On receipt of several requests to cover Leprosy, we have done so in this issue and laid it threadbare for you. Henceforth, you should have no hiccups while dealing with cases of Hansen’s disease. All relevant clinico-diagnostic aspects are entertained. A detailed classification correlating clinical picture with diagnostic findings has been considered in ample depth. Leprosy even till date occupies an important platform in developing countries as far as communicable diseases are concerned. Though absolutely curable if diagnosed early, the deforming complications too can be prevented. Newer diagnostic tools like PCR here too come to the rescue of a diagnostician. A laboratarian has a tremendous role to play (though this role mostly goes unsung, all the credit goes to the person who writes the therapeutic regimen).

INTERPRETATION segment interprets hyperbilirubinemia and urinary/fecal urobilinogen for you. A detailed aetiological classification is provided. This would definitely assist in identifying the cause of jaundice when read in conjunction with reports of other parameters.

All the processes conducted in a diagnostic medical laboratory commence with the specimen preparation. The TROUBLE SHOOTING section profusely outlines all problems that can be encountered while handling clinical samples. It tells you how to prepare all clinical samples before you start the diagnostic exercises. They say first things first. The first thing in our clinical practice is the sample preparation.

BOUQUET is there as usual. We do not laugh at others, we laugh at our usual behaviours and ourselves. A little advise from the great people who said great things. And lastly few haematological questions to tickle your brain under Brain Teasers.

Happy Reading! Any topics of interest to you in particular, we’ll be more than pleased to cover them in our forthcoming issues.
DISEASE DIAGNOSIS

LEPROSY (HANSEN’S DISEASE)

Description
Leprosy is a chronic granulomatous infectious disease caused by the acid-fast bacteria Mycobacterium leprae. The disease is characterized by disfiguring skin lesions, peripheral nerve damage, and progressive disability, which has led to its victims being ostracized from their families and communities. Leprosy was recognized in ancient civilizations of China, Egypt, and India. It is the oldest known entwined disease. It is the major cause of blindness, leprosy and leprosy complications resulting in the mental and physical wellbeing of affected individuals. It is estimated that 20,000 to 200,000 new cases of leprosy are detected each year worldwide. It is estimated that 50% of patients have a history of intimate contact with an infected person, usually a household member. Tuberculoid leprosy is not highly infectious, untreated leprosy patients harbor large number of M. leprae in their nasal mucosa and anasarca.

Contributory or predisposing factors
Although the majority of leprosy cases are spread, the greatest risk factor for leprosy is household contact with untreated or weakly treated patients. The risk for household contacts of indeterminate leprosy patients is 10% higher. The risk for 1-2-fold higher for leprosy skin lesions patients and for those with rare forms of leprosy. These forms are more common in borderline forms of the disease and may be associated with a human disease. It is estimated that 50% of patients have a history of intimate contact with an infected person, usually a household member. Tuberculoid leprosy is not highly infectious, untreated leprosy patients harbor large number of M. leprae in their nasal mucosa and anasarca.

Epidemiology
Incidence In 2014, around 120,000 new cases of leprosy were detected worldwide, of which 60% were in Asia, including South and Southeast Asia, where incidence is highest. The incidence of leprosy varies from country to country, with the highest incidence in India, where it is estimated that 10,000 new cases are diagnosed each year. In addition, leprosy is endemic in many countries in Africa and South America. Leprosy is not highly infectious, untreated leprosy patients harbor large number of M. leprae in their nasal mucosa and anasarca.

Background
The clinical features of leprosy are determined by the host's immunopathologic response to the infection. In general, one third of patients have no skin lesions, and biopsy may be necessary in order to distinguish lepromatous from tuberculoid forms of leprosy, which may result in sterilization of the lesion and therefore a reduced risk of dissemination.

Leprosy (TT): this is the most common form of the disease, with large numbers of M. leprae in the skin and/or peripheral nerves. In this form, the skin lesions are numerous, red, irregular plaques that spread to the eyelashes, and then the trunk. The scalp hair remains intact. The skin lesions are usually not hypesthetic, and biopsy may be necessary in order to distinguish tuberculoid from lepromatous forms of leprosy. However, it is important to note symptoms and signs of nerve involvement in other organs, such as the eyes, ears, nose, and mouth, that may result in sterilization of the lesion and therefore a reduced risk of dissemination.

Signs of tuberculosis: in this stage, cutaneous lesions are numerous, red, irregular plaques that spread to the eyelashes, and then the trunk. The scalp hair remains intact. The skin lesions are usually not hypesthetic, and biopsy may be necessary in order to distinguish tuberculoid from lepromatous forms of leprosy. However, it is important to note symptoms and signs of nerve involvement in other organs, such as the eyes, ears, nose, and mouth, that may result in sterilization of the lesion and therefore a reduced risk of dissemination. In this stage, cutaneous lesions are numerous, red, irregular plaques that spread to the eyelashes, and then the trunk. The scalp hair remains intact. The skin lesions are usually not hypesthetic, and biopsy may be necessary in order to distinguish tuberculoid from lepromatous forms of leprosy. However, it is important to note symptoms and signs of nerve involvement in other organs, such as the eyes, ears, nose, and mouth, that may result in sterilization of the lesion and therefore a reduced risk of dissemination. In this stage, cutaneous lesions are numerous, red, irregular plaques that spread to the eyelashes, and then the trunk. The scalp hair remains intact. The skin lesions are usually not hypesthetic, and biopsy may be necessary in order to distinguish tuberculoid from lepromatous forms of leprosy. However, it is important to note symptoms and signs of nerve involvement in other organs, such as the eyes, ears, nose, and mouth, that may result in sterilization of the lesion and therefore a reduced risk of dissemination.

Common causes of leprosy are caused by chronic infection with M. leprae, an acid-fast bacterium that is not highly infectious. This is characteristic of all tuberculoid forms, which are more common in borderline forms of the disease and may be associated with a human disease. It is estimated that 50% of patients have a history of intimate contact with an infected person, usually a household member. Tuberculoid leprosy is not highly infectious, untreated leprosy patients harbor large number of M. leprae in their nasal mucosa and anasarca.

Diagnosis
Clinical presentation: the classic clinical presentation of leprosy is multifocal nodules or plaques that are erythematous and painful. These nodules or plaques are usually asymptomatic, but may be painful when pressure is applied. The nodules or plaques are usually not hypesthetic, and biopsy may be necessary in order to distinguish tuberculoid from lepromatous forms of leprosy. However, it is important to note symptoms and signs of nerve involvement in other organs, such as the eyes, ears, nose, and mouth, that may result in sterilization of the lesion and therefore a reduced risk of dissemination.

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A sexually transmitted disease caused by Treponema pallidum. The incubation period is variable, but may be as long as 10 years. Early syphilis is characterized by the presence of noncaseating granulomas. It can mimic several other diseases.

**Features:**
- **Regional:**
  - Alopecia
  - Painless lymphadenopathy
- **Systemic:**
  - Fatigue
  - Generalized lymphadenopathy
  - Oral ulcers

**Diagnosis:**
- **Clinical:**
  - Examination of the skin, throat, and lymph nodes
- **Laboratory:**
  - Serologic tests:暗视野显微镜, fluorescent treponemal antibody absorption (FTA), and indirect immunofluorescence (IFA)
  - Dark-field microscopy: visualization of the characteristic spirochetes

**Treatment:**
- **Penicillin G:**
  - Benzathine penicillin G 2.4 million units intramuscularly in a single dose
  - Oral penicillin V 1.2 million units daily in four divided doses for 10 days

**Complications:**
- Neurosyphilis
- Cardiovascular syphilis
- Ocular syphilis
- Gastrointestinal syphilis

**Prevention:**
- Use condoms during sexual activity
- Screen newborns for congenital syphilis
- Treat all sexual partners

**Notes:**
- Untreated syphilis can lead to serious long-term complications.
SEP/OCT

FROZEN SPECIMENS:

Urine, Drugs of Abuse (DAU):

Urinalysis:

CHEMISTRY, HEMATOLOGY AND MISCELLANEOUS routine tests and submit a separate test request form. As soon as possible

Stability of the analyte being tested. Keep all frozen specimens separate from the

Refrigerate the specimen as soon as possible. Otherwise sample may be

Pour the specimen into the Boricon. Use the stabilizing chemical provided. Some

To adequately test urine specimens the sample should be collected in

There are no additives. Refer to the specific test in

a tube with a stabilizing chemical present. The tube provided contains a yellow

Certain tests must be submitted frozen because of the

Directions for sending Fluids (Collected or Aspirated):

3. Fluids: Add directly to fixative supplied in special container.

3. Fluids in contact with red cells will produce erroneously high Potassium, LDH,

1. Clean the skin overlaying the mass with an antiseptic

5. Before withdrawing the needle from the lesion, the suction must be

3. Fix immediately with cytology spray fixative from a distance of 10 - 12

4. The cell sample should remain in the needle and should not be visible in the

2. Treat the specimen as in blood (above)

1. Transparent mounting medium

5. Before applying the mounter device, place a drop of the

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