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2024

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THYROIDECTOMIES AT AN ACADEMIC HOSPITAL IN JOHANNESBURG-CORRELATION BETWEEN PRE-OPERATIVE CYTOLOGY FINDINGS AND POST-OPERATIVE HISTOLOGY RESULTS



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A Dissertation submitted to the faculty of Health Sciences, University of the Witwatersrand, Johannesburg, in partial fulfillment of the requirements for the degree of Master of Medicine

Johannesburg

April 2023

DECLARATION

I, Dr Lydia Kilani, declare that this research report is my own work. It is being submitted for the degree of Master of Medicine at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any other University. This research report is written in the submissable article format



_____.

(Signature of candidate)

2nd day of May 2023 in Sandton .

DEDICATION

To my son Gabriel, I want you to be proud of me.

ABSTRACT

BACKGROUND- Pre-operative cytological assessments of thyroid nodules have become an inexpensive, uncomplicated and reliable way of making a diagnosis of malignancy, as well as useful in stratifying thyroid nodules according to risk. The Bethesda system for reporting thyroid cytopathology (BSRTC) provides a standardized method for reporting this and more accurately estimating risk. This study examines the correlation between BSRTC and final histology in patients undergoing Thyroidectomies at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH)

OBJECTIVES- To determine the accuracy of pre-operative cytological diagnosis in patients undergoing thyroidectomies at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH), and also to determine the rate of reporting of each BSRTC category, the rate of malignancy of each category, and the demographics of the study population, which includes age, gender and race.

METHODS- This was a retrospective, observational study, which looked at 113 thyroidectomies performed between July 2013 and December 2016 at CMJAH. Data from each case was captured and analyzed, specifically analyzing pre-operative cytopathological diagnosis which is performed via ultrasound-guided fine needle aspiration FNA, with the post-operative histopathological diagnosis.

RESULTS- A total of 174 patients underwent thyroid procedures during the study period, of which 113 fit the inclusion criteria. The majority of the patients were African (79%) and female (88%). A preoperative diagnosis of indeterminate (BSRTC categories 3 and 4) was made in 30.1% of cases. The most reported BSRTC category was category 2 which made up 42.5% of all pre-operative reports, and all

were confirmed benign on post-operative histology. BSRTC category 3 of “Atypia of unknown significance” (AFLUS) was made in 19 patients of whom 3 had thyroid cancer. BSRTC category 4 describes a “follicular neoplasm”: there were 15 patients in this category of whom 8 were found to be malignant. The diagnosis of BSRTC category 5 or “suspicious of malignancy” and category 6 of “proven malignancy” were made in 14 and 17 times, respectively. Only five of 14 BSRTC category 5 were confirmed cancers. The cancer risk for BSRTC 6 was 82.4% (14 of 17 patients).

CONCLUSION- Pre-operative cytological diagnosis was more accurate in BSRTC categories 2 and 6. A diagnosis of ‘indeterminate’ was made in a significant number of patients (n=19), where more than half of them were found to be malignant. Malignancy risk is lower than expected for BSRTC categories 5 and 6, which may indicate an element of ‘over-diagnosis’ in this institution. Further studies are required.

Word count- 395