NEWSPAPER POST

TheSynapse
The Medical Professionals' Network

MEDICAL IMAGING

Tuberculosis

by Pierre Vassallo
MD PhD FACA Artz für Radiologie
Consultant Radiologist

Till the mid 1980s, there was a steady decline in the prevalence of tuberculosis. Since that time, however, there has been a resurgence of tuberculosis due to the acquired immunodeficiency syndrome (AIDS) epidemic and the increasing number of drug-resistant strains of *Mycobacterium tuberculosis.*

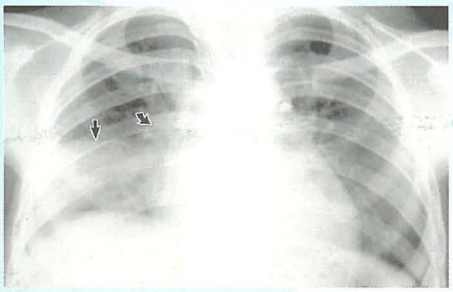

Figure 1. *Chest X-ray shows right middle lobe infiltrate (straight arrow) and right hilar lymphadenopathy (curved arrow).*

Figure 2. *CT scan shows bilateral hilar TB lymphadenopathy.*

Figure 3. *CT scan showing military lung opacities.*

In addition to immuno-compromised individuals, other population groups who are at increased risk include minorities, the poor, alcoholics, immigrants from third world countries, prisoners, the aged, nursing home residents and the homeless.

Although manifestations of tuberculosis are usually limited to the chest, the disease can affect any organ system and in patients infected with human immunodeficiency virus usually involves multiple extrapulmonary sites including the skeleton, genitourinary tract and central nervous system.

Pulmonary tuberculosis is classically divided into *primary* and *postprimary* (reactivation) tuberculosis. There is considerable overlap in the radiologic manifestations of these two entities.

Although primary tuberculosis is the most common form of pulmonary tuberculosis in infants and children, it accounts for 23%–34% of all adult cases of tuberculosis.

Primary tuberculosis typically manifests radiologically as parenchymal disease (Figure 1), lymphadenopathy (Figure 2), pleural effusion, miliary disease (Figure 3), or atelectasis. Chest radiography may be normal in 15% of cases. Miliary opacities may also indicate varicella pneumonia, sarcoidosis, histoplasmosis, metastases, pneumoconiosis, or hemosiderosis.

Postprimary disease results from reactivation of a previously dormant primary infection in 90% of cases; in a minority of cases, it represents continuation of the primary disease. Postprimary tuberculosis is almost exclusively a disease of adolescence and adulthood.

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The radiologic features of postprimary tuberculosis can be broadly classified as parenchymal disease with cavitation (Figure 4), airway involvement (Figure 4), pleural extension, and other complications. Central airway involvement in tuberculosis can be the result of direct extension from tuberculous lymph nodes,

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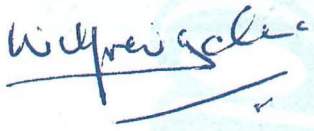
Editor's Word

Hello and welcome to the second issue of TheSYNAPSE Magazine for this year. In this issue we have a number of articles focusing on **Infections**. The Medical Imaging Article deals with **Tuberculosis**, a condition that, up till the 80's was on the decline, but now is again re-emerging as an important, often forgotten illness we all have to be aware of especially because of atypical modes of presentation. Other articles dealing with infections include articles on **Community Acquired MRSA infections, Pharmacokinetics of Antiviral agents indicated in Influenza, Paediatric Urinary Tract Infections** as well as an **Update on the Current Status of the Avian Influenza**. We also bring you review articles on **Management of Depression** and **Migraine**. The **MoneyWise** article in this issue gives a useful insight on the performance of the Maltese Stock Market.

May I once again thank all members of staff and advertisers for making this issue yet another success.



TheSynapse Magazine is published by Medical Portals Ltd. The Professional Services Centre, Guzi Cutajar Street, Dingli, Malta.

Editor: Dr Wilfred Galea
Scientific Editor: Ian C. Ellul

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Tuberculosis

Figure 4. *CT scan showing cavitation (straight arrows) and tranbronchial spread of infection (curved arrow).*

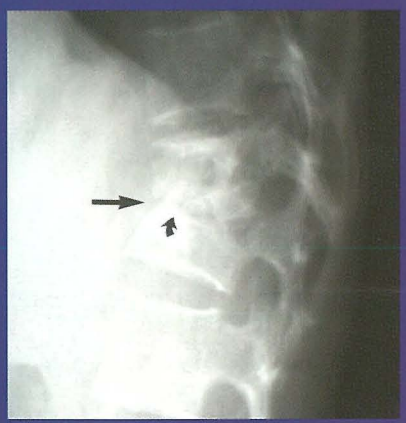

Figure 5. *X-ray showing tuberculous spondylodiscitis with lytic (straight arrow) and sclerotic (curved arrow) areas.*

Figure 6. *CT scan showing thickening of the caecal wall due to tuberculosis.*

Figure 7. *CT scan showing tuberculous nephritis with gross parenchymal destruction and intra (straight arrow) and extra-parenchymal (curved arrow) abscesses.*

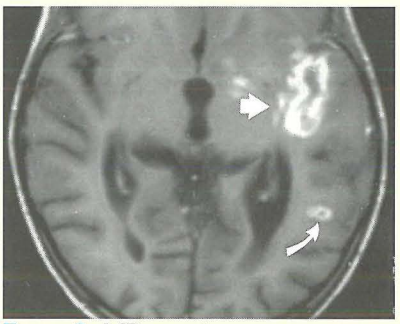

Figure 8. *MR scan showing contast enhancement in the left sylvian fissure (straight arrow) and in the sulci (curved arrow) due to tuberculous meningitis.*

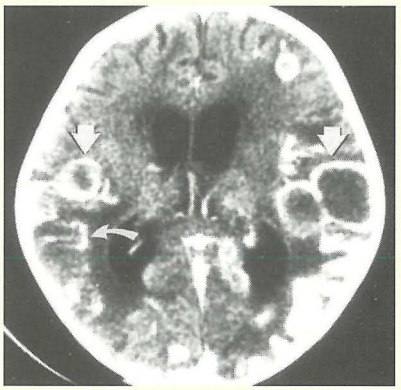

Figure 9. *CT scan showing cerebral solid (curved arrow) and cavitating (straight arrow) tuberculomas with calcification.*

endobronchial spread of infection, or lymphatic dissemination to the airway. Bronchial stenosis may result with persistent segmental or lobar collapse, lobar hyperinflation, obstructive pneumonia, or mucoid impaction.

The spine is the most frequent extrapulmonary site of osseous involvement in tuberculosis, with the upper lumbar and lower thoracic spine being involved most frequently (Figure 5). More than one vertebra is typically affected, and the vertebral body is more commonly involved than the posterior elements. Osteomyelitis and septic arthritis may occur anywhere in the skeleton.

Gastrointestinal TB is uncommon but most commonly affects the ileocecal region due to the abundance of lymphoid tissue (Figure 6). Urinary tract TB affects the kidneys, ureters and bladder with resulting scarring, deformity and calcification (Figure 7).

Most tuberculous infections of the central nervous system are a result of hematogenous spread. Intracranial tuberculosis results in two related pathologic processes: tuberculous meningitis (Figure 8) and intracranial tuberculomas (Figure 9).

Less common sites involved with tuberculosis include the middle ears structures, the eyes (retinitis) and the heart (pericarditis and rarely myocardial tuberculomas).

In conclusion, tuberculosis can affect virtually any organ system in the body and can be devastating if left untreated. The increasing prevalence of this disease in both immunocompetent and immunocompromised individuals makes tuberculosis a topic of universal concern.

Dr Pierre Vassallo can be reached at the Medical Imaging Centre on 21 491 200 or by email on pvassallo@mic.com.mt