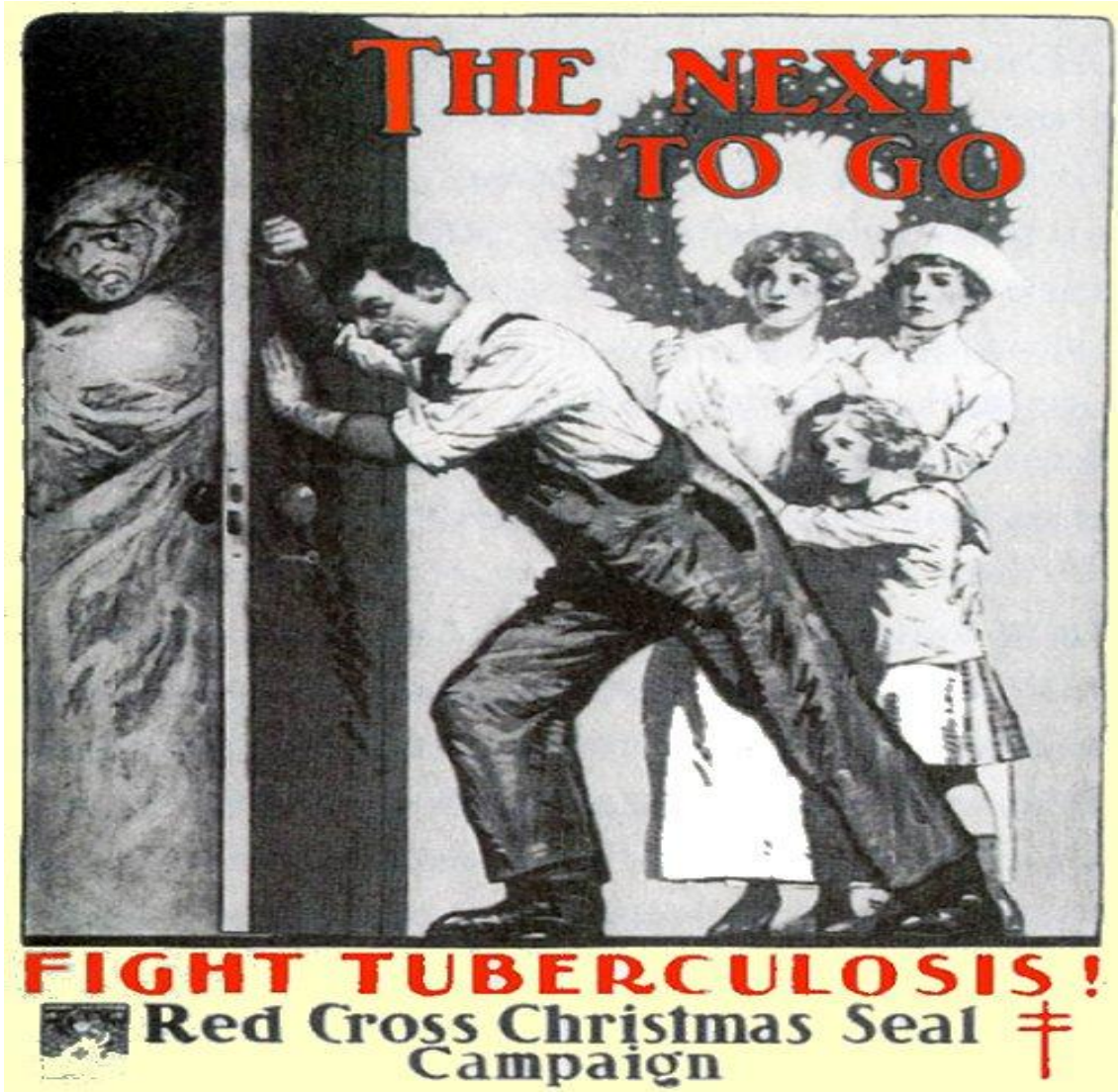
Tuberculosis



TB is the most infectious disease in the world with an estimation of 1/3 of population infected & 2.5 million deaths annually.

If untreated, fatal in over 50% of cases

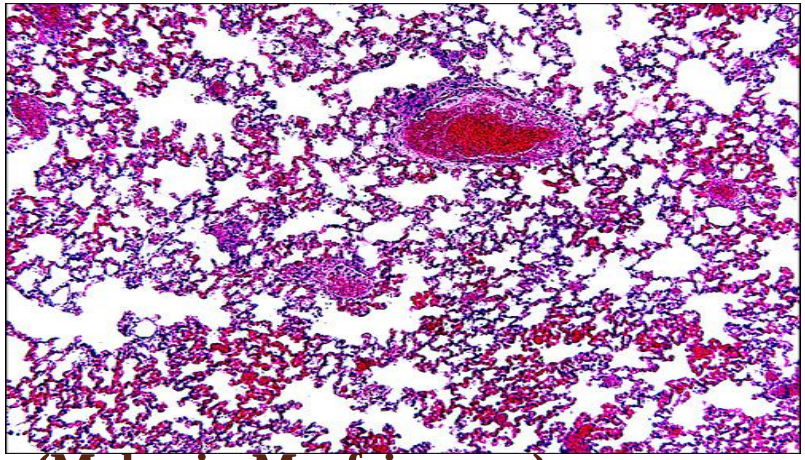
It was isolated by Robert Koch in 1882

Risk factors for increasing TB among developing countries:

***ineffective control programs.**
***lack of access to health care.**
***poverty, civil unrest.**
***HIV.**
***population increase.**
***drug resistance.**

While risk factors for increasing TB in developed countries:

*immigration from high-prevalence areas.
*HIV.
*social deprivation(homeless, poverty).
*increasing proportion of elderly.
*drug resistence.



()Organism:

A- mycobacterium tuberculosis complex(M. bovis, M. africanum).
B- opportunistic mycobacterium (M. kansasii, M. xenopi etc…)

() Pathology & pathogenesis:

*smallest particles (1-5 Mm) enter the periphery of the lung & are engulfed by MQ
*in response to antigen, CD4 T lymphocyte produce interferon gamman that lead to recruitment of monocytes & formation of granuloma (tuberculous caseous granuloma).
*this mass of granuloma called “Ghon focus”.

*Ghon focus + regional LN termed as Ghon complex.
*occasionally , the tonsil, intestine or skin may be the site of primary disease.
*in 85-90% healing occur in 1-2 months, TST become +.
*in 10-15% lymphatic spread to pleura, pericardium, & pulmonary blood vessels (miliary, meningeal, bone, GIT).
*In immunodeficiency like HIV patients: more likely to
()extrapulmonary & dissemeneted.
()reduced smear-positive rates.
()less cavitation.
()atypical CXR.
()adverse drug reaction.

()predisposing factors to TB:

@ pateint related:

*age .

*first-generation immigrants from high-prevalence TB.

*close contact to smear +ve pulm TB.

*drug abuse

*overcrowding.

*CXR evidence with self-healed TB.

*had primary infection < 1 year.

@ associated disease:

*immunosuppression: HIV, infximab, CS,.

*Mlignancy.

*type I dm.

*CRF.

*silicosis.

*gastrectomy, malabsorption.

*deficiency of Vit D OR A

() Timetable of TB:

1- first 3-8 weeks: +ve TT, erythema nodusum, fevers, phlyctenular conjuctivitis.
2- after 3-8 weeks: CXR show primary Ghon complex.
3- after 3-6 months: meningeal, miliary, pleural, pericardial.
4- up to 3 years: GIT, bone, joint,.
5- after 5 years: skin involvment.
6- around 8 years: renal tract diseases.
7- from 3 years on wards: post-primary disease

() clinical features: divided into:

pulmonary & nonpulmonary

regarding pulmonary divided into:

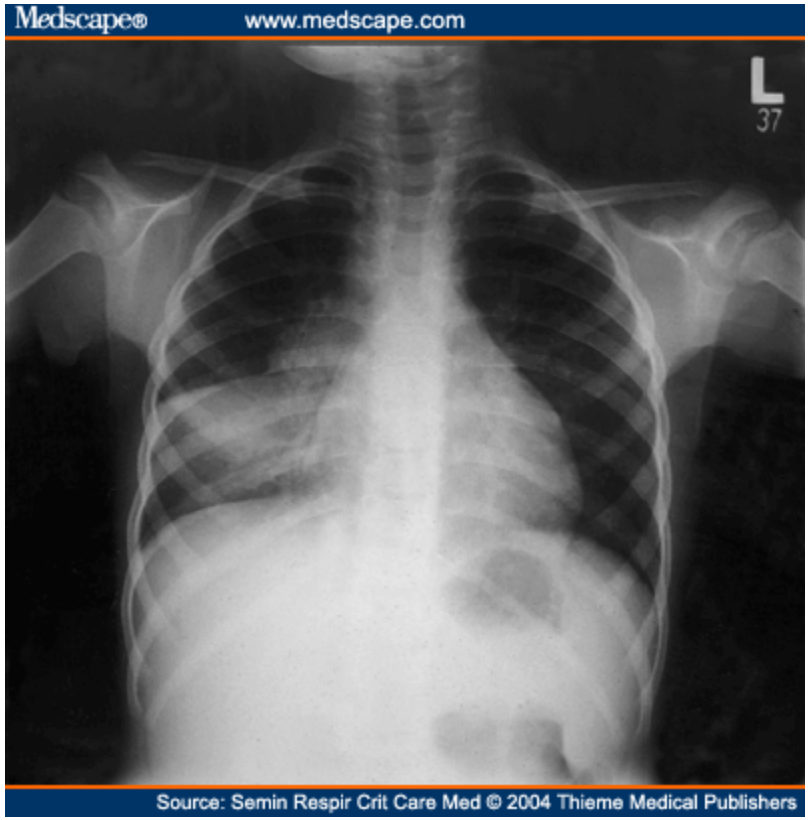
primary pulmonary

post primary

miliary

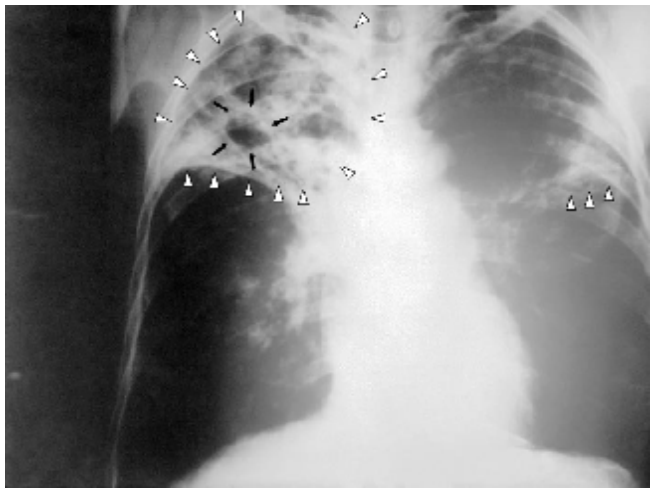
() primary pulmonary TB:

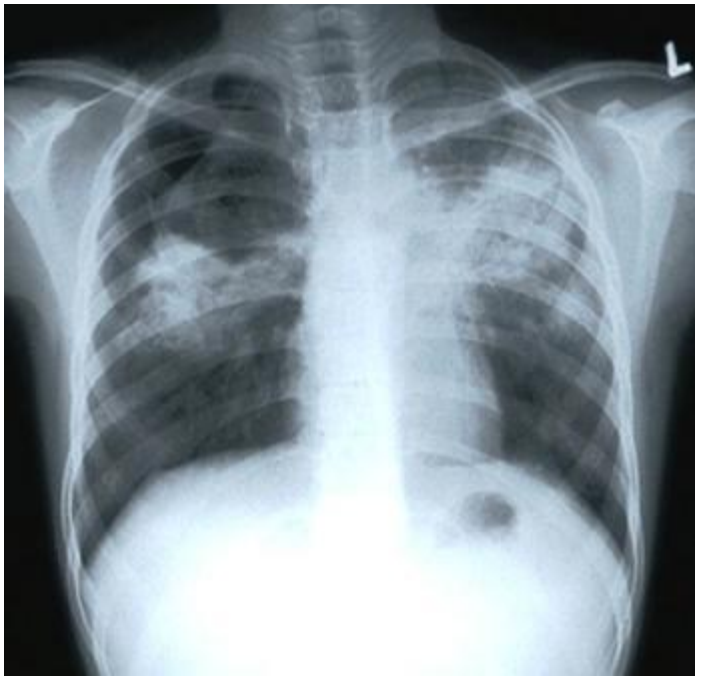
*refere to infection in previosly uninfected individual.
*usually occur in childhood.
*generally asymptomatic.
*a history of contact with active pulmonary TB
*clinical features include:
@infection(4-8 weeks)
influenza-like illness.
+ve TT
CXR primary complex.
@disease: LAP, collapse, consolidation(RT middle lobe) cavitation, pleural effusion, miliary, pericarditis, erythema nodosum, phlyctenular conjuctivitis.



() post primary TB:

***Is the most form of TB in adults.**
***typically insidoius. With fever, night sweating, maliase, anorxia, wt loss.**
***the disease often involves 2 or more areas of lung: opacity in upper lobe, consolidation, collapse, cavitation, miliary, pleural effusion,.**
***you should suspect post primary TB in:**
()chronic cough often with hemoptysis.
()PUO
()unresolved pn.
()exudative pleural effusion.
()wt loss.
()spontenous pneumothorax.



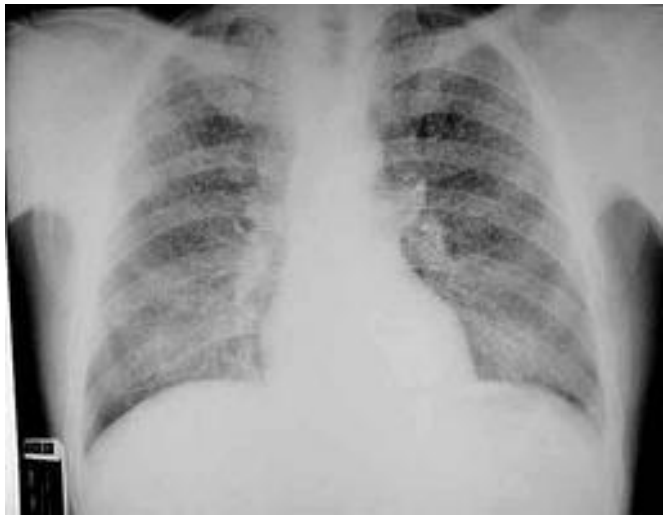


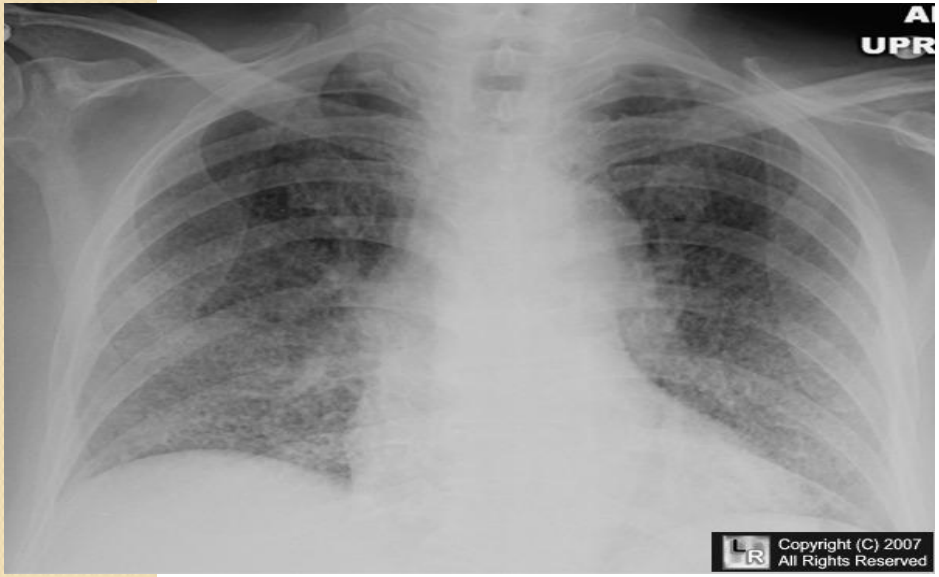
Miliary TB:

*** Arise from blood dissemination.**
***presentes with 2-3 weeks (puo) of fever, night sweat, anorxia, wt loss, dry cough. Hepato splenomeagally,**
*** ascultation of chest usually normal.**
***fundoscopy reveal choroidal tubercles.**
***anemia, & leucopenia.**

The term cryptic miliary TB presented as:

***age > 60 years.**
***intermittent low-grade fever, PUO.**
***unexplained wt loss.**
***normal CXR**
***leukmiod reaction, pancytopnea.**
***confirmed by biopsy.**





Extra-pulmonary TB:

() Lymphadenitis:

***most common site cervical , mobile , painless matted togther to form caseation "collar-stud" abscess & sinus formation.**
***TT strongly +ve, M. avium complex.**

() GIT:

1- rarly involve tounge.
2- iliocecal 50% present as fever, wt loss, RIF mass.
3- up to 30% as acute abdomen.
4- mesentric adenitis & intestinal obstruction.
5- tuberculous peritonitis.
6- anorectal ulceration.
7- hepatic dysfunction.
8- DX --- U/S or CT may reveal thickend bowel wall abd LAP.
BIOPSY is defenitive test.

FIGURE 1: Lesion in tongue dorsum and lateral border, exhibiting deep and necrotic ulceration, with large infiltration in surrounding tissues

() pericardial disease:

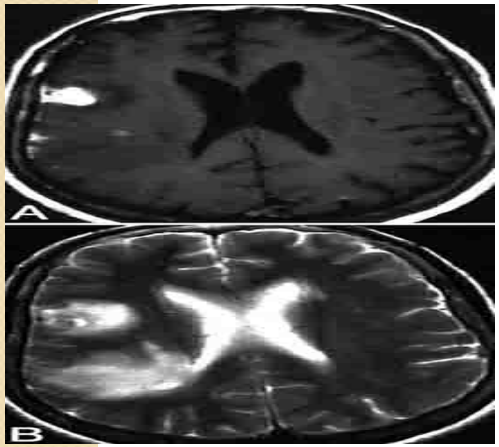
pericardial effusion, constrictive pericarditis.

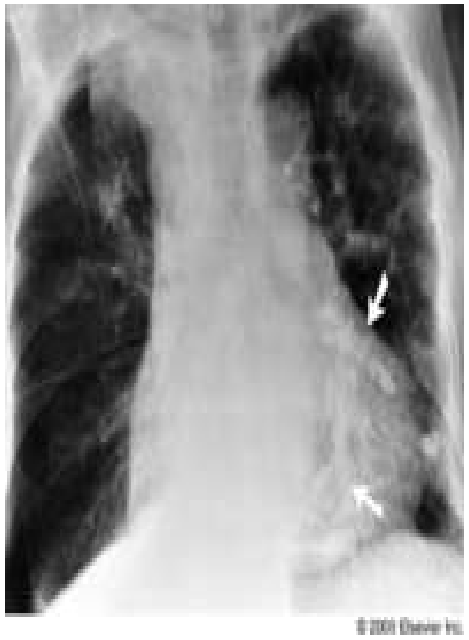
Pericardial calcification.

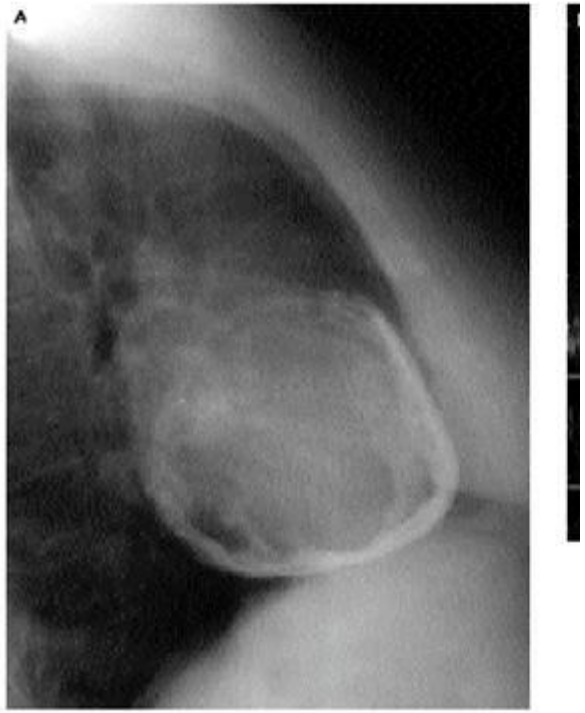
()CNS:

1- lymphocytic meningitis, hydrocephalus & tuberculoma.

2- CN palsy.







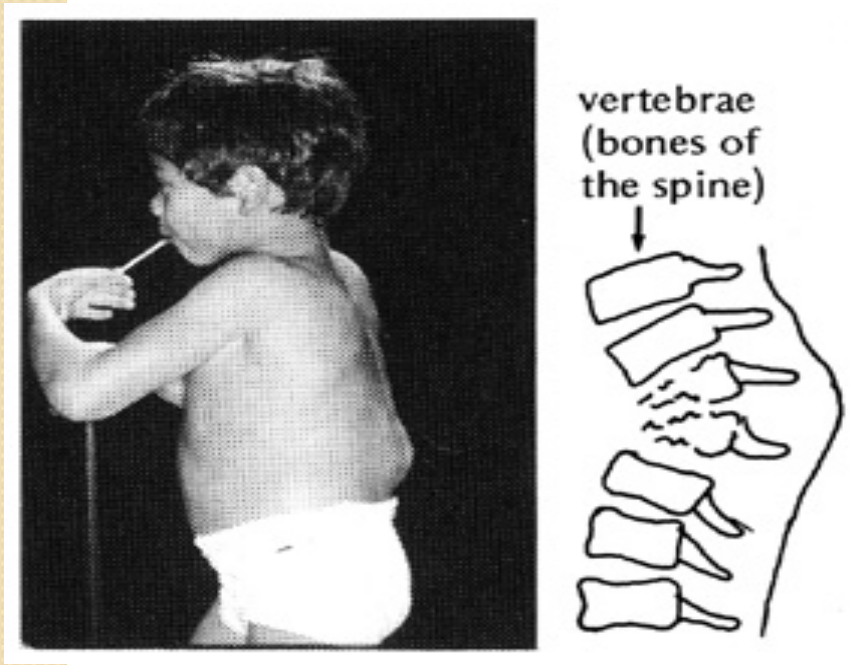
() bone & joint diseases:

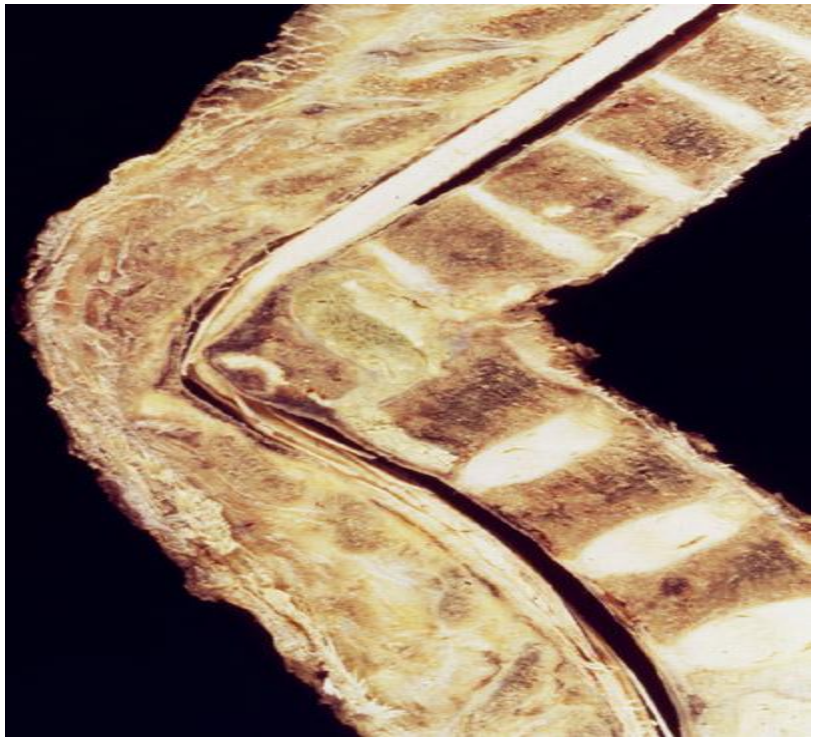
1- pott's disease: the spine most common typically involve lower thoracic & lumbar spine.

The infection starts as diskettes then spread to spinal ligament to involve ant vertebral bodies causing angulations with subsequent kyphosis.

2- par vertebral &psoas abscess.

3- TB can affect any joint (hip & knee)





()GUT:

1- Asymptomatic remains years.

2- sterile pyurea.

3- endometritis, epididymitis, prostatis.

()dermatology:

lupus vulgaris & erythema nodosum.