POTENTIAL PITFALLS FROM MEAT PARTICLES CONTAMINANTS ON CYTOLGICAL DIAGNOSIS

By

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DECLARATION

"I hereby declare that this thesis is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions."

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ABSTRACT

POTENTIAL PITFALLS FROM MEAT PARTICLES CONTAMINANTS ON CYTOLOGICAL DIAGNOSIS

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Background: Pitfalls resulted from misinterpretation of cytology samples can lead to diagnostic errors with contaminants mimicking the abnormal cells as one of the major factors. Meat particles is an example of food contaminants that can be present in various cytology samples. The aims of this study are to elucidate the basic cytomorphological structure of meat particles contaminants and compare with normal cells, malignant cells and microorganisms.

Methods: Random meat particles were selected. For chicken meat and seafood, scraped cells smeared on slides by using tongue depressor spatula were used. Whereas, catfish was cut into small pieces and directly smeared using 'pick and smear' method. Two smears were prepared, then stained with Papanicolaou stain and May-Grunwald Giemsa stain.

Results: Chicken meats mimicked *Actinomyces species*, cockles resemble with parabasal cells, endocervical and macrophage, short neck clams similar with parabasal cells, shrimp mimicked atypical glandular cells, squid resemble with tumor diathesis and catfish look-like parakeratosis.

Conclusion: Cytomorphological of meat particles can resemble normal cells, malignant cells and microorganisms that may contribute to cytodiagnostic error. These finding provides cytomorphological catalogue of meat particles that can be useful in minimizing pitfalls in cytology.

Keywords: pitfalls, meat particles, contaminants, mimic, respiratory specim

CHAPTER 1
INTRODUCTION

1.1 Background of study

In cytology, pitfalls are common that have many different types of pitfalls and happen many different situations which can simulate unsystematic technique (Orell, 2003). Some of potential pitfalls be able to contribute misreport or misdiagnosis and create more challenging during evaluation of results either false positive or false negative diagnosis results (Orell, 2003; Idowu & Powers, 2010). According to Berner & Graber (2008), the diagnostic errors occur were impact to death, misdiagnosis and errors from hospital setting were found due to medical mistakes in hospital. Thus, pitfalls also can lead to undue follow-up, unnecessary treatment, increasing operating cost and morbidity (Panthanowitz, Goulart, & Martinez-Giron, 2011).

There are many factors that can cause pitfalls such as diagnostic error during sample collection, sample processing and handling (Pantanowitz et al., 2011). Food contaminants is one of type of pitfalls especially during sampling procedure of cytology samples. Food contaminants may represented in anal and respiratory cytology samples that can cause delay interpretation and misdiagnosis (Idowu & Powers, 2010). An exfoliated such as sputum, abrasive cytology such as bronchial washing, bronchial brushing, bronchioalveolar lavage (BAL) and fine needle aspiration cytology (FNAC) are example types of sampling techniques for respiratory cytology (Orell, 2003). Some food contaminants can mimic certain true characteristic of normal cells, malignant cells and microorganisms in cytology that can lead misdiagnosis and create confusion during interpretation (Chang, Moatamed, KY, Salami, & Apple, 2013).