بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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Lymph node status assessment in head and neck squamous cell carcinoma in patients with clinically non palpable lymph nodes.

Study Submitted for the partial fulfillment of Master Degree in Otorhinolaryngology

(Meta analysis)

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Lists of abbreviations

ADC	Apparent diffusion coefficient
ASROC	Asymmetrical Receiver operating curve
AUC	Area under curve
CCA	Common carotid artery
CI	Confidence interval
CN0HNSCC	Clinically N0 Head and neckSquamous cell carcinoma
CT	Computerized topography
D	Dimension
DOR	Diagnostic odds ratio
FDG	F18 fluorodeoxyglucose
FN	False negative
FP	False positive
HNSCC	Head and neck squamous cell carcinoma
ICA	Internal carotid artery
LR+	Likelihood ratio positive
LR-	Likelihood ratio Negative
MRI	Magnetic resonance imaging
N	Node
PET	Positron emission tomography
PET/CT	Positron emission tomography Computerized topography
REM	Random-effects method
ROC	Receiver operating curve
SCC	Squamous cell carcinoma
SCM	Sternocleidomastoid muscle
SLN	Sentinel lymph node biopsy
SND	Selective neck dissection
SPECT	Single photon emission computed tomography
SROC	Symmetrical Receiver operating curve
TN	True negative
TP	True positive
US	Ultrasonography
USFNAC	US fine needle aspiration cytology
USgFNAC	US guided fine needle aspiration cytology

Abstract

Background: The most important prognostic factor in squamous cell carcinoma of the head and neck (HNSCC) is the presence or absence of clinically involved neck nodes. The presence of metastases in a lymph node is said to reduce the 5-years survival rate by about 50%. The appropriate diagnosis of the presence of metastatic node is very important for the management of HNSCC

Aim: To compare different diagnostic modalities for assessment of the clinically non palpable lymph nodes in HNSCC including by meta-analysis: CT, MRI, US, USFNAC and PET/CT for the proper cervical lymph node staging.

Methods: Met-analysis study on patients with HNSCC of clinically non palpable lymph nodes (cN0).

Results: Analysis was divided in 6 groups .Each group contain analysis of one modality according to available studies per patient, per level and per lesion .US is fair test per patient and per lesion. CT is good test per patient and excellent test per lesion. MRI is poor test per patient and fair test per lesion.CT-MRI combined is fair per patient and excellent per level. PET/CT is good per patient, fair per lesion and excellent per level. USFNAC is excellent per lesion.

Conclusion: CT, CT-MRI combined, PET/CT and USFNAC proved to be excellent in detecting cN0. MRI was poor test in detecting cN0. US was a fair test in detecting cN0 if used alone.

Key words: lymph node metastases, Occult metastatic neck disease detection

Introduction

Squamous cell carcinoma (SCC) is the most common malignant neoplasm of the upper aerodigestive tract. One of the most important influences on the prognosis is the presence of cervical lymph node (LN) metastasis. **(Richard et al., 1987)**

The presence of cervical lymph node metastases is a major prognostic factor in SCC of the head and neck. The presence of a solitary ipsilateral metastatic lymph node reduces expected survival by almost 50%. **(Hillary et al., 2017)**

In patients with Clinically N0 Head and neckSquamous cell carcinoma (cN0HNSCC) patients, treatment options have been determined by considering the probability of cervical LN metastasis.The prevalence of occult cervical LN metastasis is known to range from 12% to 50% depending on the location and the size of the primary cancer. Also, the presences of occult metastasis increase the risk of recurrence and indicate poor prognosis. **(Kim et al., 2018)**

It is generally accepted that a watchful waiting should be considered when the risk of occult cervical LN metastases is estimated to be 20% or less.If the risk of occult cervical LN metastasis is thought to be greater than 15-20%, elective neck treatment such as selective neck dissection or irradiation should be considered as a standard treatment. **(Weiss et al., 1994)**

Neck dissection is too morbid to be used as a staging tool in patients with cN0HNSCC patients. Also, because of the high morbidity and the cost of the procedure, optimal diagnostic tools should be used to improve the preoperative assessment of the cervical LN involvement to avoid unnecessary operations and to detect patients who would have the greatest benefit from an elective neck dissection. Therefore, if preoperative imaging studies could predict the risk of cervical nodal metastasis with satisfactory sensitivity, patients without nodal metastasis could possibly avoid these procedures. **(Kim et al., 2018)**

Aim of the Work

This meta-analysis study aims to compare different diagnostic modalities for assessment of the clinically non palpable lymph nodes in head and neck squamous cell carcinoma including: Computerized topography (CT), Magnetic resonance imaging (MRI), Ultrasonography (US), US guided fine needle aspiration cytology (USgFNAC) and Positron emission tomography Computerized topography (PET/CT) for the proper cervical lymph node staging.