بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: ....

Assessment of Diaphragmatic Mobility by chest Ultrasound and Basic Echocardiography in Patients with Malignant Pleural Effusion Undergoing Pleurodesis

Thesis

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Eman Mohamed Elbaz

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List of Abbreviations

Abb.	Full term
2D	Two-dimensional
ADA	Adenosine deaminase
AR	Aortic regurgitation
AS	Aortic stenosis
ASS	Absent sliding score
AV	Aortic valve
Cm	Centimeter
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
CV	Chamber view
CW	Continuous-wave doppler
CXR	Chest x-ray,
DE	Diaphragmatic excursion
DM	Diabetes mellitus,
DTF	Diaphragmatic thickness fraction
ECG	Continuous electrocardiograph
EF	Ejection fraction
EGFR-TKIs	Epidermal growth factor receptor tyrosine kinase inhibitors
ERS/EACTS	European respiratory society/european association of cardiothoracic society
HS	Highly significant
HTN	Hypertension
IHD	Ischemic heart disease
IPC	Indwelling pleural catheter
IVC	Inferior vena cava
IVS	Inter-ventricular septum
LA	Left atrium
LDH	Lactate dehydrogenase

List of Abbreviations Cont...

Abb.	Full term

LV..... Left ventricle,
LVDd ..... Eft ventricular diameter in diastole
LVDs ..... Left ventricular diameter in systole
LVF ..... Left ventricular function
MPEs ..... Malignant pleural effusions
MRI ..... Magnetic resonance imaging
MV..... Mitral valve
NS..... Non significant
NSCLC..... Non-small cell lung cancer
PW..... Pulsed-wave doppler
RA..... Right atrium
RV..... Right ventricle,
S..... Significant
SD..... Standard deviation
TAPSE..... Tricuspid annular plane systolic excursion
TR..... Tricuspid regurge,
TTE ..... Transthoracic echocardiography
TV..... Tricuspid valve
US..... Ultrasonography
VATS..... Video-assisted thoracoscopic surgery
VEGF ..... Vascular endothelial growth factor

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INTRODUCTION

The aim of pleurodesis is to achieve a symphysis between visceral and parietal pleural layers, in order to prevent accumulation of either air or fluid in the pleural space. Its main indications are malignant pleural effusions and pneumothorax ***(Rodriguez-Panadero and Antony, 1997).***

Pleurodesis can be done chemically or surgically chemicals such as Bleomycin, Tetracycline, Povidone iodine and talc ***(Chen et al., 2013).***

Chemical pleurodesis involves the intrapleural instillation of a sclerosant through a chest catheter or by thoracotomy or thoracoscopy. Chemical pleurodesis by chest catheter uses an intercostal catheter to drain pleural fluid, reexpand the lung against the chest wall, and instill a sclerosant. Large-bore (20 to 32F) surgical chest tubes have become obsolete in preference for small-bore pigtail catheters (9 to 14F), which improve patient tolerance, provide options for outpatient pleurodesis, and have equivalent rates of success ***(Caglayan et al., 2008).***

Pleurodesis will certainly fail if the lung cannot fully expand to the chest wall (eg, trapped or entrapped lung, interstitial pulmonary fibrosis, endobronchial obstruction) because successful pleurodesis requires contact of the visceral and parietal pleura. Chemical pleurodesis should therefore not

be attempted when full lung expansion to the chest wall does not occur after therapeutic thoracentesis. Patients whose lungs cannot fully expand usually have radiographic evidence of a pneumothorax after thoracentesis or experience chest discomfort during thoracentesis before all pleural fluid is drained ***(Doelken, 2008).***

A complete response is usually defined as no re-accumulation of pleural fluid after pleurodesis until death, and a partial response as partial re-accumulation of fluid radiographically but not requiring further pleural intervention such as aspiration. However, some studies use a 30 day cut-off ***(British Thoracic Society, 2009).***

The most common adverse sequelae of chemical pleurodesis are fever, pain, and Gastrointestinal symptoms ***(Shaw and Agarwal, 2004).***

Diaphragm is the principal generator of tidal volume in normal subjects at rest. Studies have shown that the impairment of diaphragm mobility might be associated with alterations in the principal pulmonary function parameters ***(Yamaguti et al., 2008).***

Over the past few years, ultrasound has also been used to evaluate diaphragmatic mobility, since it offers some advantages over fluoroscopy: portability; no exposure to ionizing radiation; and direct quantification of diaphragmatic movement ***(Houston et al., 1995).***