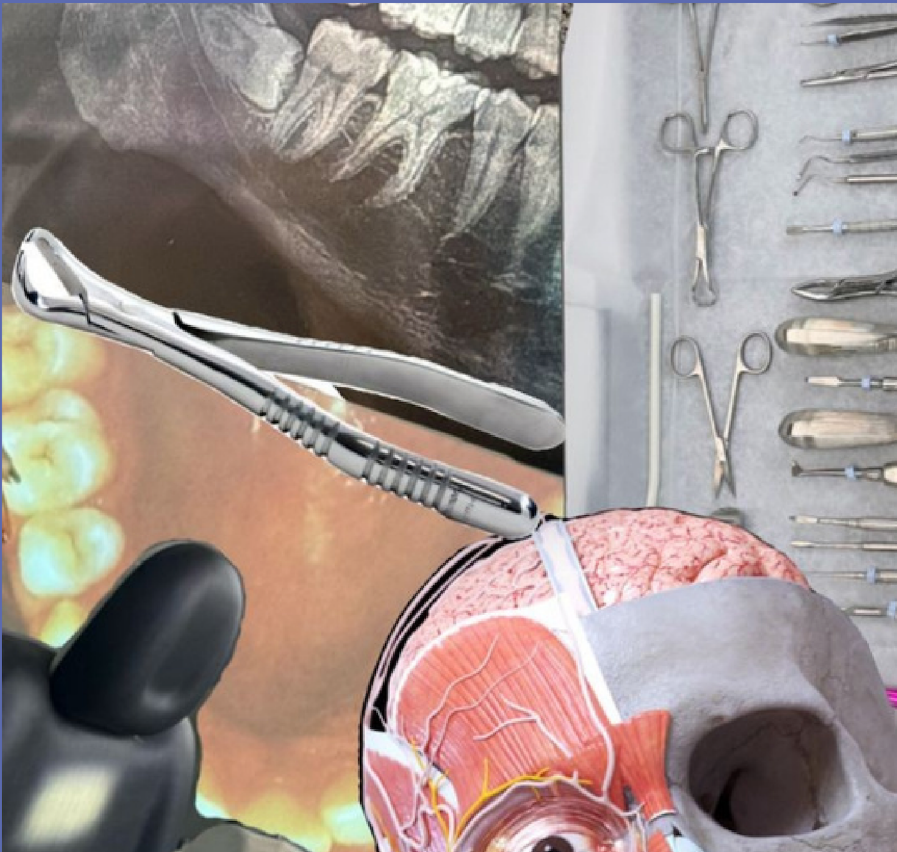


# FINE NEEDLE ASPIRATION CYTOLOGY IN ORAL SURGERY



By Blessed Bites  
Dr.Kashifa Muskan

# TABLE OF CONTENTS



01 Introduction

---

02 Procedure & Indications

---

03 Advantages & Limitations

---

04 Clinical Applications In Oral Surgery

---

05 Conclusion & References

# INTRODUCTION

Fine Needle Aspiration Cytology (FNAC) is a minimally invasive diagnostic procedure commonly used in oral surgery to evaluate lesions, masses, and lymph nodes in the head and neck region. It involves the use of a thin, hollow needle to extract cells from a lesion for cytological examination. This method is appreciated for its simplicity, safety, and cost-effectiveness.

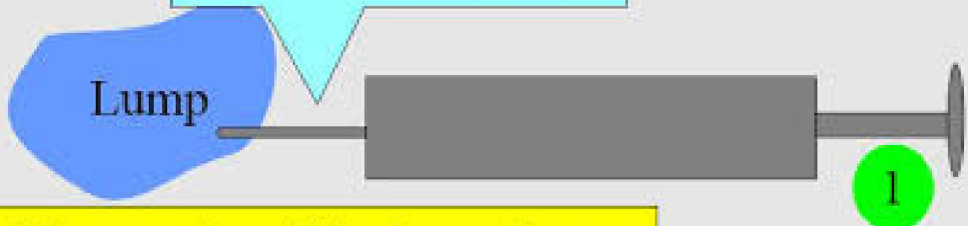
## Procedure

1. Preparation: The site of aspiration is cleaned with an antiseptic solution. Local anesthesia may be applied to reduce discomfort.
2. Aspiration: A fine needle (usually 22-25 gauge) attached to a syringe is inserted into the lesion. The needle is moved back and forth within the lesion to obtain cellular material.
3. Smearing: The aspirated material is expelled onto glass slides and spread into a thin smear.
4. Fixation and Staining: The smears are fixed in an appropriate fixative (e.g., 95% ethanol) and stained using techniques such as Papanicolaou or Giemsa staining.
5. Microscopic Examination: A pathologist examines the stained slides under a microscope to identify cellular details and make a diagnosis.

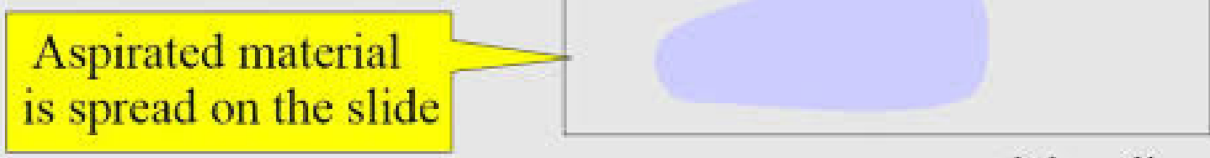
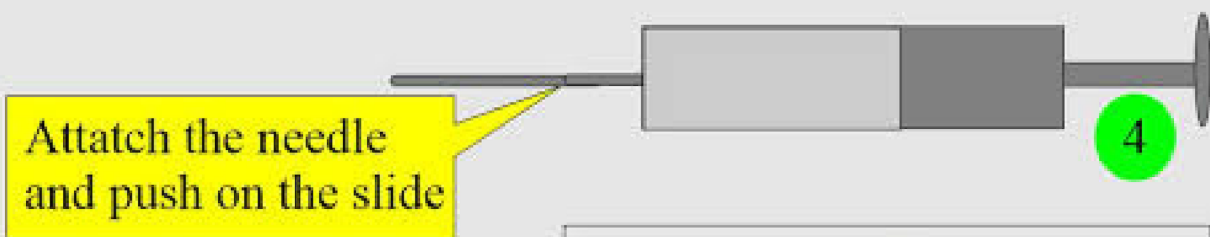
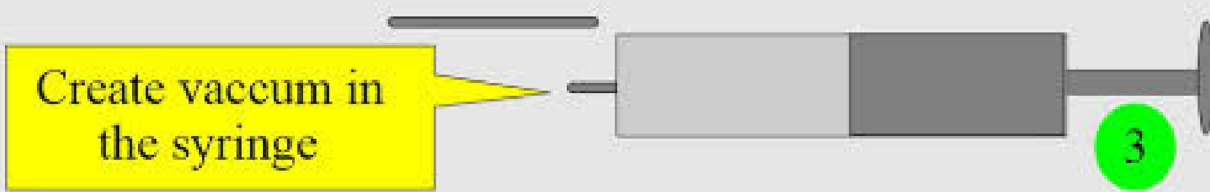


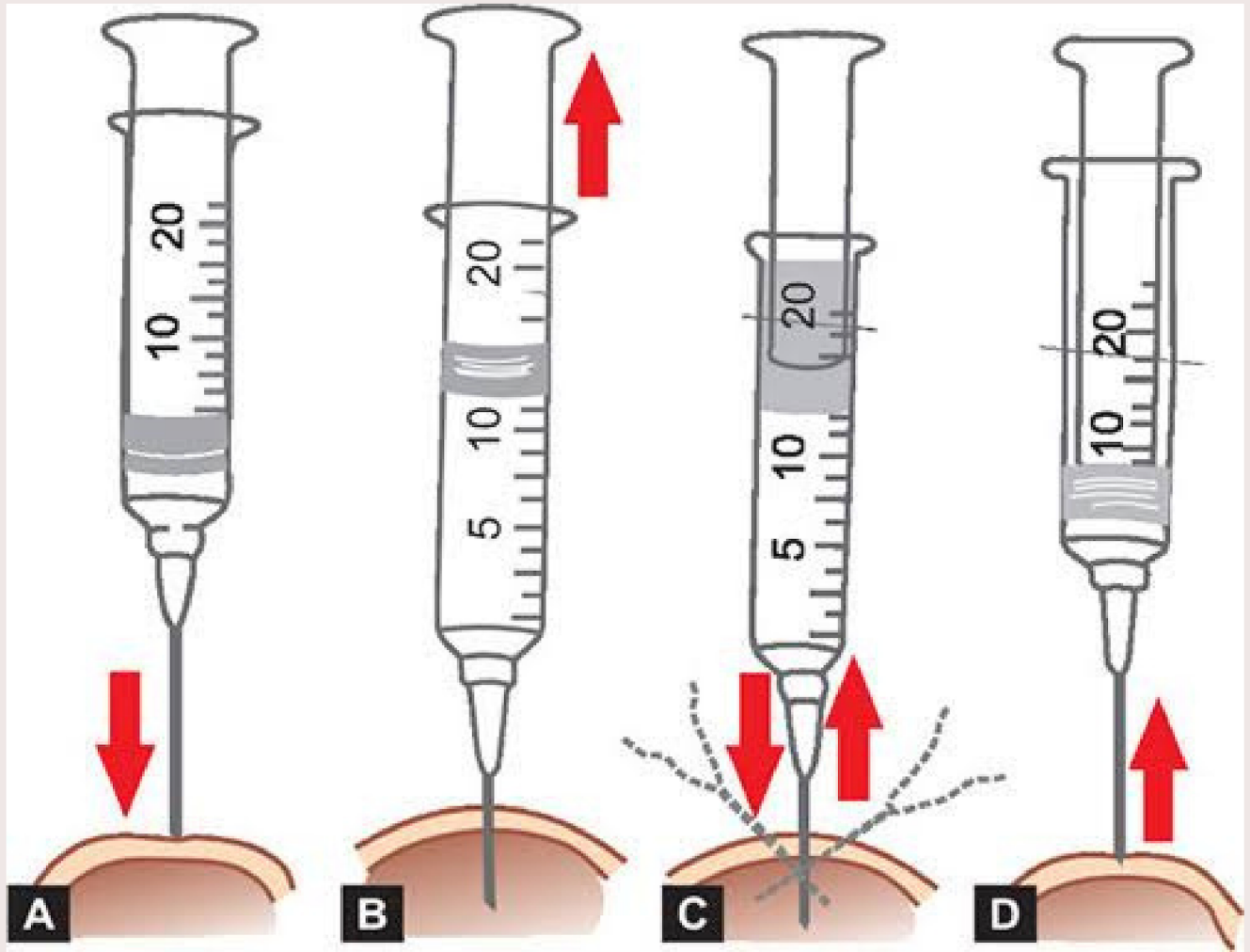
# Fine needle aspiration cytology (FNAC) procedure

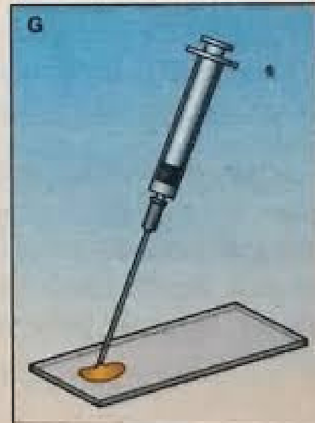
With the help of syringe



After suction of the lump Leave needle in the original position

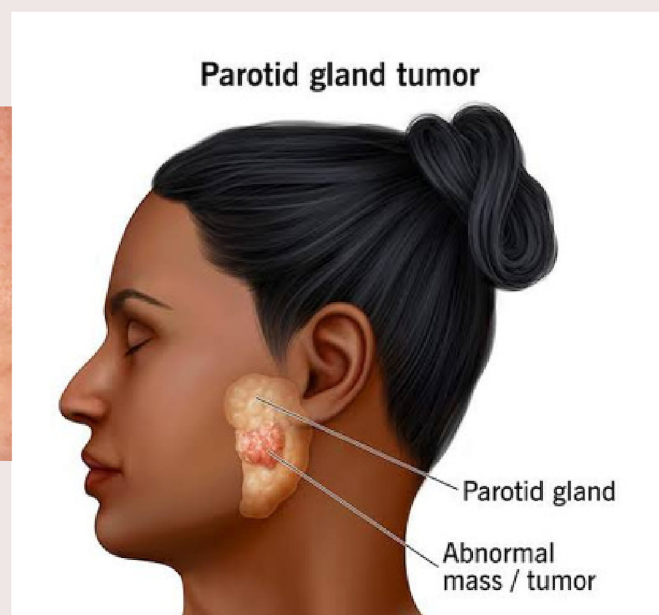
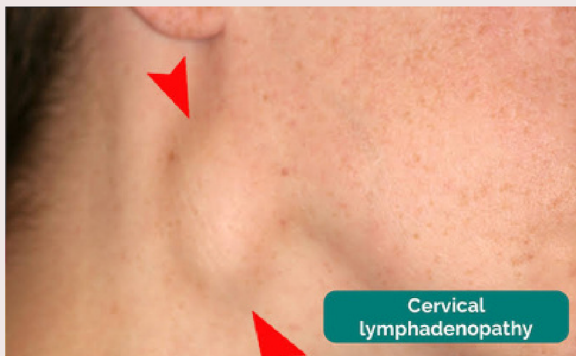






## Indications

- Evaluation of oral masses: FNAC is used to differentiate between benign and malignant lesions.
- Salivary gland lesions: It helps in diagnosing neoplasms in the parotid, submandibular, and minor salivary glands.
- Lymphadenopathy: FNAC is useful in evaluating cervical lymph node enlargement to diagnose conditions like lymphoma, metastatic carcinoma, and reactive lymphadenitis.
- Bone lesions: FNAC can be employed in assessing jaw lesions such as cysts and tumors.



## Advantages

- Minimally invasive: FNAC causes minimal discomfort and does not require surgical incision.
- Quick results: The procedure can be performed in an outpatient setting, and results are often available within a few hours to days.
- Cost-effective: It is less expensive compared to surgical biopsy.
- Safe: The risk of complications, such as infection or hematoma, is very low.



## Limitations

- Sample adequacy: The quality of the sample may vary, and insufficient cellular material can lead to non-diagnostic results.
- Operator dependency: The accuracy of FNAC depends on the skill and experience of the clinician performing the aspiration and the pathologist interpreting the results.
- False negatives/positives: There is a risk of false-negative results, especially in cystic or necrotic lesions, and false-positive results in cases of inflammation or reactive changes.

## Diagnostic Accuracy

FNAC has shown high sensitivity and specificity in diagnosing various oral lesions. Studies report sensitivity ranging from 80% to 90% and specificity from 90% to 95% in differentiating malignant from benign lesions .

## Clinical Applications in Oral Surgery

Oral Squamous Cell Carcinoma (OSCC): FNAC is useful in the initial assessment of suspected OSCC, guiding further diagnostic and therapeutic decisions.

Salivary Gland Tumors: FNAC can help differentiate between benign and malignant salivary gland tumors, aiding in the management plan.

Lymph Node Metastasis: In patients with known primary tumors, FNAC of cervical lymph nodes can detect metastasis, crucial for staging and treatment planning.

Odontogenic Cysts and Tumors: FNAC can provide preliminary information about the nature of jaw lesions, supplementing radiographic findings.

FNAC can be used in the initial assessment of cysts and squamous cell carcinoma



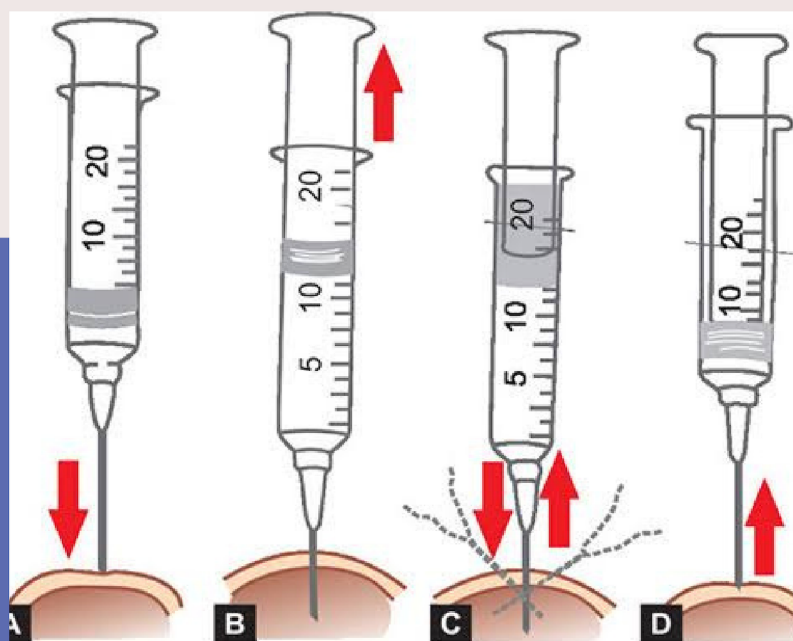
## Conclusion

Fine Needle Aspiration Cytology is a valuable tool in oral surgery for the diagnosis and management of various lesions. Its minimally invasive nature, combined with high diagnostic accuracy, makes it an essential procedure in the evaluation of head and neck masses. However, its effectiveness depends on adequate sampling and skilled interpretation, highlighting the need for trained professionals in performing and analyzing FNAC.

## References

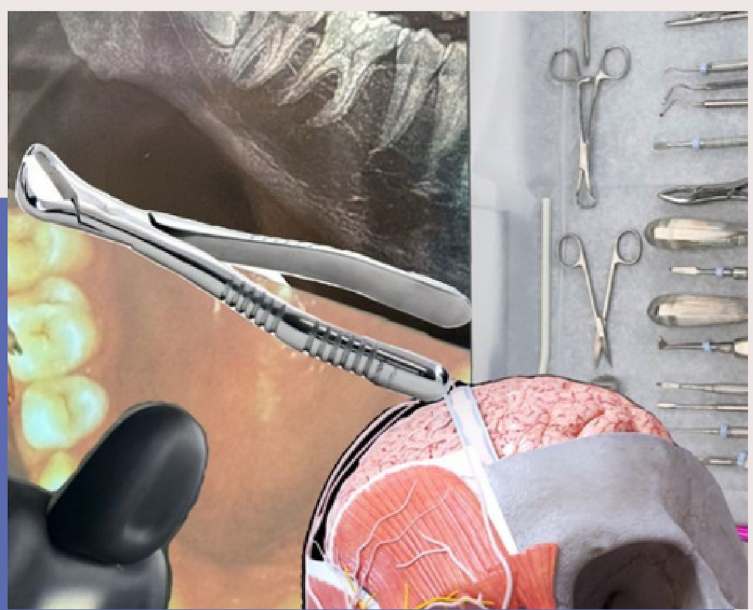
Rajwanshi, A., Gupta, N., & Srinivas, R. (2006). Fine needle aspiration cytology: utility and pitfalls. *Indian Journal of Pathology and Microbiology*, 49(3), 316-325.

Daskalopoulou, D., & Papadimitriou, C. (2008). Fine-needle aspiration biopsy of salivary gland lesions. An evaluation of its diagnostic value and pitfalls. *Acta Cytologica*, 52(3), 448-454.





- Vercellotti, T. (2009). Essentials in Piezosurgery: Clinical Advantages in Dentistry. Quintessence Publishing.
- Peterson, L. J., et al. (2014). Principles of Oral and Maxillofacial Surgery. Mosby.
- Hupp, J. R., et al. (2018). Contemporary Oral and Maxillofacial Surgery. Elsevier.
- Fonseca, R. J. (2017). Oral and Maxillofacial Surgery. Saunders.
- Peterson, L. J., et al. (2014). Principles of Oral and Maxillofacial Surgery. Mosby.
- Hupp, J. R., et al. (2018). Contemporary Oral and Maxillofacial Surgery. Elsevier.



# Blessed Bites



@drkash