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The possibilty of considering computerized tomography in diagnosing bronchiolitis obliterans an important tool

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Introduction :

In the United States, more than 70 million CT scans are performed each year, making it one of the most often used diagnostic imaging tools. Cerebrovascular illness, cerebral haemorrhage, sinusitis, pulmonary embolism, aortic dissection, fractures, and various cancers are only a few of the conditions for which CT scans are indicated(De González,2009).

Using Computerized tomography CT, a computerized tomography technique, is appropriate since it produces sequential images of thin slices of a patient and allows for three-dimensional localization. Conventional, classical tomography is plagued by interference from structures outside the slice being imaged, but computerized tomography is free of this problem. A fan-shaped beam is used to irradiate only a small portion of the patient. Anatomical transaxial pictures (tomograms) can provide more granular data than traditional planar projection radiographs because of their higher spatial resolution. (Buzug,2011)

Chronic allograft rejection after lung transplantation might emerge clinically as Bronchiolitis obliterans syndrome (BOS), a condition in which the airflow to the lungs is completely blocked and cannot be restored. BOS/chronic allograft rejection is responsible for the bulk of post-transplant problems after the first year, despite recent breakthroughs in the area (Yusen,2013).

BOS is linked to a slew of risk factors, including noncompliance with prescribed medications, cytomegalovirus infection, gastroesophageal reflux disease, acute cellular rejection, air pollution, and interstitial pneumonitis, and it is associated with a threefold increase in mortality risk after three years of onset and progression. BOS is currently identified solely by spirometry, which can vary from one test to the next and is partially effort-dependent(Burton,2007).

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Research Problem:

CT's popularity among ordering clinicians is due in large part to its ease of use and high degree of accuracy in diagnosing a wide range of medical disorders. It's also important to note that CT has its downsides and limits, including ionising radiation exposure and the risk of misdiagnosis for some conditions. There are a variety of radiation doses for CT scans of the head, neck, and upper body that fall between 2 mSv and 8–10 mSv . Magnetic resonance imaging (MRI) is superior to CT in terms of soft-tissue contrast, whereas CT is superior in terms of bone delineation(Seute,2008).

It is considered Clinical history and physical examination, lung function tests showing fixed obstructive lung disease, and CT findings that are consistent with BO are all necessary for a diagnosis of BO in patient. Lung biopsy has long been the gold standard for diagnosing BO, as it is in many other uncommon lung illnesses(Bankier,2001). The main purpose of this research is to see if computed tomography can be used to diagnose bronchiolitis obliterans.

Research Questions:

1- What are the importance considering computerized tomography in diagnosing bronchiolitis obliterans ?
2- What is the considering computerized tomography ?
3- What are the side effects of using computerized tomography in diagnosing bronchiolitis obliterans?

Research Objectives:

- To identify the considering computerized tomography.

- To study the importance considering computerized tomography in diagnosing bronchiolitis obliterans .
- To know the side effects of using computerized tomography in diagnosing bronchiolitis obliterans.

Literature Review:

(Arakawa,2001) Retrospectively reviewing CT scans from 38 patients with BOOP and 43 patients with chronic erosinophilic pneumonia, this study aimed to compare high-resolution CT results from BOOP and CEP and assess if high-resolution CT can discriminate the two. Using a confidence scale with three possible outcomes, two radiologists independently assessed the incidence and distribution of high-resolution CT findings in both patient groups without knowing the diagnosis beforehand. There were substantially more NODULES in BOOP than in CEP, as well as 44.7 percent more than 9.3 percent ($p = 0.001$), and 57.9 percent over the 25.6-percent average in terms of non-septal linear/reticular opacities and bronchial dilatation, according to the findings. (72.1% vs. 39.5%, $p = 0.005$) Septal line thickening was more common in CEP than in BOOP (72.1%) CONSOLIDATION occurred more frequently in BOOP (28.9% vs 9.3%, $p = 0.05$) than in CEP (9%).

(Godet,2012) The treatment of pulmonary disease in immunocompromised patients necessitates a well-defined diagnostic and treatment plan as well as multidisciplinary collaboration. The study's diagnostic approach considers the kind of immunodepression, the clinical picture, radiological signs and symptoms, as well as microbiological, cytological, and even histological examinations of pulmonary and extrapulmonary material. The high-resolution CT scan is crucial because it allows for the prioritisation of diagnostic options. Three key points emerge from the review of the literature: The chest X-ray has limited diagnostic utility; a CT scan of the chest can reveal

abnormalities that are not visible on a standard chest X-ray; the CT scan is useful for detecting and monitoring invasive pulmonary aspergillosis early on.

(de Jong,2006) CT scans may be able to detect chronic lung allograft dysfunction earlier than forced expiratory volume (FEV2) in the second place (FEV1). Intraobserver and interobserver agreement of composite and air-trapping CT scores, the association of FEV1 with the composite and air-trapping CT score, and the relationship of baseline composite CT score to changes in FEV1 and changes in the composite CT score over a year were the objectives of this study. One year after their transplants, as well as at yearly intervals thereafter, the lung function and baseline CT scans of 38 transplant recipients were examined. One month after the scans were taken, the two observers re-scored them for bronchiectasis, mucus plugging and airway wall thickening as well as air trapping. FEV1 was measured in % of the pre-transplant baseline value using CT ratings of 0–100. the outcome There was a mean (SD) gap of 11.2 (4.7) months between baseline CT scans and subsequent CT scans. Composite and air trapping CT scores had high inter- and intra-observer agreement levels. Each unit of worsening in the baseline composite CT score predicted a 1.55 percent and a 1.37 percent decline in FEV1 over the following year (p,0.0001), and a 1.25 and 1.12 unit decline in the composite CT score (p,0.0001) for observers 1 and 2, respectively. The correlation between FEV1 and the composite CT score was significant.

Methodology :

The research approach is quantitative research, which entails gathering information from patient by sampling techniques and sending out online surveys, polls, questionnaires, and other forms of data collection, the findings of which can be expressed numerically.

This study's major goal is possibility of considering computerized tomography in diagnosing bronchiolitis obliterans an important tools, (questionnaire) was employed to collect quantitative data.

The study's sample is made up of doctors are using computerized tomography in diagnosing bronchiolitis obliterans.

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