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شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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Assiut University
Faculty of Medicine

Efficiency of Pleural Fluid Examination, Pleural Needle Biopsy and Thoracoscopy in Etiological Diagnosis of Pleural Effusion

Thesis
Submitted for Partial fulfillment
of the master degree in chest diseases

By

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2001

﴿نَرْفَعُ دَرَجَاتٍ مَّن نَّشَاءُ وَفَوْقَ
كُلِّ ذِي عِلْمٍ عَلِيمٌ﴾

صدق الله
العظيم

(الآية ٧٦ ـ سورة يوسف)

To memory of

My Father

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Introduction & Aim of Work

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Pleural effusion is an important and common clinical finding. In some diseases it represents the initial or only sign and its presence can alter the prognosis and treatment of the concomitant disease. Pleural effusion can accompany many diseases at some stages of their evolution. However, the etiology of the pleural effusion is often obscure and it often poses diagnostic difficulties despite the use of routine diagnostic methods *(Chernow & Sahn, 1977)*.

Etiological diagnosis of the pleural effusion is very important to reach a proper management. The diagnosis of pleural effusion like any chest problem may be carried out by simple non invasive techniques firstly and if these failed or their results are not conclusive, more complicated techniques are carried out to reach the final diagnosis *(Esmat et al., 1988)*.

When pleural effusion is accompanied by obvious disease process in the lung or other organs, the etiology becomes readily apparent. However, the investigations and the traditional laboratory methods may sometimes fail to detect an underlying cause of effusion in a good percent of cases. So biochemical, bacteriological and cytological studies of the pleural fluid combined with pleural needle biopsy are very important for the etiological diagnosis.

Percutaneous pleural needle biopsy is a simple, safe but relatively underused diagnostic procedure that may offer a high yield of definitive diagnosis in patients with unexplained pleural effusion, especially of malignant or tuberculous origin *(Bueno et al., 1990)*.

The aim of this work is to study and evaluate the diagnostic efficacy of pleural fluid cytology and pleural needle biopsy for the etiological diagnosis of pleural effusion.

Review of Literature

Etiology of Pleural Effusion

Pleural effusion is defined as accumulation of fluid in the pleural space that exceeds the physiologic amounts of 10-20ml. The pleural effusion develops either when the formation of pleural fluid is excessive and /or when fluid resorption is disturbed *(Light,1995)*. The accumulated fluid in the pleural space may represent a primary manifestation of many diseases but most often they are observed as secondary manifestation or complication of other diseases. *(Loddenkemper, 1999)*. The presence of an effusion provides a focus for a differential diagnosis. Determination the cause of a pleural effusion is not always easy and the most important initial step in determining the cause is to categorize effusions as transudates or exudates. Definitive diagnosis is often possible from examination of pleural fluid obtained at thoracentesis, the term means sampling of fluid from the pleural space. *(Romero et al., 1993)*.

Transudate is pleural fluid formed through a normal capillary membrane and is characterized by little protein or other large molecules . Transudates occur when normal relationships between capillary hydrostatic pressure and colloid osmotic pressure are upset, so that fluid formation at one pleural surface exceeds the fluid reabsorptive capacity at the other *(Weinberger, 1998)*. The clinical disorders that favor the accumulation of a transudate in the pleural space are an increase in systemic capillary pressure, an increase in pulmonary capillary pressure, a decrease in the colloid osmotic pressure of the plasma, and a marked decrease in intrapleural pressure *(Sahn,1997)*.

The majority of transudative pleural effusions are due to congestive