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TO STUDY THE ROLE OF RADIO-IMAGING IN DIAGNOSIS OF CLASSIC FUO

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Abstract
Background: To study the role of radio-imaging in diagnosis of classic FUO
Methods: It was a cross sectional study of one year duration performed from 1st June 2013 to 31st May 2014 in department of Medicine I.G.M.C. Shimla. Patients above 18 year of age and who fulfilled the Durack and Street criteria of FUO were included in the study
Results: Imaging studies, chest x- ray findings were mainly suggestive of tuberculosis. Abdominal ultrasound was helpful in diagnosing abscesses and abdominal tuberculosis. CT-scan was found to be most important for diagnosing abdominal tuberculosis, pulmonarytuberculosis and splenic abscess.
Conclusion: Imaging studies was helpful tool for FUO diagnosis.
Keywords: USG, FUO, PDCs

Introduction

Classic FUO corresponds closely to the earlier definition of FUO, differing only with regard to the prior requirement for 1 week's study in the hospital. The newer definition is broader, stipulating three outpatient visits or 3 days in hospital without elucidation of cause or 1 week of "intelligent and invasive" ambulatory investigation.[1]

Diagnostic advances continuously modify the spectrum of FUO causing diseases; for example, serological tests have reduced the importance of human immunodeficiency virus (HIV) and numerous rheumatic diseases (e.g. systemic lupus erythematosus, rheumatoid arthritis) as a cause of FUO. Modern diagnostic techniques (e.g. ultrasonography, computed tomography, magnetic resonance imaging) enable early detection of tumors and abscesses that were once difficult to diagnose.[2]

Material and methods

Design of the study

This was a cross sectional study of one year duration and was performed in the Department of Medicine in I.G.M.C. Shimla.

Inclusion criteria

Only patients above 18 years of age were included in the study.

Only those patients who fulfill the Durack & Street criteria of classic FUO were included in the study i.e.

(1) Temperature of > 38.3°C (101°F) on several occasions,

(2) A duration of fever of > 3 weeks and,

(3) Failure to reach the diagnoses despite 3 days of hospital.

Exclusion criteria

Patient with neutropenia (absolute neutrophil count<500/ml) patient developing fever 48 hours after hospital admission and human immunodeficiency virus (HIV) positive patients were excluded from study.

Method of study

After initial history taking and thorough physical examination, the patients were subjected to routine investigations. The history taking and

investigations are discussed in detail in the proforma.

Investigations

Haematological profile-Hb, TLC, DLC, ESR, Platlet count by sm-9haematological analyser.

Biochemical profile

FBS/RBS, LFT, RFT, Electrolytes was done by KONE LAB 30fully automatic analyser.

Results

Table 1: radiological investigations

Investigation	Male	Female	Total	Diagnostic/Etiology
CXR	31	14	45(100%)	9%/Tuberculosis-4
USG	24	9	33(73%)	24%/Enteric-3(6.6%), Tuberculosis-4(8.8%), Abscess-3 Lishmaniasis-2
CT-scan	15	7	22(49%)	24%/Tuberculosis-10(22%)
MRI	2	0	2(4.4%)	Neurobrucellosis
2-D Echo	1	1	2(4.4%)	Pericardial effusion

Table 2: CXR findings

Finding	Male	Female	Total/Freq	Etiology
Pleural effusion	1	2	3(7%)	Tuberculosis, SLE
Cardiomegaly	2	0	2(4%)	Tuberculosis
Infilteration	1	0	1(2%)	Tuberculosis
Hilar prominance	1	1	2(4%)	Tuberculosis
Fibrosis	0	1	1(2%)	Tuberculosis
Opacity	4	0	4(9%)	No diagnosis, were subjected to CT-chest
Normal	24	8	32(72%)	

Table 3: abdominal ultrasonographic findings

Finding	Number ofcases/Freq	Etiology
Splenomegaly	7(15.5%)	Enteric, Tuberculosis, Abscess
Hepatomegaly	4(8.8%)	Tuberculosis, Brucellosis
Hepatosplenomegaly	3(6.6%)	Tuberculosis, Lishmaniasis
Lymphadenopathy	3 (6.6%)	Tuberculosis
(a)Matted lymph nodes	1(2%)	Tuberculosis
Abscess	2 (4.4%)	Liver abscess, perinephricabscess
Gut wall thickening	2 (4.4%)	Tuberculosis
Total	46.3%	

Table 4: CT-ABDOMEN, CT-CHEST AND CT-SPINEFINDINGS

Finding	Number ofcases/Freq	Etiology
Lymphadenopathy	9 (19.2%)	Tuberculosis
(a) Necrotic lymph nodes	4 (8.8%)	Tuberculosis
(b) Matted lymph nodes	1 (2.2%)	Tuberculosis
Alveolar infiltrates/consolidation	5 (11%)	Pulmonary tuberculosis,SLE
Gut wall thickening	4 (8.8%)	Tuberculosis
Splenomegaly	3 (6.6%)	Tuberculosis
Hepatomegaly	2 (4.4%)	Tuberculosis
Hepatosplenomegaly	2 (4.4%)	Splenic abscess
Abscess	2 (4.4%)	Splenic abscess
Caries spine	1 (2.2%)	Tuberculosis

Discussion

Petersdorf et al[2] reported 11% cases of tuberculosis and this study was done in 1960's. Later studies showed decreasing frequency of tuberculosis e.g. Vanderschueren et al[3] reported 4.1%, De Kleijn et al[4] reported 1.7%, Knockaert et al[5] had 1.5% and Zenone et al[6] reported 0.69% cases of tuberculosis respectively. While tuberculosis remains an important cause of FUO in India. Handa et al[7] reported 43.8% cases of tuberculosis, among these 21% cases were extrapulmonary, Bandyopadhyay et al,[8]Kejriwal et al[9] and Jung et al[10] reported 28%, 24% and 11.1% cases of tuberculosis respectively. In our study also tuberculosis was the leading cause of FUO, as it was in other Indian studies. For the diagnosis of tuberculosis, we depended on sputum examination, montoux test, chest X-ray and ADA levels. Also in some cases, a therapeutic trial with anti- tubercular drugs was used. Thus the approach to a case of fever in our country should always include infectious cause, in particular tuberculosis.

Conclusion

Imaging studies was helpful tool for FUO diagnosis

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