

# ***PRACTICAL***

## ***Granulomatous Diseases***

# *1- Tuberculosis of the lung*

## *Pulmonary TB – Caseous Necrosis – Gross*



*The granulomas have areas of caseous necrosis.*

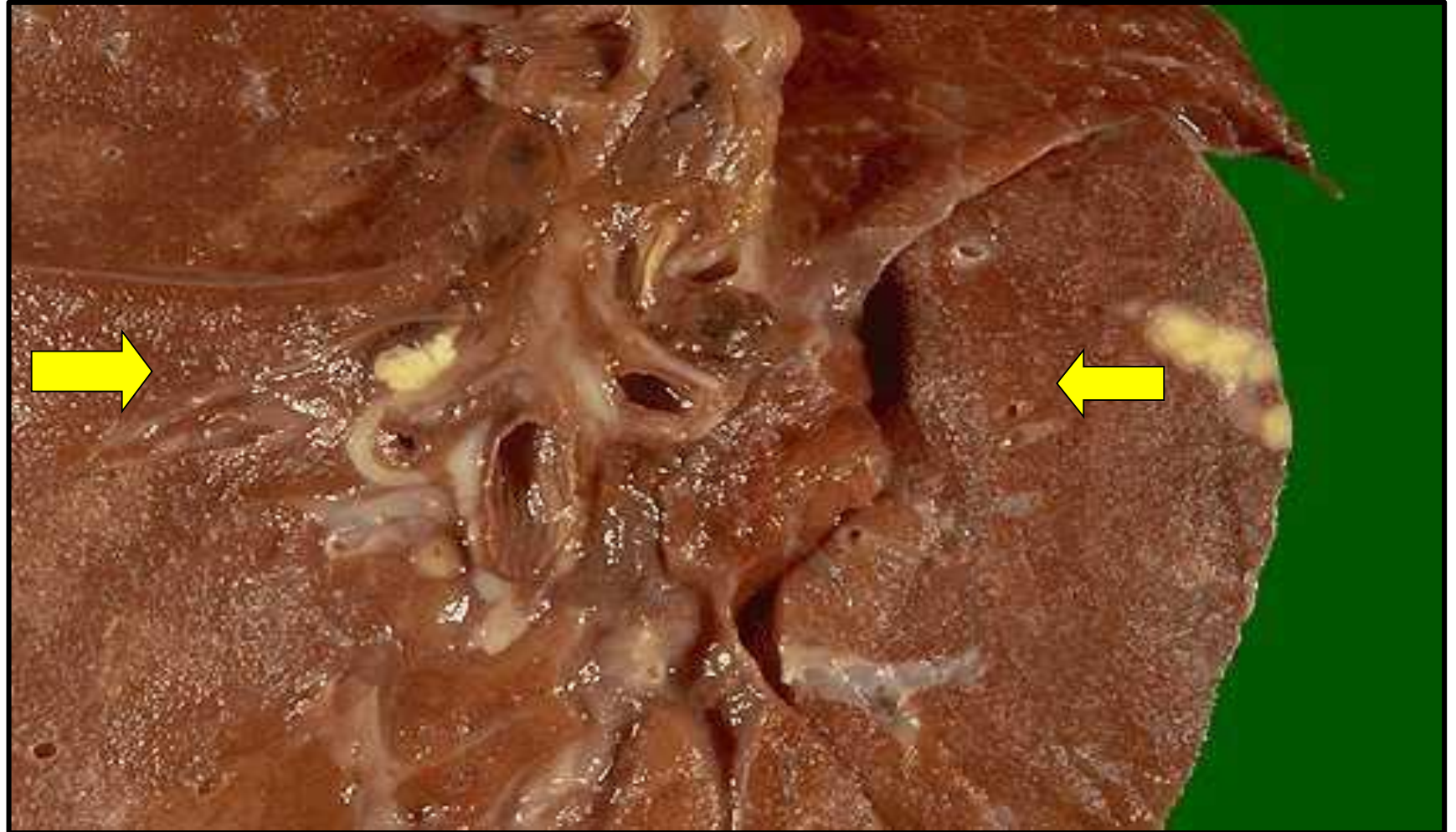
## *Pulmonary TB – Caseous Necrosis – Gross*





## ***Pulmonary TB - Ghon's Complex – Gross***

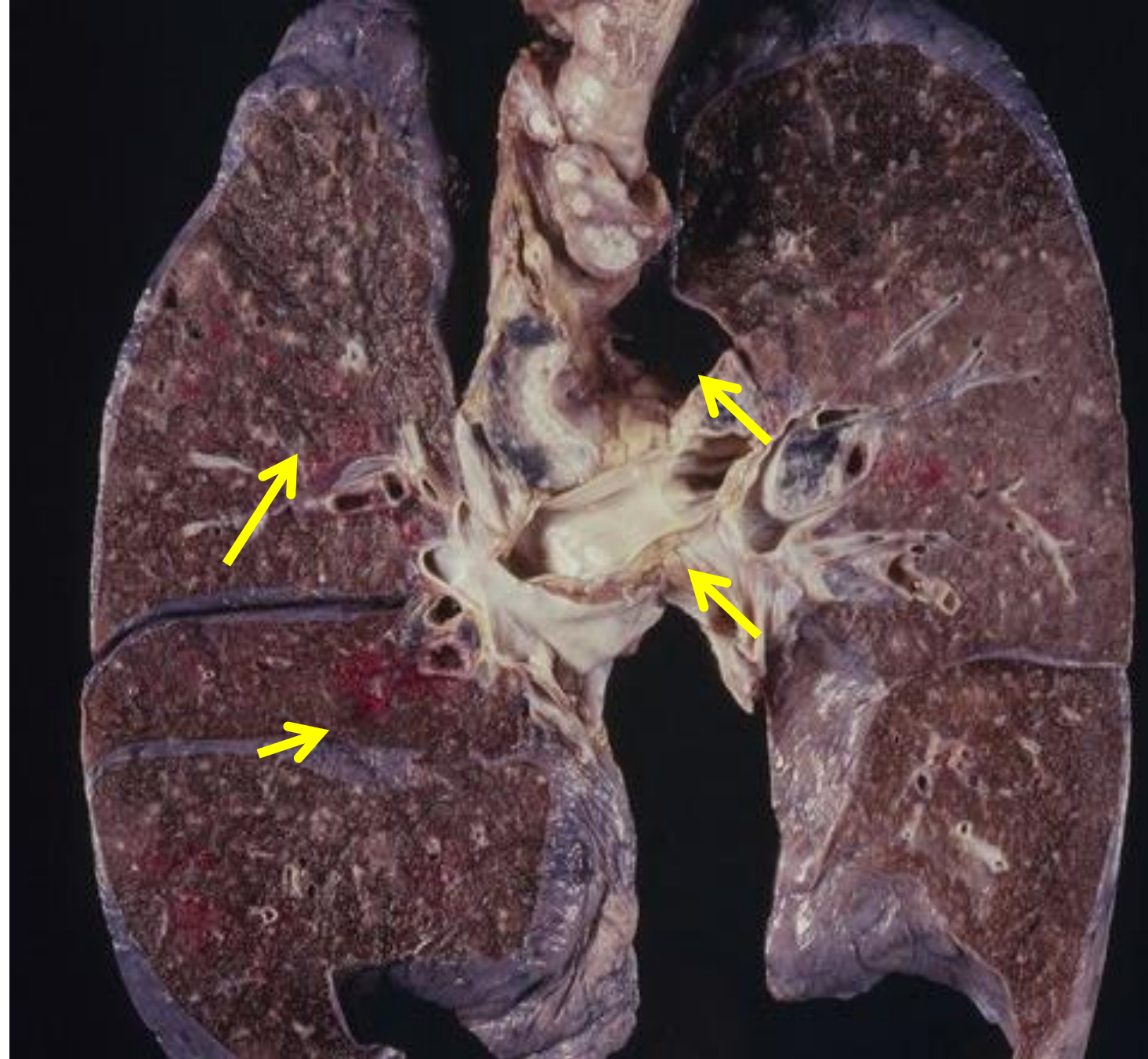
***Initial (primary) infection with T.B. producing a sub-pleural lesion called a Ghon's focus. The early Ghon's focus together with the lymph node lesion constitute the Ghon's complex.***



***The Ghon's complex is seen here. Primary tuberculosis is the pattern seen with initial infection with tuberculosis in children. Reactivation, or secondary tuberculosis, is more typically seen in adults.***

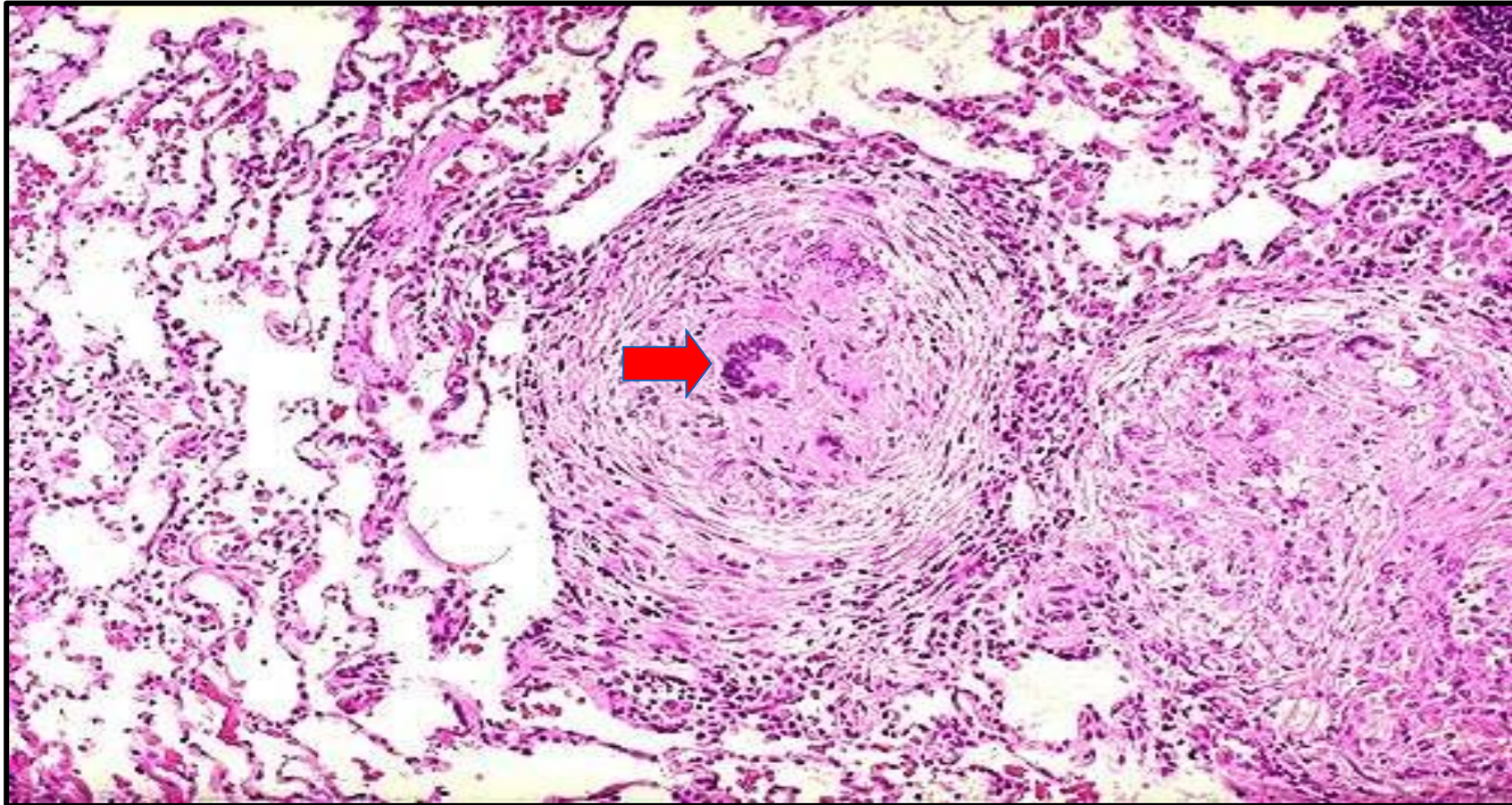
## ***Miliary TB of the Lungs***

- ***Miliary TB can occur when TB lung lesions erode pulmonary veins or when extrapulmonary TB lesions erode systemic veins.***
- ***This results in hematogenous dissemination of tubercle bacilli producing myriads of 1-2 mm. lesions throughout the body in susceptible hosts.***
- ***Miliary spread limited to the lungs can occur following erosion of pulmonary arteries by TB lung lesions.***





## *Tuberculous Granulomas*

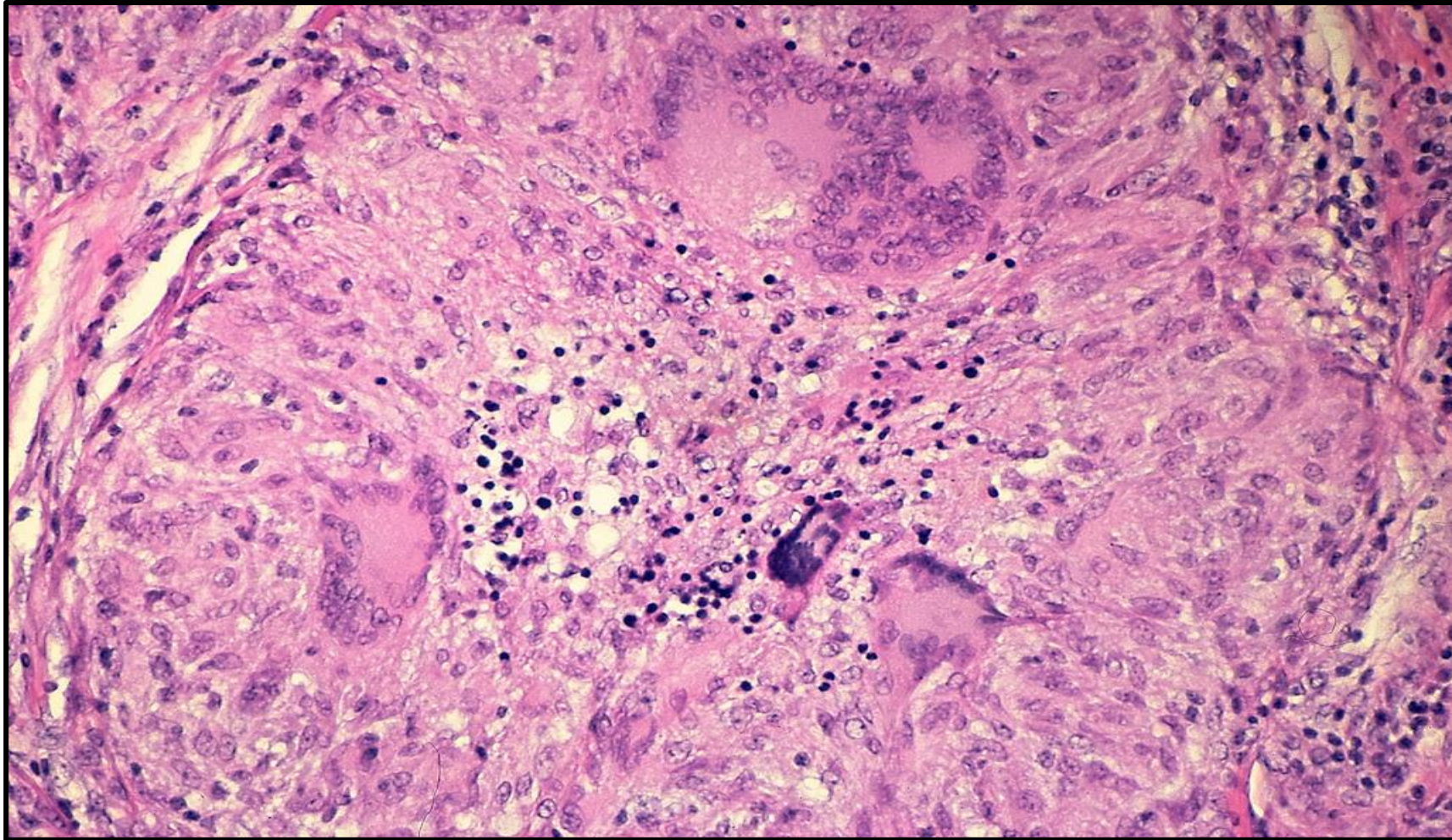


***Well-defined granulomas are seen here. They have rounded outlines. The one toward the center of the photograph contains several Langhan's giant cells.***

***Granulomas are composed of transformed macrophages called epithelioid cells along with lymphocytes, occasional PMN's, plasma cells, and fibroblasts***



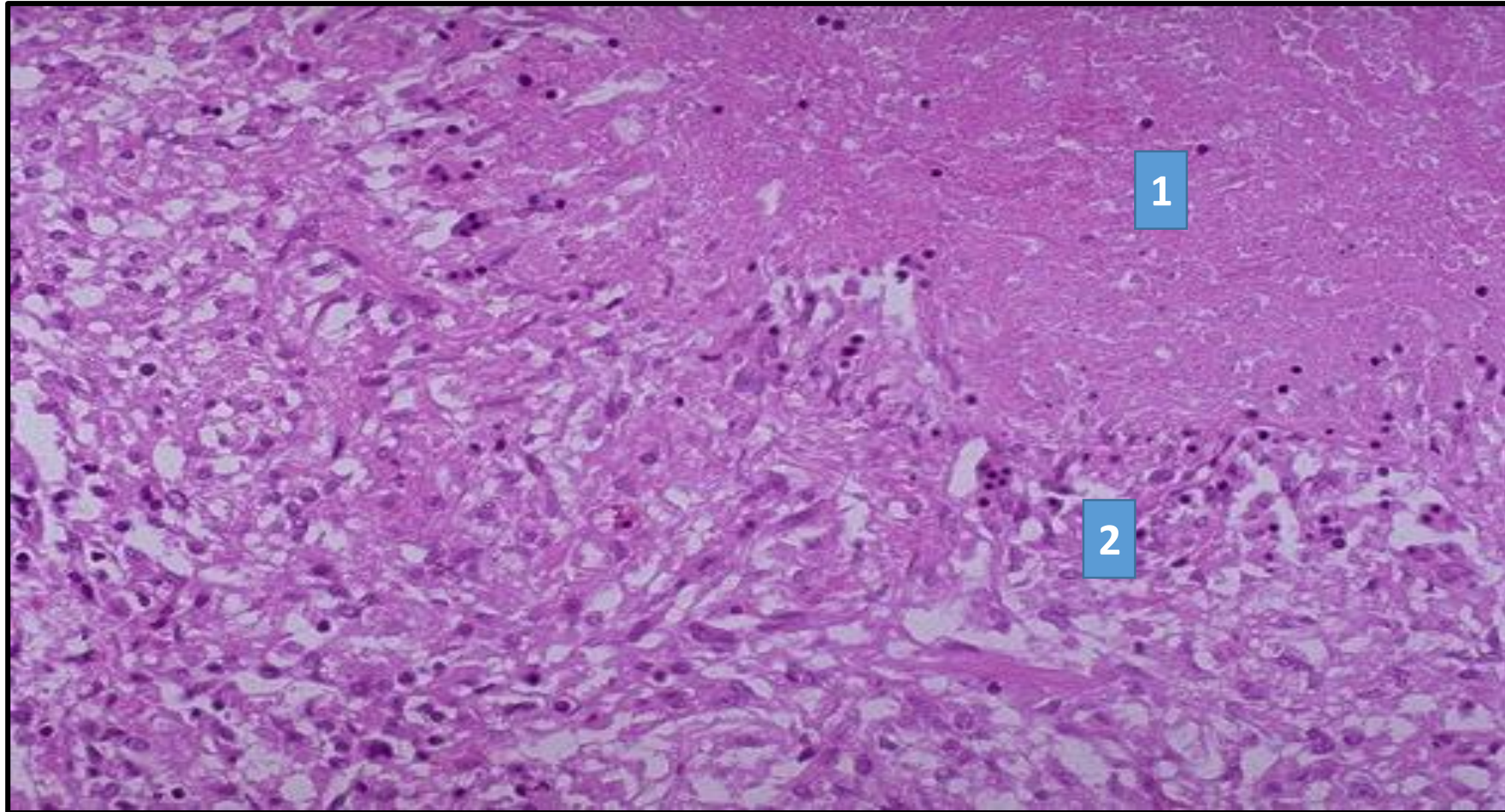
***Pulmonary TB - Granuloma with central  
early necrosis***



***The pyknotic nuclei of epithelioid cells in the center of the granuloma  
(apoptotic bodies) are a precursor of necrosis.***

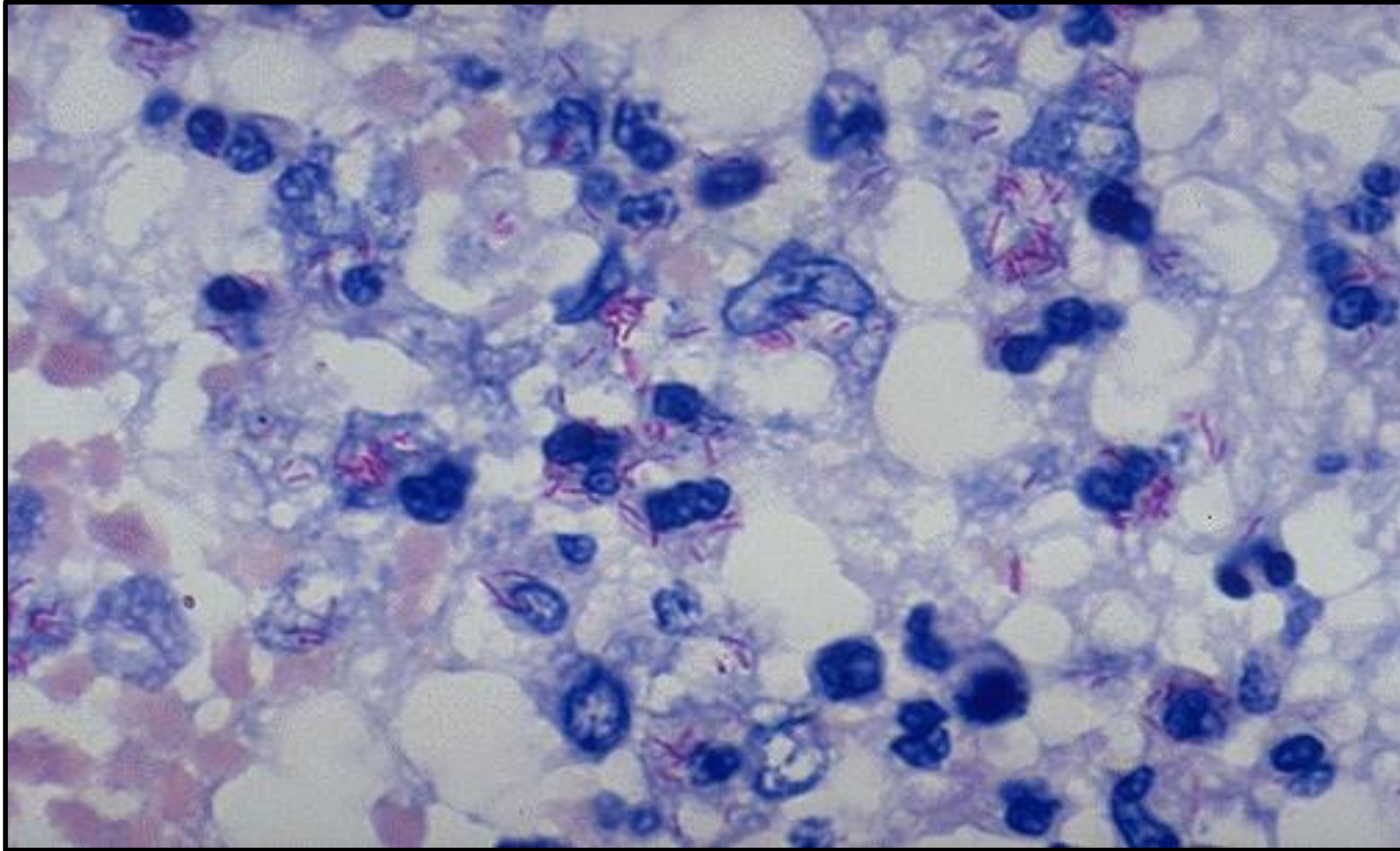


## Tuberculous Granulomas



***The edge of a granuloma is shown here at high magnification. At the upper is amorphous pink caseous material [1] composed of the necrotic elements of the granuloma as well as the infectious organisms. This area is ringed by the inflammatory component [2] with epithelioid cells, lymphocytes, and fibroblasts.***

## *Acid Fast bacilli of Mycobacterium TB in the Lung*



*A stain for **Acid Fast Bacilli** is done (**AFB stain**) to find the mycobacteria . The mycobacteria stain as red rods, as seen here at high magnification.*



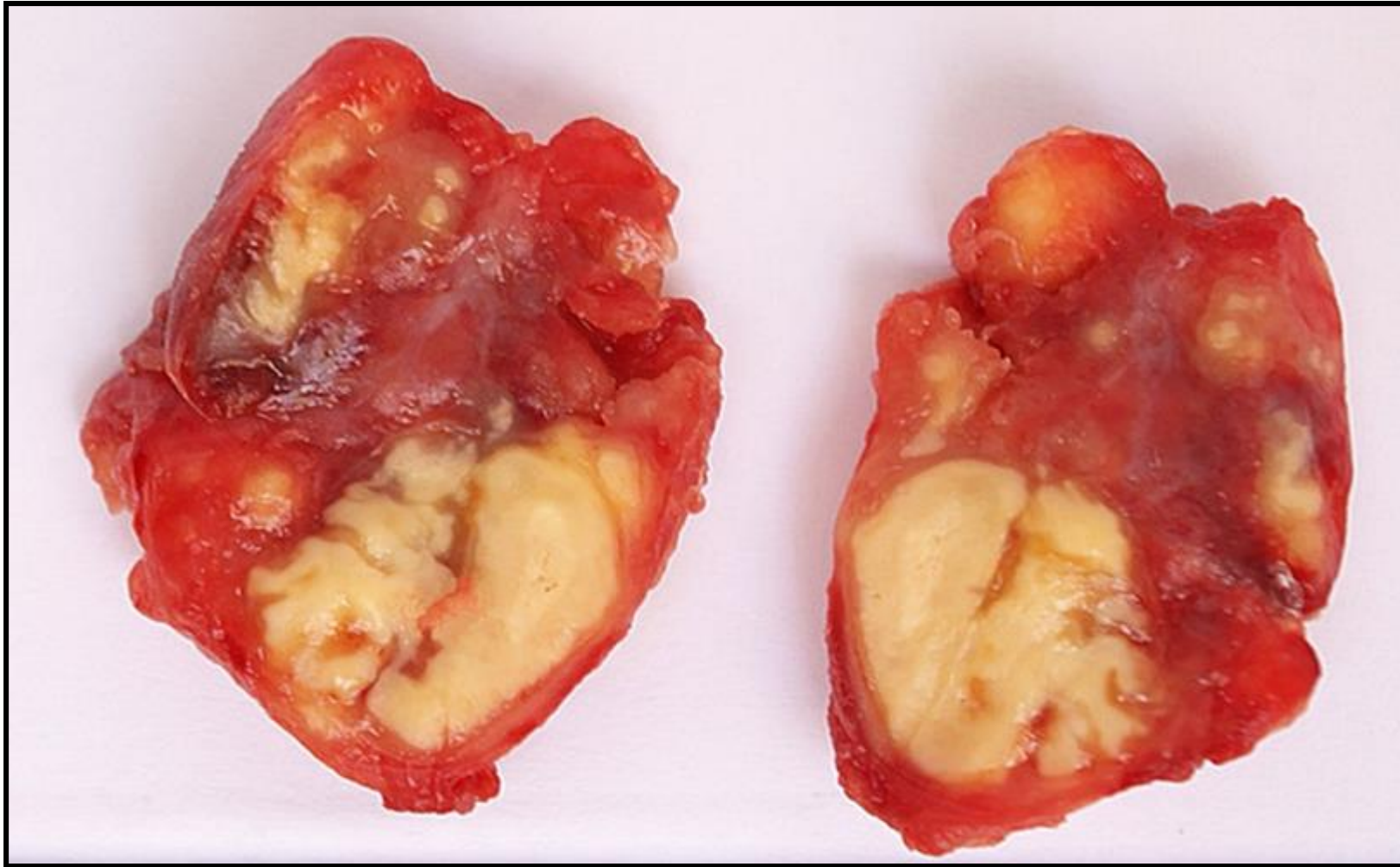
# *2- Tuberculous Lymphadenitis*

***Tuberculous Lymphadenitis - Gross***





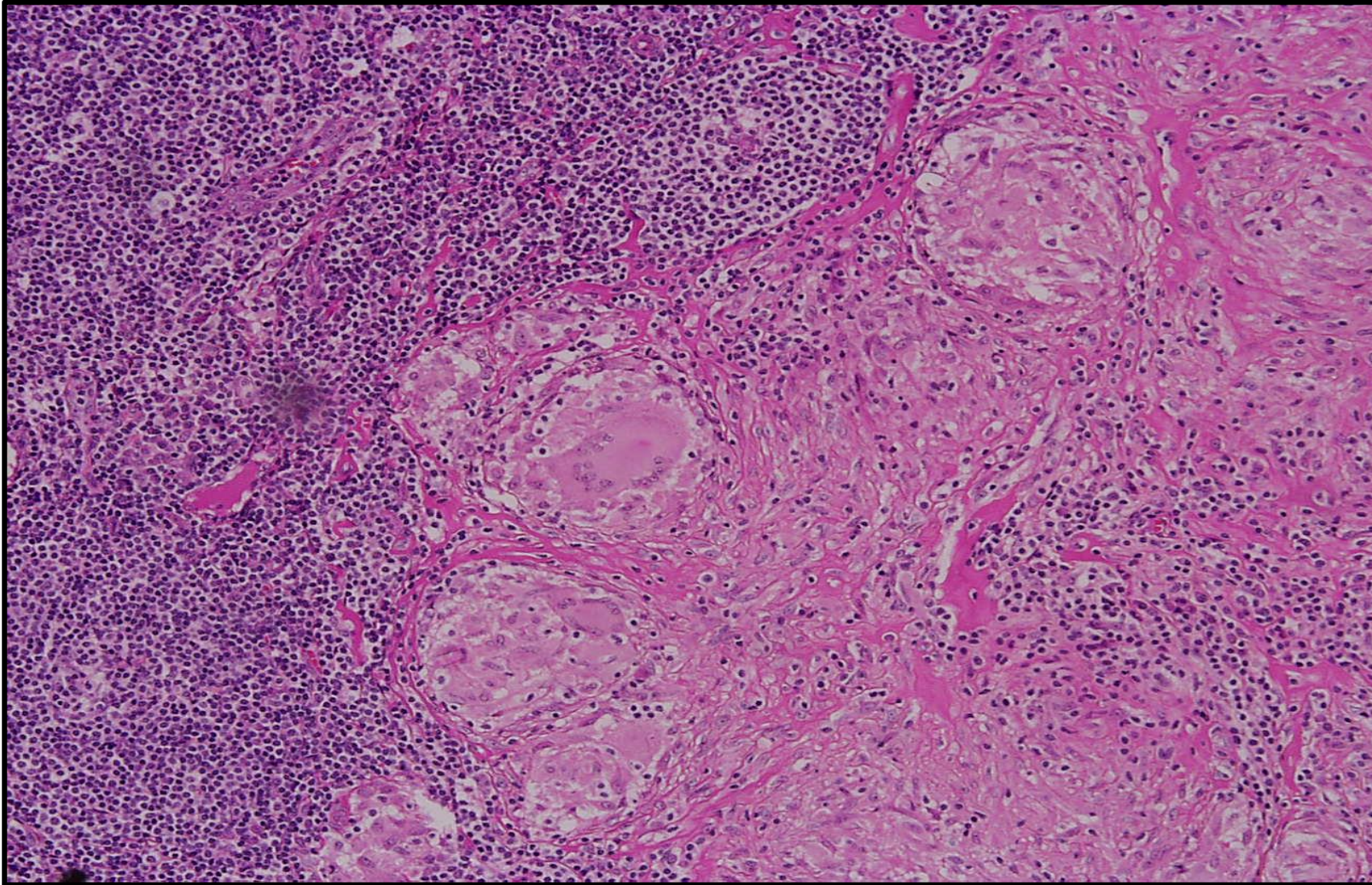
## ***Tuberculous Lymphadenitis – Cut Section***



***Section of a lymph node with connective tissue capsule and lymphoid tissue***



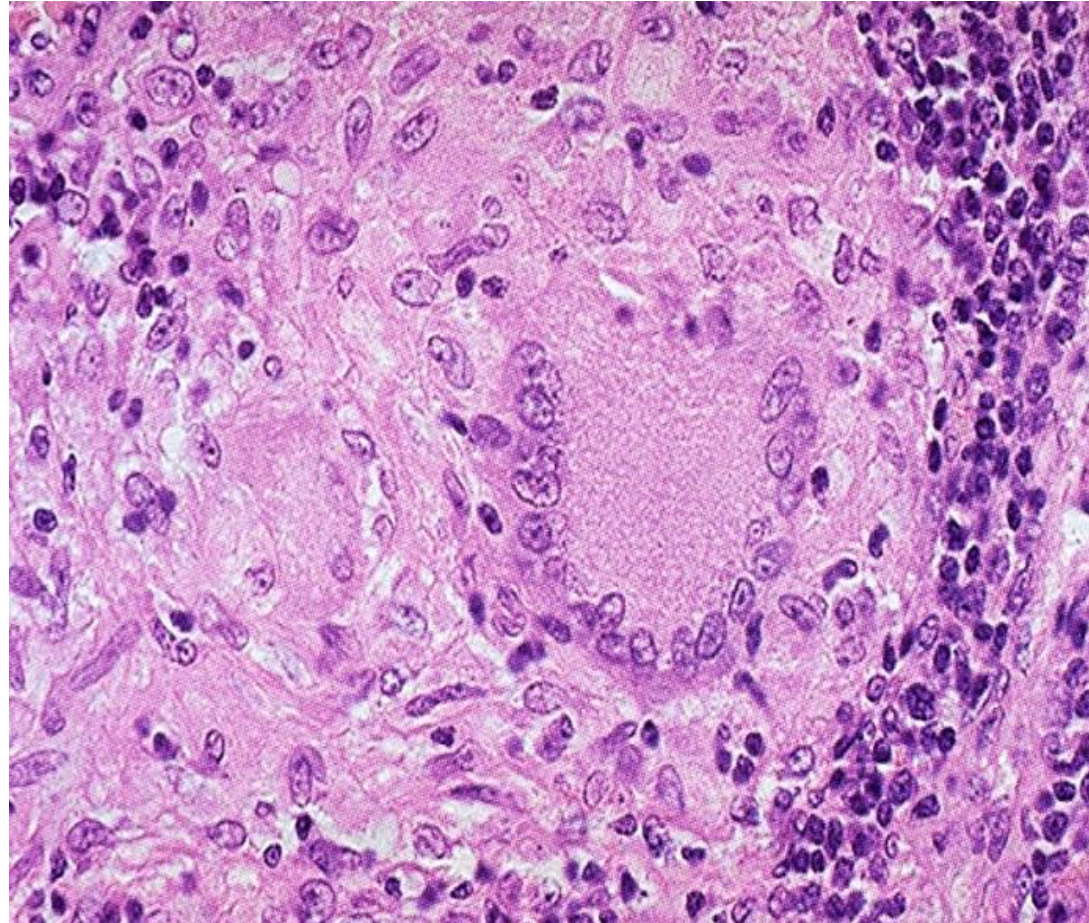
## *Tuberculous Lymphadenitis*



***Many round and oval tubercles/ granulomas with or without central caseation that appears structureless, homogenous and pink in colour.***



## *Tuberculous Lymphadenitis*

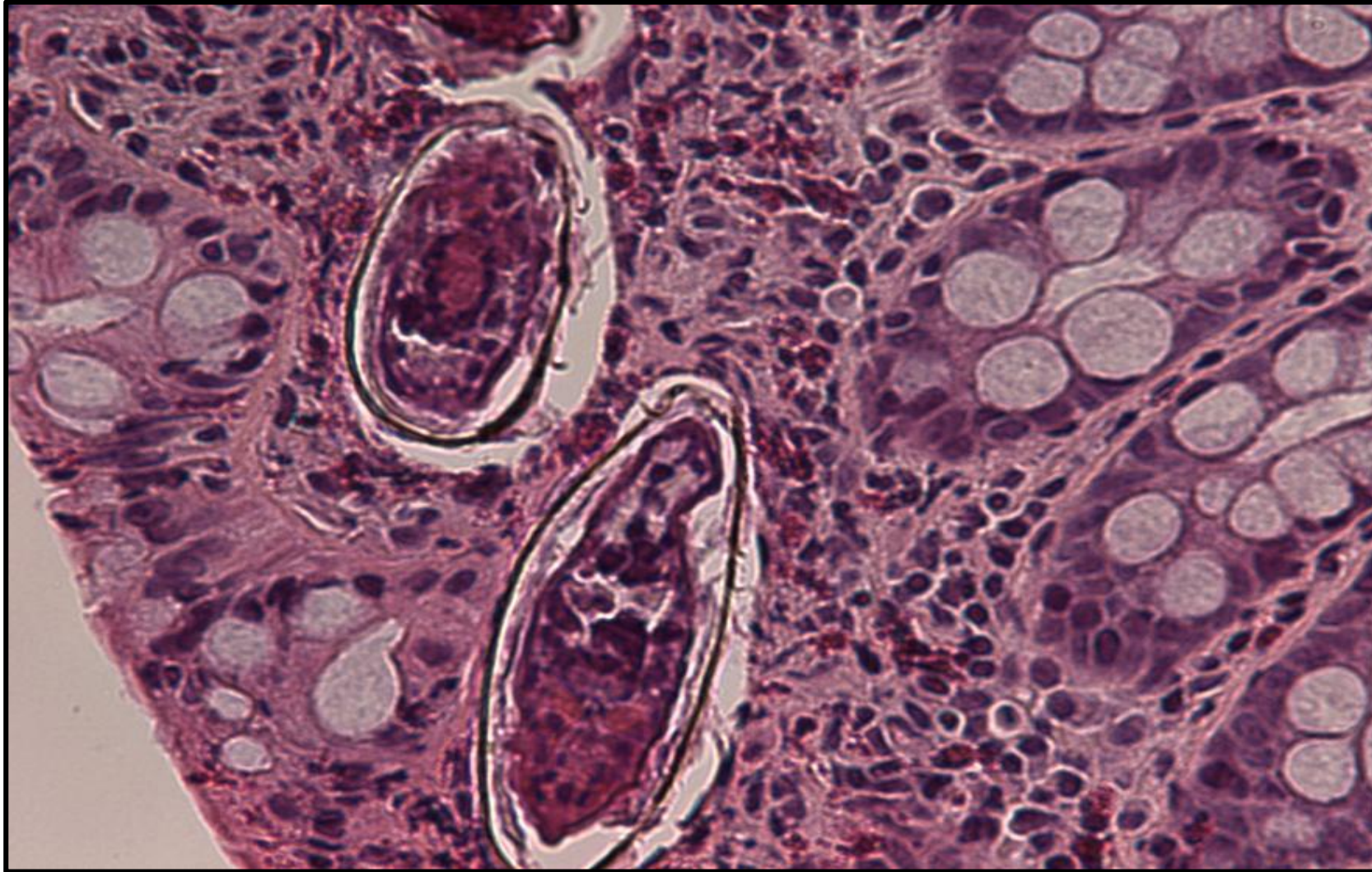


***The granulomas consists of epithelioid cells, few langhan's giant cells (large cell with multiple peripheral nuclei) and peripheral rim of lymphocytes***

# *3- Bilharzial Granulomas*



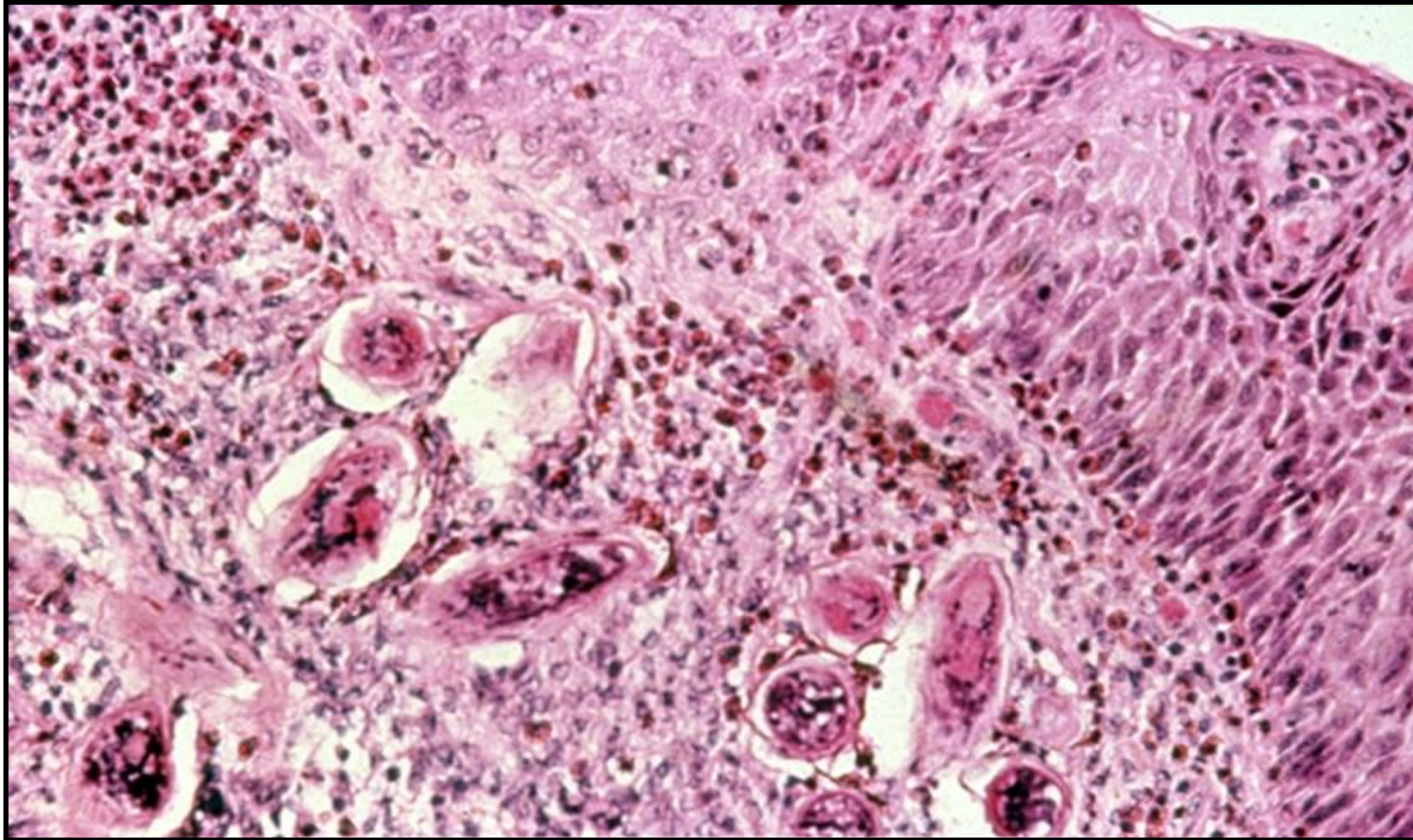
## ***Colonic Bilharziasis - HPF***



***Colon biopsy of bilharziasis. Fibrosing foreign body granuloma against the miracidium-containing ovum of *S. mansoni* is observed in the submucosal layer (H&E).***



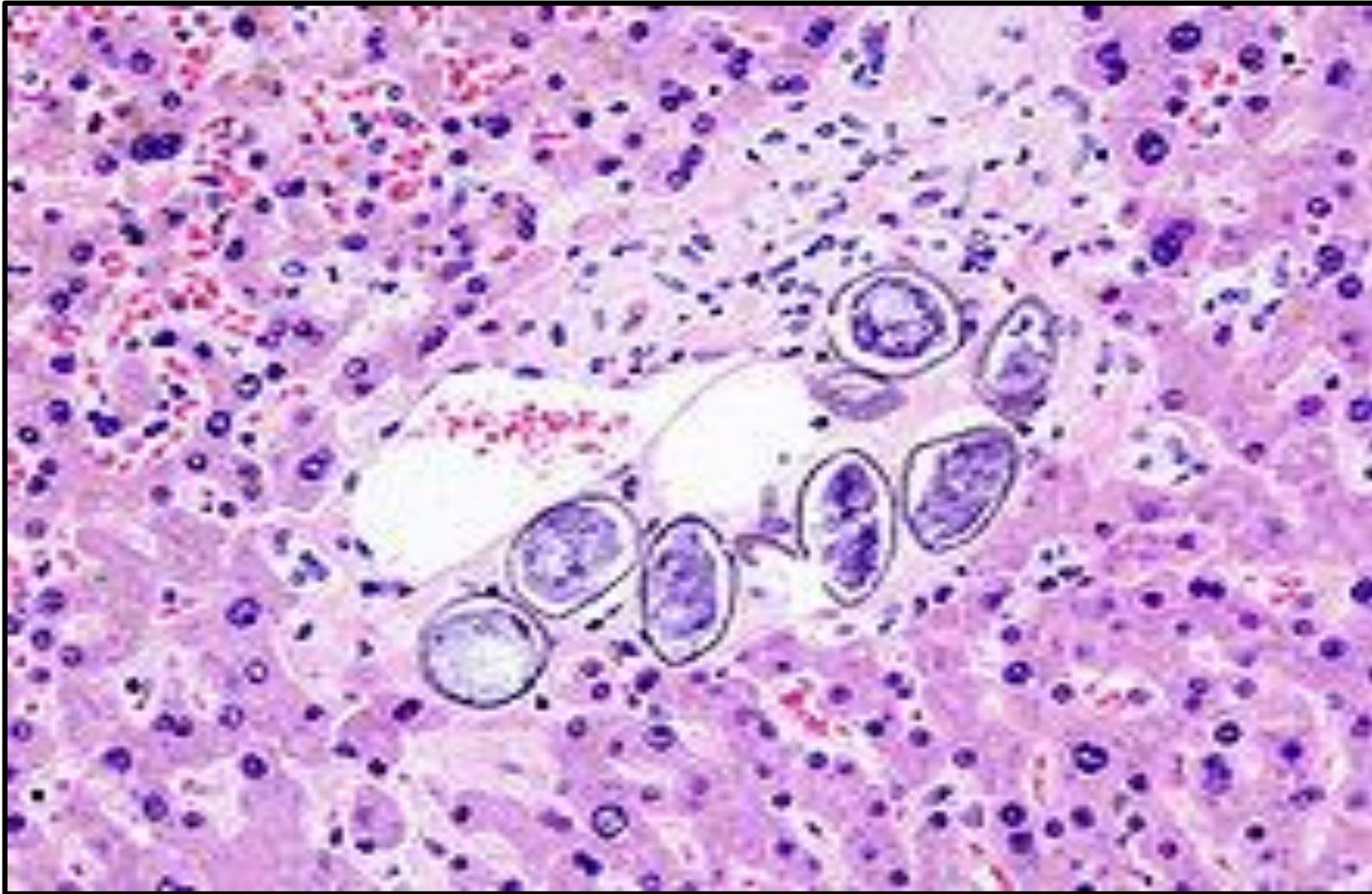
## *Bilharziasis of the Urinary Bladder*



***Schistosoma haematobium. Urinary Bladder biopsy showing bilharziasis eggs***



*S. japonicum* in the Hepatic portal tract



*S. japonicum* eggs in hepatic portal tract

# *4- Cutaneous Leishmaniasis*

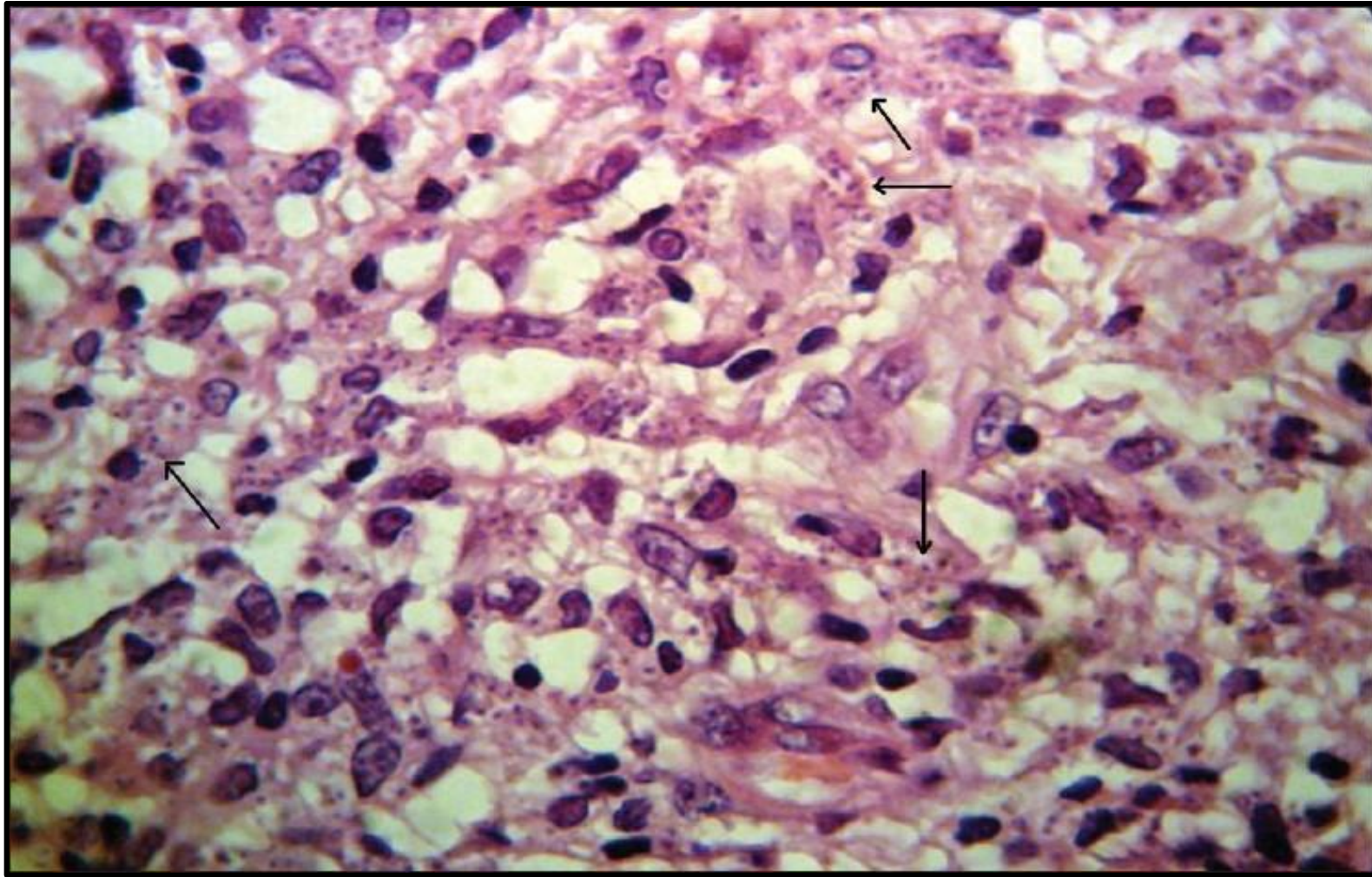


## Cutaneous Leishmaniasis



***Leishmaniasis is caused by parasitic infection, mainly by parasites of the Leishmania genus which are carried by a blood-sucking insect known as the sandfly.***

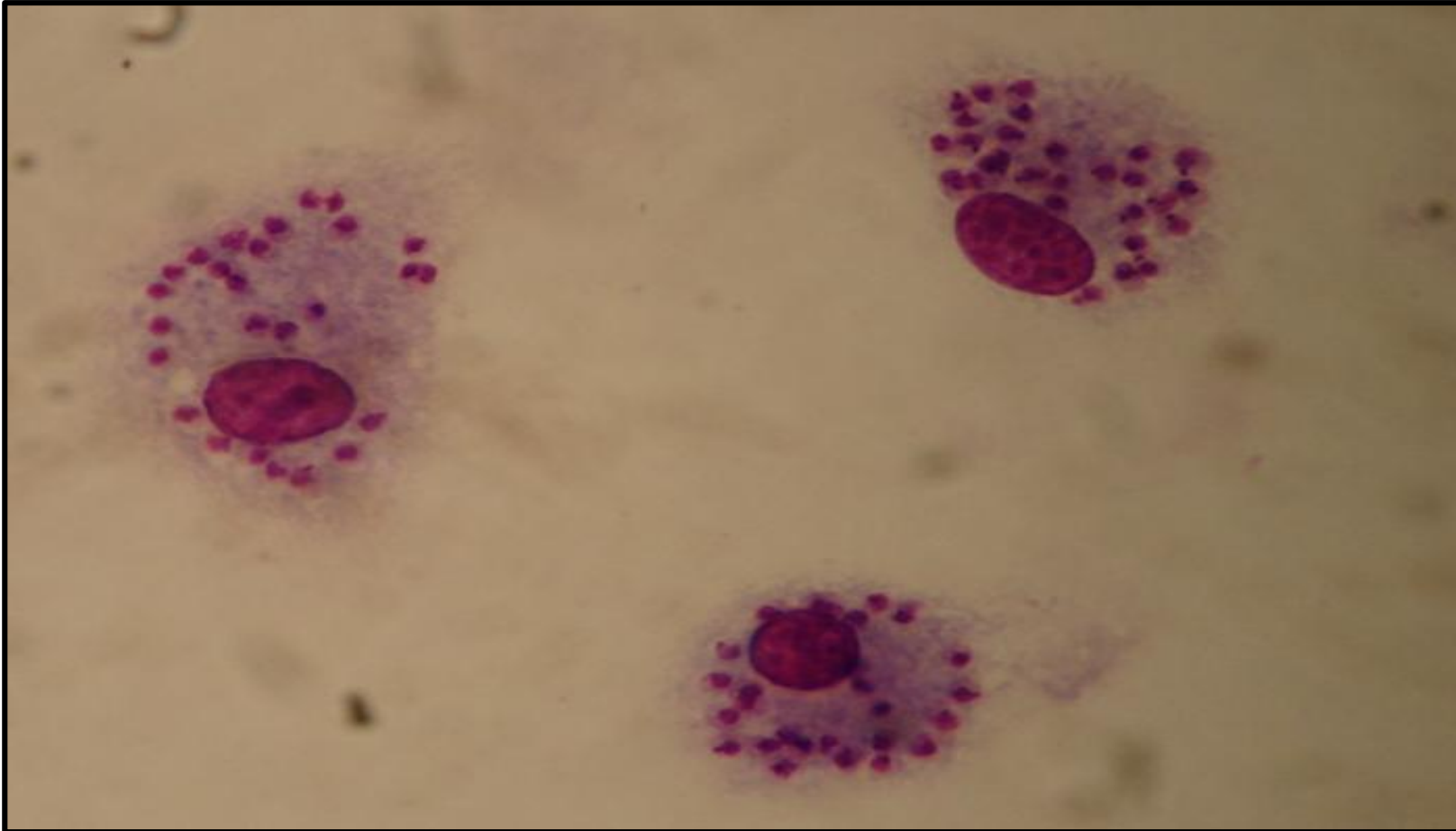
## *Cutaneous Leishmaniasis*



***Histological view shows marked cellular infiltration and parasites (Leishman bodies) within macrophages***



## Cutaneous Leishmaniasis



***The blood film shows macrophages containing Leishmania amastigotes, each with a prominent kinetoplast (seen as a darkened spot next to the larger nucleus) and no flagella (in contrast with the promastigote form).***

***GOOD LUCK***