# Challenges in diagnosis and treatment of tuberculosis in surgical practice



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## Layout

- Introduction
- Diagnostic and treatment challenges
- Illustration of challenges using sites of surgical TB
- How to deal with the challenges
- Take home messages

## Introduction

- Tuberculosis is a worldwide problem and approximately a third of the world population is affected.
- Incidence is increasing due to HIV and AIDS
- Surgeons are primarily involved in patients presenting with extra-pulmonary tuberculosis
- Extra-pulmonary tuberculosis is more prevalent in patients with AIDS.

# Pathogenesis

- The predominant causative organism is Mycobacterium tuberculosis even in patients with HIV and AIDS.
- The infection can be primary or reactivation of dormant disease.
- Spread to organ involved is via one of the following:
- ✤ Haematogenous
- ✤ Lymphatic
- Contiguity
- ✤ Swallowing
- ✤ Fallopian tubes

# •Diagnostic and treatment challenges in surgical practice?

# Challenges in surgical practice

#### **Diagnostic challenges**

- Missed diagnosis
- Symptoms are non-specific
- Clinical presentation mimics common surgical conditions
- Imaging results frequently also mimic changes associated with common surgical diseases
- Concomitant pulmonary TB is rare
- Accuracy (false negative diagnostic tests)
- Extra-pulmonary TB while already on anti-TB.

### **Treatment challenges**

- Management of diagnostic dilemmas
- Poor surgical risk patient
- Appropriate surgical intervention
- High morbidity and mortality associated with surgical intervention
- When to start anti-retroviral therapy in TB in HIV positive patients
- Immune reconstitution inflammatory response

# Extra-pulmonary TB primarily for surgeons

- Abdominal
- Iliopsoas
- Perianal
- Breast
- Thyroid

## Abdominal tuberculosis

- It is the 6<sup>th</sup> most frequently involved extra-pulmonary sites
- Structures which can be involved include intestines, lymph nodes, liver, spleen, pancreas and perianal area
- The ileocaecal region is the most frequently involved intraabdominal site
- ✓ Sharma et al, 2004. Indian Journal of Medical Research 120: 305-315

## lleocaecal TB: diagnostic challenges

- Non-specific symptoms: abdominal pain, weight loss, diarrhea, fever, etc.
- Imaging findings may mimic
- Complicated appendicitis
- Carcinoma of the caecum
- ✓ Symmetrical thickening of bowel (however may be asymmetric)
- ✓ Young patients (30-40 years)

### Crohn's disease

- Orientation and depth of ulcers
- ✓ Involvement of both sides of ileocaecal valve
- ✓ Well developed granulomas on multiple deep biopsies (immune status in HIV/AIDS)

### Lymphoma

### Ileocaecal TB: treatment challenges

- Indications for laparatomy
- ✤ Complete intestinal obstruction
- Perforation
- Diagnostic dilemma
- Consideration
- Patient status
- Type of complication



# **Ileocaecal TB: advices**

- Diagnostic dilemma
- Diagnostic laparoscopy
- Empirical anti-TB

#### Intestinal perforation

- ✤ Resection and primary anastomosis or diversion
- \* Not for primary repair because of high incidence of associated distal obstruction
- **Complete obstruction** (stricture, adhesions or intussusception)
- Resection
- Partial obstruction
- Stricturoplasty
- Igbal et al, 2008. Pakistan Journal of Surgery 24: 177-181

### Peritoneal TB: Diagnostic challenges

• Non-specific presentation: ascites and adhesions

### Mimicker

\* Advanced ovarian malignancy (ascites and pelvic mass)

### Diagnostic dilemma

- Negative PPD, microscopy and culture for AFBs
- Unavailability of ADA, PCR and diagnostic laparascopy
- ✤ Markedly elevated CA-125.

# Peritoneal TB: advice

### • Diagnostic dilemma

- $\clubsuit$  Diagnostic laparoscopy or (laparatomy) and biopsy
- Careful entry into peritoneal cavity (adhesions and matted bowel)
- Frozen section for suspected advanced ovarian malignancy before radical surgery
- Empirical anti-TB treatment
- ✓ Patel et al, 2012. The Journal of Obstetrics and Gynaecology of India 62: 176-178

# Hepatopancreaticobiliary TB: diagnostic challenges

- Similar non-specific presentation for e.g. obstructive jaundice
- Diagnosis is often made post surgical resection
- Space occupying lesions in the liver, pancreas, gall bladder and peri-pancreatic or -choledochal lymphadenopathy

### • Mimics

- Pancreatic neoplasms: cystic and solid
- Hypoechoic and irregular mass
- Enlarged lymph nodes

### • Similarly

- Space occupying lesions of the liver
- Bile duct strictures and enlargement of surrounding lymph nodes
- Gall bladder tumours and polyps
- NB. False negative tests including microscopy of bile for AFBs

# Hepatopanceaticobiliary TB: advice

- High index of suspicion and FNA
- Young patients
- Unusually extensive disease
- Routine tissue diagnosis (confirmation of malignancy) in patients suspected to be having advanced malignancy.
- Careful entry into peritoneal cavity (adhesions and matted bowel)
- Frozen section for suspected advanced ovarian malignancy before radical surgery
- ✓ Patel et al, 2012. The Journal of Obstetrics and Gynaecology of India 62: 176-178



# Breast TB: diagnostic and treatment challenges

- Pathogenesis: majority are due to retrograde spread from axillary TB lymphadenitis which is concurrent in 50-70%.
- Lactating patients are more susceptible
- Clinical presentation: breast lump, ulceration, nipple discharge, swollen breast, sinuses, etc.

### Mimicker

- Nodulocaseous: breast carcinoma or fibroadenoma
- Disseminated (confluent) mastitis: inflammatory breast carcinoma

#### ✤ TB abscess

- Advice: High index of suspicion. Young patient and "too extensive cancer". FNAC and nipple discharge for AFB.
- Mehta et al, 2010. Indian Journal of Surgery 72: 433-437

### Anorectal tuberculosis

- Suppuration, fistulae and rectal strictures
- >12% of anorectal fistula: complex, multiple or resistant to treatment
- Mimics: Usual crytoglandular fistulae, Crohn's disease and malignancy
- Advice: Routine biopsy
- Gupta, 2005. African Health Sciences 5: 345-347.

# Other surgical TBs: challenges and advices

• Tuberculosis of the spleen: Image guided biopsy. Splenectomy

followed by anti-TB drugs

- Oesophageal TB: Middle 1/3 oesophageal ulceration. Treatment with anti-TB drugs
- Gastroduodenal TB: Mimics peptic ulcer and gastric malignancy

(Mukhopadhyay et al, 2010. Indian Journal of Surgery 72: 412-413)



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### ORIGINAL SCIENTIFIC REPORTS

# Tuberculosis of the Thyroid Gland: Review of the Literature

Ertan Bulbuloglu,<sup>1</sup> Harun Ciralik,<sup>2</sup> Erdogan Okur,<sup>3</sup> Gokhan Ozdemir,<sup>4</sup> Fikret Ezberci, Ali Cetinkaya<sup>6</sup>

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# Thyroid TB: diagnostic and treatment challenges

- It was considered highly unlikely but is becoming more prevalent
- Clinical presentation is non-specific
- Can mimic thyroid cancer, multinodular goitre, thyroiditis, thyroid abscess, etc.
- Imaging findings are not specific
- FNAC is diagnostic
- Definitive treatment is anti-TB drugs
- Advice: high index of suspicion

### Treatment of TB

- Anti-TB drugs for 6-9 months
- Watch for paradoxical response
- Early introduction initiation of anti-retroviral therapy in HIV positive patients associated with greater than 56% reduction of mortality
- Fear of immune reconstitution inflammatory syndrome is exaggerated



#### ORIGINAL ARTICLE

#### Timing of Initiation of Antiretroviral Drugs during Tuberculosis Therapy

Salim S. Abdool Karim, M.B., Ch.B., Ph.D., Kogieleum Naidoo, M.B., Ch.B., Anneke Grobler, M.Sc., Nesri Padayatchi, M.B., Ch.B., Cheryl Baxter, M.Sc., Andrew Gray, M.Sc. (Pharm.), Tanuja Gengiah, M.Clin.Pharm., M.S. (Epi.), Gonasagrie Nair, M.B., Ch.B., Sheila Bamber, M.B., Ch.B., Aarthi Singh, M.B., Ch.B., Munira Khan, M.B., Ch.B., Jacqueline Pienaar, M.Sc., Wafaa El-Sadr, M.D., M.P.H., Gerald Friedland, M.D., and Quarraisha Abdool Karim, Ph.D.

#### ABSTRACT

#### BACKGROUND

The rates of death are high among patients with coinfection with tuberculosis and the human immunodeficiency virus (HIV). The optimal timing for the initiation of antiretroviral therapy in relation to tuberculosis therapy remains controversial.

#### METHODS

In an open-label, randomized, controlled trial in Durban, South Africa, we assigned 642 patients with both tuberculosis and HIV infection to start antiretroviral therapy either during tuberculosis therapy (in two integrated-therapy groups) or after the completion of such treatment (in one sequential-therapy group). The diagnosis of tuberculosis was based on a positive sputum smear for acid-fast bacilli. Only pa-

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# Take home message

- Incidence of extra-pulmonary TB is rising
- Diagnosis is often either unsuspected or delayed because TB mimics common surgical diseases clinically and on imaging findings
- Diagnostic laparoscopy with peritoneal biopsy are indicated if in doubt
- Surgical intervention in patients with abdominal TB is indicated for complications or diagnostic dilemma.
- Suspected clinical Stage IV cancer must always await histopathological confirmation

• Thank you