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Research Article

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Deep Neck Abscess: A Retrospective Study of 52 Cases

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ABSTRACT

Deep neck space infection leading to Abscess (DNA) are serious diseases that involve several spaces in the neck due to bacterial infections originating from the upper aero digestive tract [1, 4]. Although the incidence of Deep Neck Abscess (DNA) has decreased mainly for the availability of antibiotics, this infection still occurs with considerable frequency in developing countries [2, 3], low socioeconomics [3] group and with comorbidities [3, 4]. A retrospective study of 52 patient with deep neck abscesses caused by multiple etiologiesadmitted at Dept. of ENT Head & Neck Surgery, AGMC and GBP hospital Agartala, Tripura, India was conducted and bacterial tonsillitis is most common etiology commonly involving the peritonsillar space and Streptococcus pyogenes was found to be most common microorganism associated with DNA. Surgical intervention along with appropriate antimicrobials are mainstay of Treatment of DNA. The main complications of DNA were septic shock.

Key Words: *Abscess cervical; Infection cervical; Neck abscess; Neck infection; Neck spaces*

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INTRODUCTION

Deep neck Abscess (DNA) are serious diseases that involve several spaces in the neck. These are bacterial infections originating from the upper aero digestive tract [1, 4]. Although the incidence of Deep Neck Abscess (DNA) has decreased mainly for the availability of antibiotics, this infection still occurs with considerable frequency and commonly seen in low socioeconomic group with poor oral hygiene, and nutritional disorders and can be associated with high morbidity and mortality [2, 3 & 4]. Treatment of DNA includes antibiotic therapy, airway management and surgical intervention [3, 5]. Management of DNA is traditionally based on prompt surgical drainage of the abscess followed by broad spectrum antibiotics and using appropriate antibiotics after receiving the pus culture and sensitivity reports [6, 7].

OBJECTIVE

This study was conducted to investigate the age and gender, clinical symptoms, site involved, etiology, co-morbidities, bacteriology, complications, outcomes and our clinical-surgical experience with deep neck abscesses.

METHODS

A retrospective study analyzed 52 patients diagnosed with deep neck abscesses caused by multiple etiologies, admitted at Dept. of ENT Head & Neck surgery, AGMC and GBP hospital Agartala, Tripura, India during the period April 2022 to March 2023.

Fifty-two patients were included and 9 (17.3%) were younger than 20 years old (the children group), 43 patients (82.7%) were older than 20 years (the adult group). The following clinical features were analyzed and compared: age, gender, clinical symptoms, leukocyte count, the affected neck space, lifestyle habits, antibiotic therapy, comorbidities, etiology, bacterial culture, time of hospitalization, the need of tracheostomy and complications.

RESULTS

There was predominance in the male gender (63%) and young people (mean age 32 years). All of the 52 patients with associated disease comorbidity were adults out of which 12patient with diabetes and 2patients with HIV infection (CD4 counts more the 500). The most frequent etiologies were bacterial tonsillitis (44.2%), odontogenic infections

(30.8%) lymphadenitis (15.4) and foreign body impaction (5.8%). The most common space areas affected were the peritonsillar (40.4%), submandibular (34.6%) and retropharyngeal spaces (11.5%). In children group, the site most commonly involved was the peritonsillar space (9patients, 17.3%). In adults' group, the site most commonly involved was Submandibular (18 patients, 34.6%). Pain & difficulties in swallowing (50.0%) is the most common clinical presentation followed by neck swelling (34.6%). Streptococcus pyogenes (34.6%) followed by s. aureus (26.9%) was the most common microorganism present. Amoxicillin combination with clavulanate (82.1%) was the commonly used antibiotic. The main complications of abscesses were septic shock (5.8%), and pneumonia (1.9%). So far Tracheostomy was not done for any patient in our cases (0.00%). The mortality rate was (1.9%).

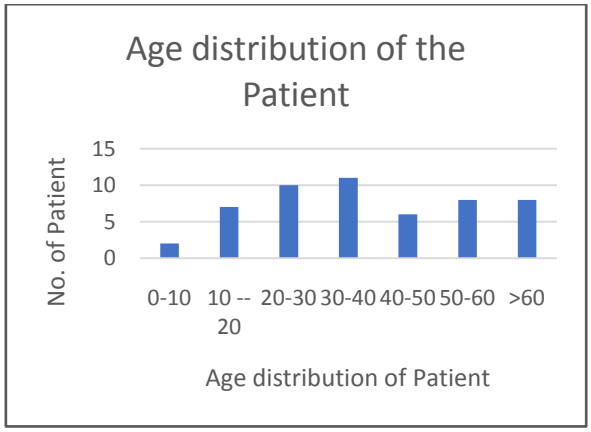


Figure 1: Age distribution of the patient

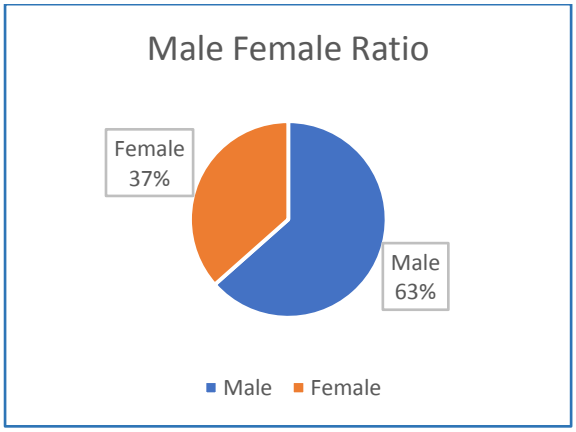


Fig 2: Male female ratio

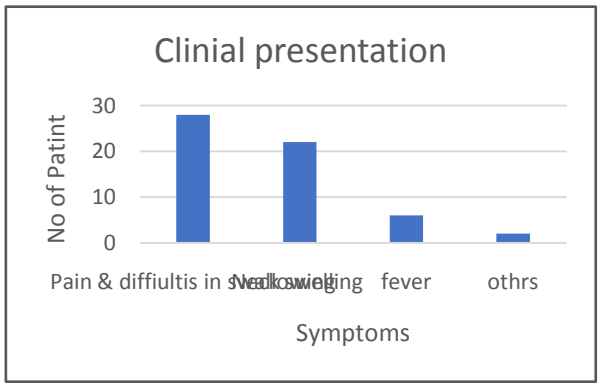


Fig 3: Clinical presentation

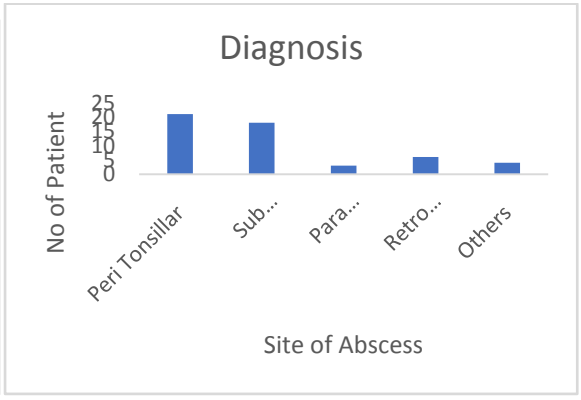


Fig 4: Site of DNA

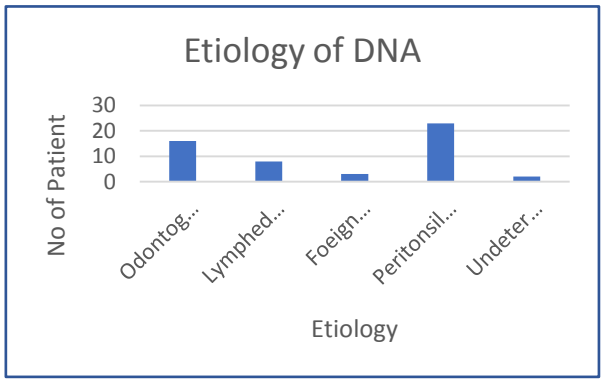


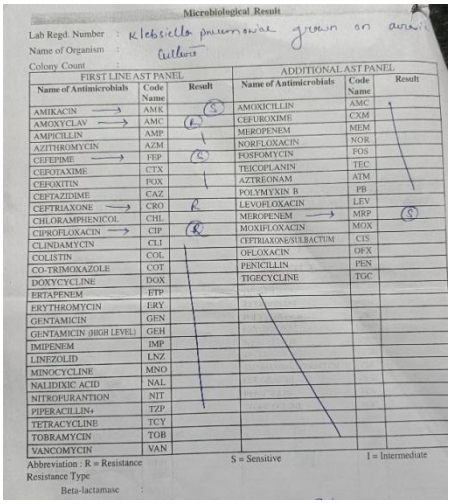
Fig 5: Etiology of DNA

Complication Tracheostomy and Mortality

Complication & Mortality	No. of Patient	Percentage (%)
Septic shock	3	5.77%
Pneumonia	1	1.92%
Mediastinitis	0	0.00%
Tracheostomy	0	0.00%
Death	1	1.92%

Fig 6: Complication of DNA, Tracheostomy and Mortality

Fig 7: Pus collection for Culture & Sensitivity



Microbiological Result

Lab Regd. Number : Klebsiella pneumoniae grown on culture

Name of Organism :

Colony Count :

FIRST LINE AST PANEL			ADDITIONAL AST PANEL		
Name of Antimicrobials	Code Name	Result	Name of Antimicrobials	Code Name	Result
AMIKACIN	AMK	S	AMOXICILLIN	AMC	
AMOXYCLAV	AMC	R	CEFUROXIME	CXM	
AMPICILLIN	AMP		MEROPENEM	MEM	
AZITHROMYCIN	AZM		NORFLOXACIN	NOR	
CEFEPIME	FEP	R	FOSFOMYCIN	FOS	
CEFOTAXIME	CTX		TEICOPLANIN	TEC	
CEFOXITIN	FOX		AZTREONAM	ATM	
CEFTAZIDIME	CAZ		POLYMYXIN B	PB	
CEFTRIAXONE	CRO	R	LEVOFLOXACIN	LEV	
CHLORAMPHENICOL	CHL		MEROPENEM	MRP	S
CIPROFLOXACIN	CIP	R	MOXIFLOXACIN	MOX	
CLINDAMYCIN	CLI		CEFTRIAXON/SULBACTUM	CIS	
COLISTIN	COL		OFLOXACIN	OFX	
CO-TRIMOXAZOLE	COT		PENICILLIN	PEN	
DOXYCYCLINE	DOX		TIGECYCLINE	TGC	
ERTAPENEM	ETP				
ERYTHROMYCIN	ERY				
GENTAMICIN	GEN				
GENTAMICIN (HIGH LEVEL)	GEH				
IMIPENEM	IMP				
LINEZOLID	LNZ				
MINOCYCLINE	MNO				
NALIDIXIC ACID	NAL				
NITROFURANTION	NIT				
PIPERACILLIN+	TZP				
TETRACYCLINE	TCY				
TOBRAMYCIN	TOB				
VANCOMYCIN	VAN				

Abbreviation : R = Resistance S = Sensitive I = Intermediate

Resistance Type

Beta-lactamase :

Fig 8: Culture sensitivity reports

CONCLUSION

The clinical features and severity of DNA varied according to different age groups, perhaps due to the location of the infection and a higher incidence of comorbidity in adults. Early diagnosis prompt surgical intervention along with appropriate antibiotics and care of comorbidity can reduce complication like septic shock, pneumonia and need tracheostomy. DNA in adults is more facile to have multi-space involvement and lead to complications and seems to be more serious than that in children.

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