Sputum

Sputum is bronchial secretions hyperlinks utilized to clean the respiratory passages from foreign substances and microbes outstanding defensive and the immunological It is an aqueous liquid represents the percentage of water 95% water and the remaining material plasma, mucus, normal flora , Immune cells defensive and sometimes it contains some solids

You must consider the following when sputum sample collection

1. The mouth wash is first to remove sputum

2-preferred collection of sputum in the early morning because the pulmonary secretions may be gathered through the night

3-You may have to use sensitizers especially for cough in children, such as Nacl a 10% concentration of solution or distilled water or a solution bond existing between the mucus that works on breaking Disulfide bubbles pneumatic components interlocutor raises a person to cough to get rid of them.

4. Collect sputum in a sterile Petri and blends in with sticks, wooden, sterilized in preparation for examination.

Examinations

Physical examination

Consistency and Appearances: Natural sputum aqueous composition colorless and clear, and the existence of any glamor which means the presence of substances Phones in abeyance in him and in pathological cases, Mucoid, Purulent, Bloody, mucopurulent

Color: normal colorless

Abnormal

Yellow: pus cells and pneumonia

Greenish: pseudomonas

Rust: It means the decomposition of hemoglobin and oxidant to the presence of bacterial pneumonia

Bright red: hemorrhage Injury or acute pulmonary malignant tumor cause

Odour: normal odorless

Pathology

Putrid: Gangrene

Fecal odour: liver abscess

Microscopic examination

-stained film:

1-Prepare bacterial smear on clean and grease free slide, using sterile technique.

2-Allow smear to air dry and then heat fix..

3- Cover the smear with carbol fuchsin stain.

4-Heat the stain until vapor just begins to rise (i.e. about 60 C). Do not overheat. Allow the heated stain to remain on the slide for 5 minutes.

5- Wash off the stain with clean water.

6-Cover the smear with 3% v/v acid alcohol for 5 minutes or until the smear is sufficiently decolorized, i.e. pale pink.
7- Wash well with clean water.

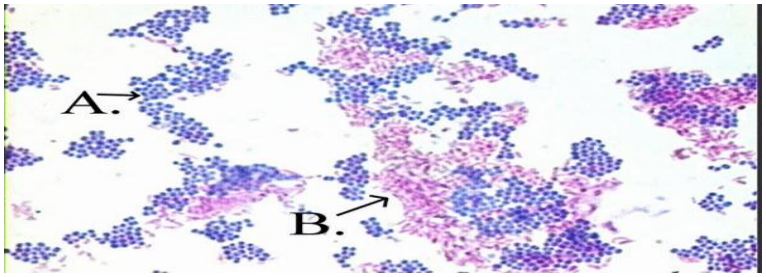
8- Cover the smear with malachite green stain for 1–2 minutes, using the longer time when the smear is thin.

9- Wash off the stain with clean water.

10-Wipe the back of the slide clean, and place it in a draining rack for the smear to air-dry .

11-Examine the smear microscopically, using the 100 X oil immersion objective.

Interpretation of Acid-Fast Stain



Acid fast: Bright red to intensive purple (B), Red, straight or slightly
Non-acid fast: Blue color (A

Summary of Acid-Fast Stain

Application of	Reagent	Cell colour	
		Acid fast	Non-acid fast
Primary dye	Carbol fuchsin	Red	Red
Decolorized	Acid alcohol	Red	Colorless
Counter stain	Methylene blue	Red	Blue

Sputum Concentration method

This method is done by mixing sputum similar sized from oH concentration of 8% and mixing sputum well to this article and then put incubator degree of 37 ° C for half an hour, this article will break the threaded mucous and prevents sputum to the media and also be these substances toxic natural bacterial as well as it is eliminated after which sputum centrally and for a quarter of an hour and then reflects the disposal of liquid supernatant and maintains sediment equivalent precipitate add a few drops of acid Hcl concentration of 4% to offset the impact

of the base and Shake well and then becomes ready for the preparation of films painted a manner aside fast stain and culture of sputum.

Sputum culture:

Culturing sputum media use blood agar MacConkey chocolate agar and incubated dishes (blood & chocolate) the existence of gas co2 by 5-10% using a candle either media MacConkey .agar incubate aerobically where dishes are placed in the incubator 37 degree C for 24 hours to see the types of bacteria developing

Types of bacteria that cause bronchitis:

1-*Streptococcus pneumonia*

2-*Streptococcus progenies*

3-*Haemophilus influenza*

4-*Klebsiella pneumonia*

5-*Pseudomonas aeruginosa*

But if it is required for the purpose of planting sputum isolate the tuberculosis disease then grown on the middle of the so-called sputum Lowenstein -Jensen medium be on slant shaped attend in small bottles placed in the incubator degree 35-37m for 2-3 days and then observed the implant if the result is negative leaves in the incubator for 5 weeks and checked every two or three days to confirm the presence of bacteria because these bacteria slow growth as the generation time is great about 18-20 an hour so we need a long time.