بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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Comparing pre-operative fine needle aspiration cytology to paraffin section post-operative for solitary thyroid nodule

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بسم الله الرحمن الرحيم

قالوا سبحانك لا علم لنا إلا ما علمتنا
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List of Abbreviations

STN	**Solitary thyroid nodule**
FNAC	Fine needle aspiration cytology
CT	Computed tomography
RLN	Recurrent laryngeal nerves
SLN	Superior laryngeal nerve
H&E	Haematoxylin and Eosin
Clear cells	C-cells
APUD	Amine precursor uptake and decarboxylation
ATA	American Thyroid Association
US	Ultrasound
MRI	Magnetic resonance imaging
PET	Positron emission tomography
PTC	Papillary thyroid carcinoma
TCPTC	Tall cell Papillary thyroid carcinoma
eFVPTC	Encapsulated follicular variant of Papillary thyroid carcinoma
NIFTP	Noninvasive follicular thyroid neoplasm with papillary-like nuclear features
FTC	*Follicular Thyroid Carcinoma*
TSH	thyroid-stimulating hormone
FT4	Free thyroxine
FT3	Free tri-iodothyronine
ACR	American College of Radiologists

TI-RADS	Thyroid Imaging Reporting and Data System
99m Tc	technetium
NCCN	National Comprehensive Cancer Network
KSThR	Korean Society of Thyroid Radiology
BTA	British Thyroid Association
TBSRTC	The Bethesda System for Reporting Thyroid Cytopathology
ROM	Risk of malignancy
NIFTP	Non-invasive Follicular Thyroid Neoplasm with papillary-like nuclear features
FNA	*Fine needle aspiration*
BAETS	British Association of Endocrine and Thyroid Surgeons
TPO	Thyroid peroxidase
MoAb	Monoclonal antibody termed
CI	Capsular invasion
VI	Vascular invasion
cm	*Centimeter*
TN	*True negative*
TP	*True positive*
TP	*True positive*
FP	*False positive*
HPE	Histopathological examination

Introduction

Solitary thyroid nodule (STN) is a single swelling in the thyroid tissue that is radiologically remarkable from the rest of thyroid parenchyma ***(Haugen et al., 2016).*** STN is found either by self-examination by the patient, during a clinical assessment by the clinician or incidentally discovered on radiological procedures ***(Davies et al., 2014).***

Thyroid nodules are common; they are more frequent in females than males and their prevalence increases with age and body mass index ***(Fisher et al., 2018).***

Clinically palpable nodules are experienced in about 8% of the adult population, with the utilization of imaging procedures specially ultrasound; the possibility of recognition of thyroid nodules has significantly increased ***(Tai et al., 2012).***

The prevalence of thyroid malignancy is low; being just about 1%. However, it was reported that the rate of thyroid cancer is expanding over the years. Thyroid malignancy occurs in about 5% of all thyroid nodules irrelevant of their size (***Yeung et al., 2008, Unnikrishnan et al., 2011).***

The possibility of malignancy is more in cases with STN compared to those with multi-nodular goiter ***(Gupta et al., 2010, Iqbal et al., 2010).***Thyroid nodules are of a specific concern when they are found in cases less than 20 years old as it is has more risk of malignancy in such young age group ***(Carling et al., 2014).***

The pre-operative assessment of thyroid nodules is crucial to differentiate between benign and malignant nodules. It also assists to avoid unnecessary surgical procedures and subsequent possible complications such as hypothyroidism, parathyroid or laryngeal nerves injury ***(Tai et al., 2012).***

FNAC is the gold standard technique in the assessment of thyroid nodules; it is described as quick, reliable, cost effective and minimally invasive. One of the significant points of interest is that FNAC could be done as an out-patient procedure. According to many studies it has led to significant decrease in surgical procedures of the patients with thyroid nodules; however it shares to an increase in percentage of thyroid surgeries with malignant lesions ***(Yassa et al. 2007).***

FNAC, especially ultrasound guided is very safe diagnostic procedure in the management of thyroid nodules. Post FNAC local pain and minor hematoma are the most common complications, while serious complications seem to be rare ***(Polyzos et al., 2009).***

The success of FNAC depends on several factors such as aspirator experience, skillful cytological interpretation and rational analysis of cytological and clinical data. Still the histopathological examination of the thyroid gland is considered as superior to FNAC in diagnosing the thyroid pathologies due to certain pitfalls in FNAC such as scanty sample, vascularity of thyroid swelling variation in sampling technique and inability to differentiate between follicular adenoma from follicular carcinoma, beside the possibility of false negative and false positive ***(Roy et al., 2019, Shere et al., 2013).***