



THE EFFICIENCY OF FNA IN THE MANAGEMENT OF HEAD AND NECK MASSES IN KAUH

Afnan F. Bukhari¹, Saad Al-Muhayawi², Bhaa Maher Simbawa³, Sultan Hudaib AlJaid³,
Abdulrahman Saeed Almaimouni³, Amienah Mohesen Alsubaie⁴ Dana Ayed AlRahmani⁴
and Wed Rasheed Albardi⁴

¹Department of Otolaryngology-Head Neck Surgery in King Faisal Specialist
Hospital and Research Center

²Department of Otolaryngology-Head Neck Surgery in King Abdulaziz University

³Medical Intern, University of Jeddah

⁴Medical Intern, King Abdulaziz University

ARTICLE INFO

Article History:

Received 28th October, 2016
Received in revised form 18th
November, 2016
Accepted 16th December, 2016
Published online 28th January, 2017

Key words:

Fine needle aspiration, neck masses.

ABSTRACT

Introduction: Fine needle aspiration cytology (FNAC) is a technique in which a fine needle is introduced into a mass and aspirate the cellular material, and a cytological diagnosis is rendered. It is a safe procedure with known minimal complications in comparison to more invasive techniques.

Methods: A retrospective study reviewed patients with neck masses between (March-October 2015) in king Abdulaziz university hospital (KAUH), Jeddah, Saudi Arabia.

Results: The overall sensitivity, specificity, and accuracy of FNAC were 92%, 92.75%, 92.37 respectively.

Conclusion: This study confirms that FNA is a highly accurate method to assess for primary diagnosis of neck masses, whether it is benign or malignant.

Copyright © 2017 Afnan F. Bukhari et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Fine needle aspiration cytology is a technique in which a fine needle is introduced into a mass and aspirate the cellular material, and a cytological diagnosis is rendered.^[4] It is a safe procedure with known minimal complications in comparison to more invasive techniques such as wide core biopsy or open biopsy.^[7] Furthermore, it can be performed as an outpatient procedure, and it is well tolerated by patients.^[4] FNAC is also suitable for delicate region of head and neck.^[7] False-negative and false-positive FNA results are reported in almost every series, therefore, reliance upon FNA findings should include also clinical, radiographic findings.^[1]

Objective: To evaluate the efficacy and role of FNA in the diagnosis of head and neck masses in king Abdulaziz university hospital.

METHODS

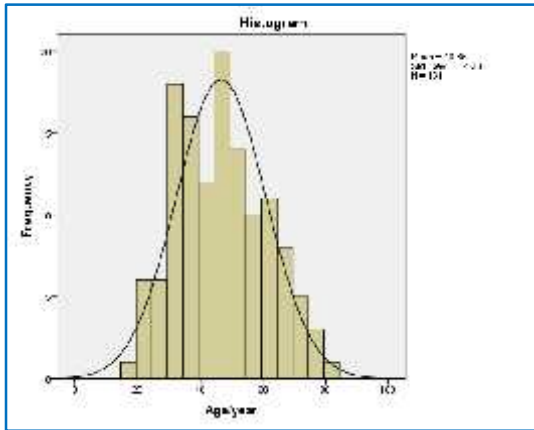
A retrospective study reviewed patients with neck masses between (March-October 2015) in king Abdulaziz university hospital (KAUH), Jeddah, Saudi Arabia, to assess sensitivity, specificity and accuracy of the FNA in the diagnosis of head and neck masses. Subjects with neck masses were identified by

going back to medical records. We looked into different variables including demographic data, cytological and histopathology examination reports. Ethical approval for this study was obtained from the Research Ethics Committee at King Abdulaziz University Hospital (KAUH). Statistical analyses were conducted using SPSS. Descriptive analyses were first performed. Chi-square test was used to test the association between FNA (cytological examination) results and histopathology diagnoses.

RESULTS

A total of 131 patients (111/131 females, 20/131 males) had FNAC performed during the study period between March-October 2015. The mean age was 46.65 years with a maximum of 84 years and minimum of 17 years. SD=14.330.

Out of 131 head and neck masses by cytological examination found to be benign in 64 cases (48.9%), malignancy in 50 cases (38.2%), and unsatisfactory in 17 cases (13%), while by histological examination, found to be benign in 69 cases (52.7%), malignancy in 46 cases (41.3%), and 16 cases (6.1%) were unsatisfactory. The overall diagnostic sensitivity, specificity, and accuracy of FNAC of cervical lymph nodes were 92%, 92.75%, 92.37 respectively.



DISCUSSION

The current study reviewed the accuracy, sensitivity, and specificity of FNA in the diagnosis of head and neck masses by comparing cytological examination to histopathology examination reports. In general the accuracy of FNA varies with cytopathologist experience and according to the tissues sampled.^[1] In this study neck masses undergone excision after FNAC due to cytological suspicion of malignancy and the majority 46/50 (92%) of neck masses were malignant when compared to histopathology results, with only 4/50(8%) false positive results when compared to histopathology which showed benign lesion. Which suggest that the sensitivity of the test to diagnose malignant lesions was 92%.This correlates with a study of fine needle aspiration cytology in the diagnosis of head and neck masses in which the found majority (69.3%) of lymphadenopathy were malignant when compared to histopathology.⁽¹⁾ This is also in correlation with a study done in Egypt by Nasreen and Naveen (2011) in which 69.7% of their cases had malignant lymphadenopathy when compared to histopathology.^[3]

In this study 64/69 (92.75%) of benign masses on FNAC proved to be benign when compared with histopathology examination with only 5/69 (7.25%) of benign masses were misdiagnosed as malignancy.

Which means the test has the ability to exclude the disease by 92.75%.

In the current study the overall sensitivity is 92%, specificity is 92.75% which is higher than Amedee et al 2001 in a review article demonstrated that FNA followed by biopsy has a high overall accuracy of 87% for malignant mass. Other literatures showed that the overall sensitivity of FNA in diagnosis of malignant mass ranges from 70% to 100% (Hirachand et al 2009, Saatian et al 2011).^{[5]. [6]} Our study results lies within this range. Another study of fine needle aspiration cytology in the diagnosis of head and neck masses they found sensitivity is 88%, specificity is 98% and accuracy is 93%, which goes in line with our results.

CONCLUSION

This study approve that FNAC is a highly accurate, simple and rapid diagnostic test method that can be useful for preliminary assessment of head and neck masses, whether it is benign or malignant. Furthermore, the appropriate use of FNAC may obviate the need for more invasive procedures like wide core biopsy or open biopsy.

References

1. Khdhayer AA, Al-Azawi MJ, Al-Alash N, Yasseen HA. Fine Needle Aspiration Cytology In The Diagnosis Of Head And Neck Masses. *European Scientific Journal*. 2016 Mar 1;12(9).
2. Schwarz R, Chan NH, MacFarlane JK. Fine needle aspiration cytology in the evaluation of head and neck masses. *The American Journal of Surgery*. 1990 May 1; 159(5):482-5.
3. Nesreen H. Hafez, Neveen S. Tahoun. (2011). Reliability of (FNAC) in cervical lymphadenopathy. *Journal of the Egyptian National Cancer Institute*;23,105–114
4. Amedee RG, Dhurandhar NR. Fine-Needle Aspiration Biopsy. *The Laryngoscope*. 2001 Sep 1;111(9):1551-7.
5. Hirachand S, Lakhey M, Akhter J, Thapa B. Evaluation of fine needle aspiration cytology of lymph nodes in Kathmandu Medical College, Teaching hospital. *Kathmandu University Medical Journal*. 2009;7(2):139-42.
6. Saatian M, Badie BM, Shahriari S, Fattahi F, Rasoolinejad M. FNA diagnostic value in patients with neck masses in two teaching hospitals in Iran. *Acta Medica Iranica*. 2011 Feb 1;49(2):85.
7. Tatomirovic Z, Skuletic V, Bokun R, Trimcev J, Radic O, Cerovic S, Strbac M, Zolotarevski L, Tukic L, Stamatovic D, Tarabar O. Fine needle aspiration cytology in the diagnosis of head and neck masses: accuracy and diagnostic problems. *Journal of BU ON.: official journal of the Balkan Union of Oncology*. 2008 Dec;14(4):653-9.
8. Lee EW, Chen C, Sauk S, Ragavendra N. How diagnostic is ultrasound-guided neck mass biopsy (fine-needle capillary sampling biopsy technique)? evaluation of 132 nonthyroid neck mass biopsies with pathologic analysis over 7 years at a single institution. *Journal of Ultrasound in Medicine*. 2009 Dec 1;28(12):1679-84.
9. Göret CC, Göret NE, Özdemir ZT, Özkan EA, Do an M, Yanık S, Gümrükçü G, Aker FV. Diagnostic value of fine needle aspiration biopsy in non-thyroidal head and neck lesions: a retrospective study of 866 aspiration materials. *International journal of clinical and experimental pathology*. 2015;8(8):8709.
10. Schwarz R, Chan NH, MacFarlane JK. Fine needle aspiration cytology in the evaluation of head and neck masses. *The American Journal of Surgery*. 1990 May 1;159(5):482-5.
11. Singhal N, Khurana U, Handa U, Punia RP, Mohan H, Dass A, Gupta V. Intraoral and Oropharyngeal Lesions: Role of Fine Needle Aspiration Cytology in the Diagnosis. *Indian Journal of Otolaryngology and Head & Neck Surgery*. 2015 Dec 1; 67(4):381-7.
12. Ashraf MJ, Raad H, Azarpira N, Khademi B, Shishegar M, Gandomi B, Haganah S, Adibi P. Fine-Needle Aspiration Cytological Diagnosis of Neck Masses. *Acta cytologica*. 2015 Feb 11; 59(1):68-76.