid abscess | 2 | 4 |
| Retropharyngeal abscess | 2 | 4 |
| Suprasternal abscess | 2 | 4 |
| Pre-auricular abscess | 1 | 2 |
| TOTAL | 50 | 100 |

Table 3 : Pus Culture Sensitivity Reports Seen In Patients

| PUS CULTURE | FREQUENCY | PERCENT (%) |
|----------------------------|-----------|-------------|
| Sterile | 38 | 76 |
| Staphylococcus Aureus | 3 | 6 |
| Mycobacterium Tuberculosis | 3 | 6 |
| Proteus Mirabilis | 1 | 2 |
| E. Coli | 1 | 2 |
| Staphylococcus Epidermidis | 1 | 2 |
| Serratia Marcescens | 1 | 2 |
| Streptococcus Anginosus | 1 | 2 |
| Klebsiella Pneumoniae | 1 | 2 |
| TOTAL | 50 | 100 |

Table 4 : Management Of Neck Space Infections

| MANAGEMENT | FREQ. | PERCENT |
|--|-----------|------------|
| I.V. antibiotics, I&D and daily dressing | 27 | 54 |
| Only medical management (I.V antibiotics) | 8 | 16 |
| I.V. antibiotics, dental extraction, I&D and daily dressing | 6 | 12 |
| I.V antibiotics and dental extraction | 3 | 6 |
| I.V antibiotics, dental extraction & control of BSL | 3 | 6 |
| I.V antibiotics, I&D, daily dressing and orthopedic management | 1 | 2 |
| I.V antibiotics, I & D, daily dressing & control of BSL | 1 | 2 |
| CT guided aspiration & I.V antibiotics | 1 | 2 |
| TOTAL | 50 | 100 |



Figure 2: Post I & D Submandibular Wound



Figure 3 : Post I & D Submental Wound

DISCUSSION

The wide use of antibiotics especially penicillin has significantly reduced the incidence of deep neck space infections.⁽⁶⁾

In our study it is seen that 30% had dental caries, 2% each had trauma and tuberculosis and in 66% it was not known. . Similar etiology was seen in the study done by Kalsotra P et al where odontogenic infections was 35.59% and no known etiology was seen in 18.64%⁽⁷⁾ & also in study done by Puttamadaiah GM et al no known cause was seen in 36% while dental infections were seen in 50% of the patients.⁽⁸⁾

Most patients in our study had submandibular space involved

maximum (30%) followed by visceral space abscess in 18%. Also it was seen that 12% had diabetes mellitus and 2% each had beta thalassemia, HIV, hepatitis B, hypertension and tuberculosis.

ABSCESS



Figure 4: Right Submandibular Forming Abscess

LUDWIGS ANGINA



Figure 5: Ludwigs Angina

MANAGEMENT:

In present study the medical and surgical management of study subjects shows that only medical management was done for 8 (16%) cases and in 42 (84%) cases both medical and surgical management was done. Surgical intervention was in the form of incision & drainage and/or dental extraction.



Figure 6 : Secondary Healing Of Large Wound



Figure 7 : Secondary Healing By Wound Contracture

CONCLUSION

- Despite the wide use of antibiotics, deep neck space infections are commonly seen even today.
- In our study a male preponderance is seen and the most commonly affected people are in their third and fourth decades of life.
- It is also seen that due to inappropriate use of antibiotics a lot of drug resistance is seen to commonly used broad spectrum antibiotics thus making it necessary to use higher antibiotics to treat the infections. Also an alteration is seen in the pattern of clinical presentation because of it.
- Immunocompromised patients or patients with comorbidities like diabetes mellitus and tuberculosis had prolonged hospital stay with delayed wound healing and associated complications.
- Broad spectrum antibiotics coverage was given to all patients with anaerobic cover as well. Patients with odontogenic infections were recommended for early intervention like extraction.
- Although surgical drainage remains the main method of treating deep neck abscesses, conservative medical treatment was also effective in selected cases.
- Thus it is concluded that early diagnosis and appropriate management can highly reduce the risk of complications & bring down the morbidity and mortality associated with neck space infections.

SUMMARY

In the present study of "Clinical Profile of Neck Space Infections in a Tertiary Care Centre" done in MGM Medical College & Hospital, Aurangabad from October 2018 to October 2020, a total number of 50 cases of neck space infections were enrolled, whose detailed history, proper clinical examination followed by appropriate radiological and laboratory investigations the diagnosis was obtained.

54% of patients were males and 46% were females showing a male predominance. The most commonly encountered symptom was that of pain and swelling which accounted for

26% of patients whereas dental caries was the most commonly found etiological factor (30%).

The most commonly involved neck space was that of submandibular region accounting for 30% of cases followed by visceral space abscess 18%. Radiological investigation in the form of USG or CT scan was done in most of the patients.

Diabetes mellitus was the most frequently seen co-morbidity in these patients (12%). Also in our study it is seen that 76% of patients had no growth on culture and only 12% were culture positive due to history of taking antibiotics prior to any intervention. The most common organism isolated on culture was staphylococcus aureus & mycobacterium tuberculosis.

All patients were started on broad spectrum antibiotics with anaerobic coverage and later on if found resistant on culture was changed accordingly. 84% of patients underwent incision and drainage while 16% improved only with medical management.

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