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## Research Article

### REHYDRATION WITH OLIVE OIL OF AIR DRIED BUCCAL SMEAR: AN ALTERNATIVE TO ROUTINE WET FIXATION

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#### ABSTRACT

**Aim:** To evaluate the possibility of air dried smear and rehydration with olive oil instead of conventional method.

**Materials and Methods:** 20 paired buccal smear taken from the healthy individual .one set labelled as wet fixation with 95% ethanol and other set labelled as dry fixation with rehydration with olive oil .they were graded blindly.

**Result:** Statically significant similarities were seen between the two groups in terms of cellularity and staining intensity.

**Conclusion:** The procedure of air drying and rehydration with olive oil is inexpensive, easy, convenient technique and almost equally effective to routine fixation.

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#### INTRODUCTION

Smear as a useful method for early detection of cancerous lesions and inflammatory conditions is routinely carried out worldwide. Exfoliative cytology is an minimally technique for obtaining cells to role out the diagnosis. One alternative method for overcoming the problem of poor fixation, introduced over half a century ago, is air-drying followed by rehydration and fixation before staining.

#### Objective

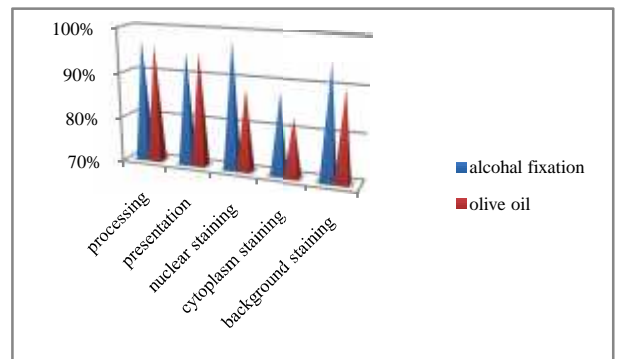
- To evaluate rehydration with olive oil can be adopted as an alternative technique.
- To evaluate the rehydration of air dried smear on staining intensity.

#### MATERIALS AND METHOD

20 paired buccal smear taken from the healthy individual, age 17-75% both male and female participated., one set labeled as A with 95% ethanol for 20-30 minutes and other set labeled as B air dried the smear for 24hrs by placing the slides on rack exposed to room air and after 24 hrs with rehydration with olive oil. Olive oil easily available in market. Olive ratio 1:1 (1 ratio of olive oil and ratio of saline) because its very thick should dilute in saline. Pour the olive oil over the air dried

smear for 10 minutes for rehydration, and then wash the slides in running water for 1-2 minutes Both the groups of smears are stain with rapid PAP, air dry and mount it. There is two observer in this study, both are blinded to score slides.

#### RESULT



**Table 1** Representing the score of processing and preservation of smears in both alcohol & olive oil rehydration

Processing and preservation	0	1	2	3
Alcohol	2	5	9	4
Olive oil	3	4	9	4

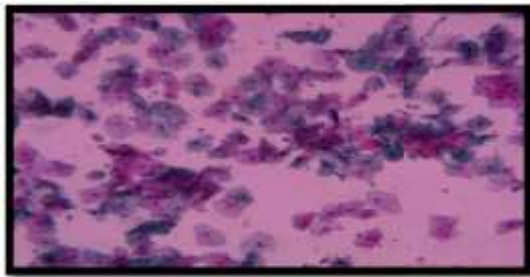
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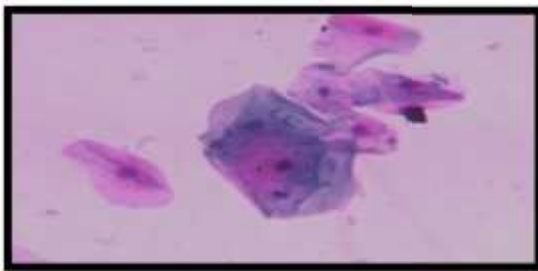
**Table 1** Representing the score of staining intensity of smears in both alcohol & olive oil rehydration

Staining intensity	0	1	2	3
Alcohol	1	13	6	
Olive oil	4	12	4	

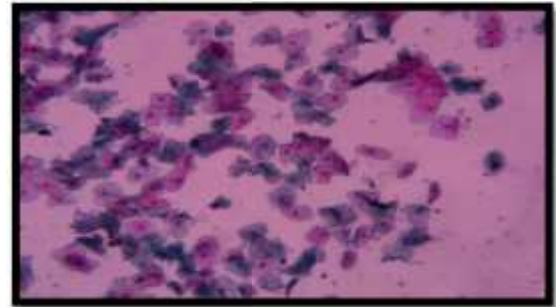
- Statically significant similarities were seen between the two groups in terms of preservation and staining intensity.
- Using SPSS software, version 13, a comparison of 2 groups.
- Unpaired independent t test is used.
- P value of this study is  $P < 0.01$



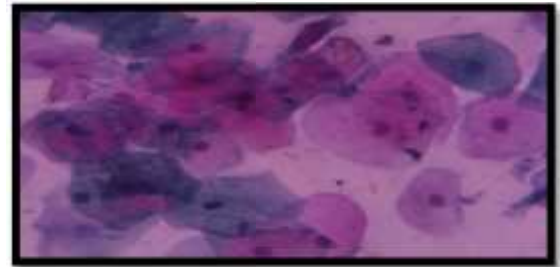
**Fig 1** representing the 4X view of olive rehydration



**Fig2** representing the 10X view of olive oil rehydration



**Fig 3** representing the 4X view of alcohol fixation



**Fig 4** representing the 10X view of alcohol fixation

Background staining is again almost equal in both the solution i.e. 94%-92% seen micro organism and some inflammatory cells also present.

## CONCLUSION

All the slides in both group was satisfactory, it shows good fixation and also good staining intensity of oral squamous cells and background. The procedure of air drying and rehydration with olive oil is inexpensive, easy, convenient technique and almost equally effective to routine fixation. This study can be helpful in screening a large population in remote areas when wet fixation cannot be done.

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## DISCUSSION

This study revealed that alcohol fixation and air dried smear rehydrate with olive oil both have almost similar results in terms of preservation and staining intensity. Among 20 paired slides in both the group was satisfactory. Processing seen poor due to DPX mounting not proper 2%-3% in alcohol fixation and 4-5% in olive oil rehydration, Nuclear staining 9%-10% seen faded in both solutions Cytoplasm staining 10%-13% seen vacuolization and irregular staining which mostly found in olive oil rehydration.

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