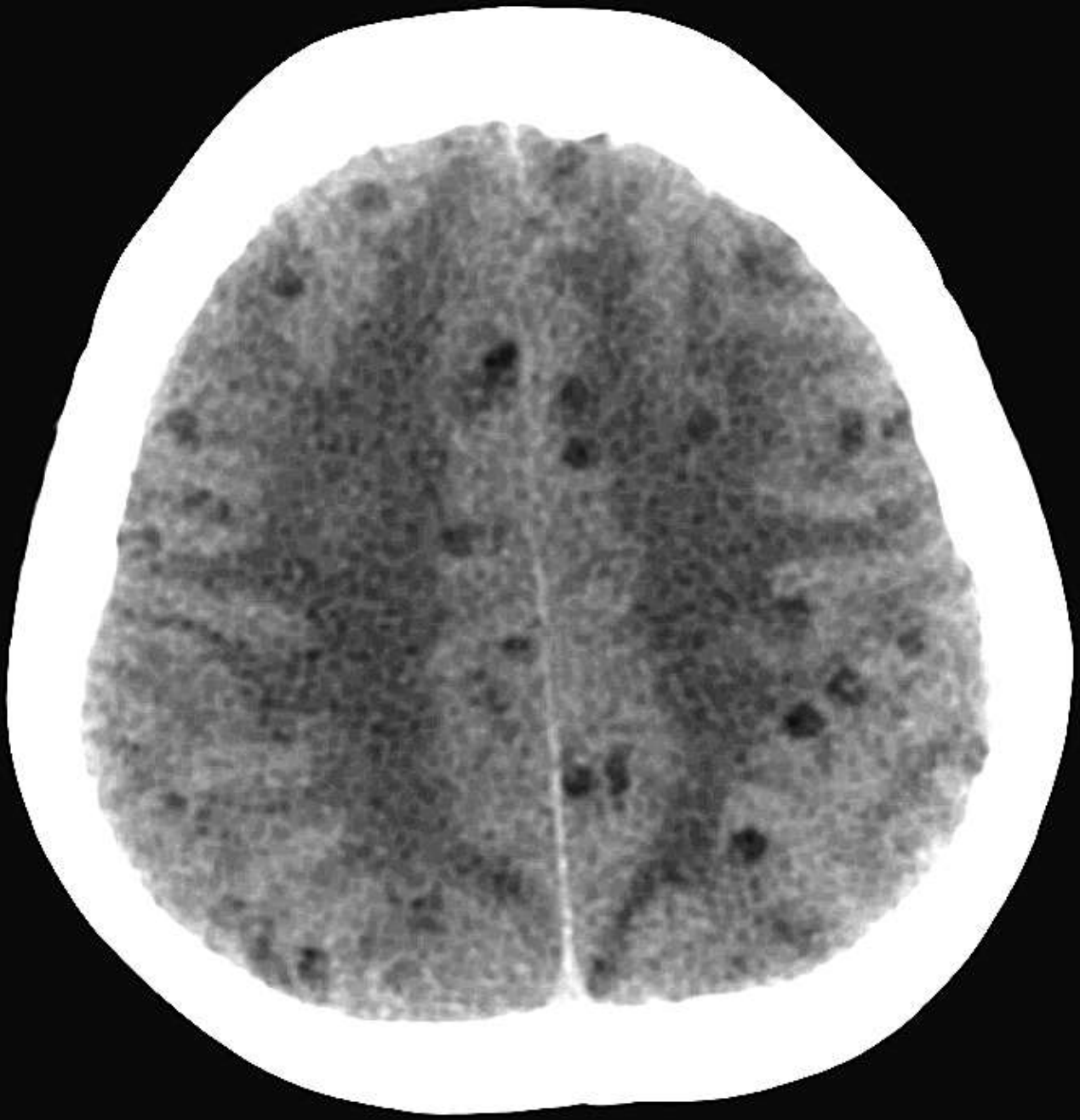
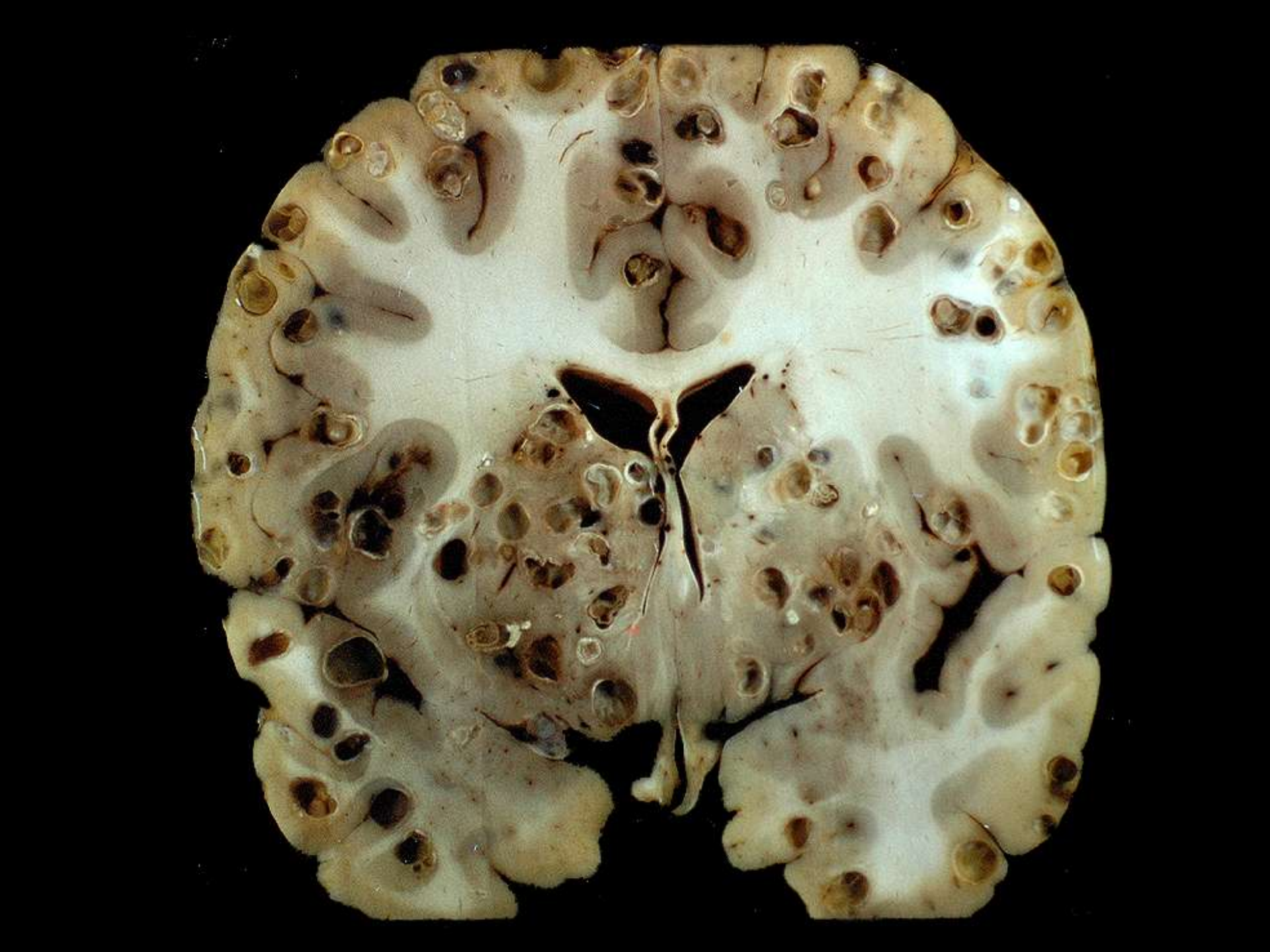
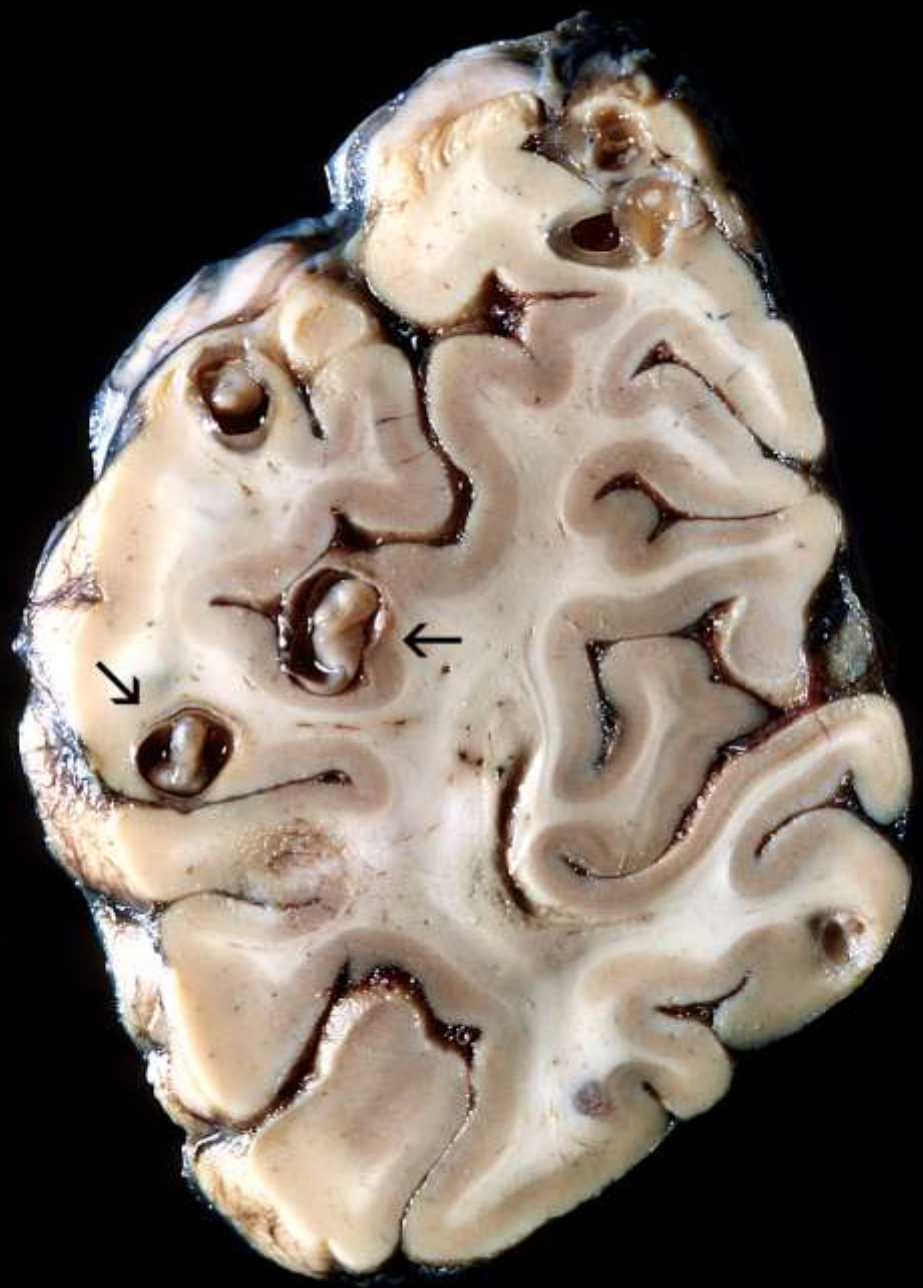
Cysticercosis

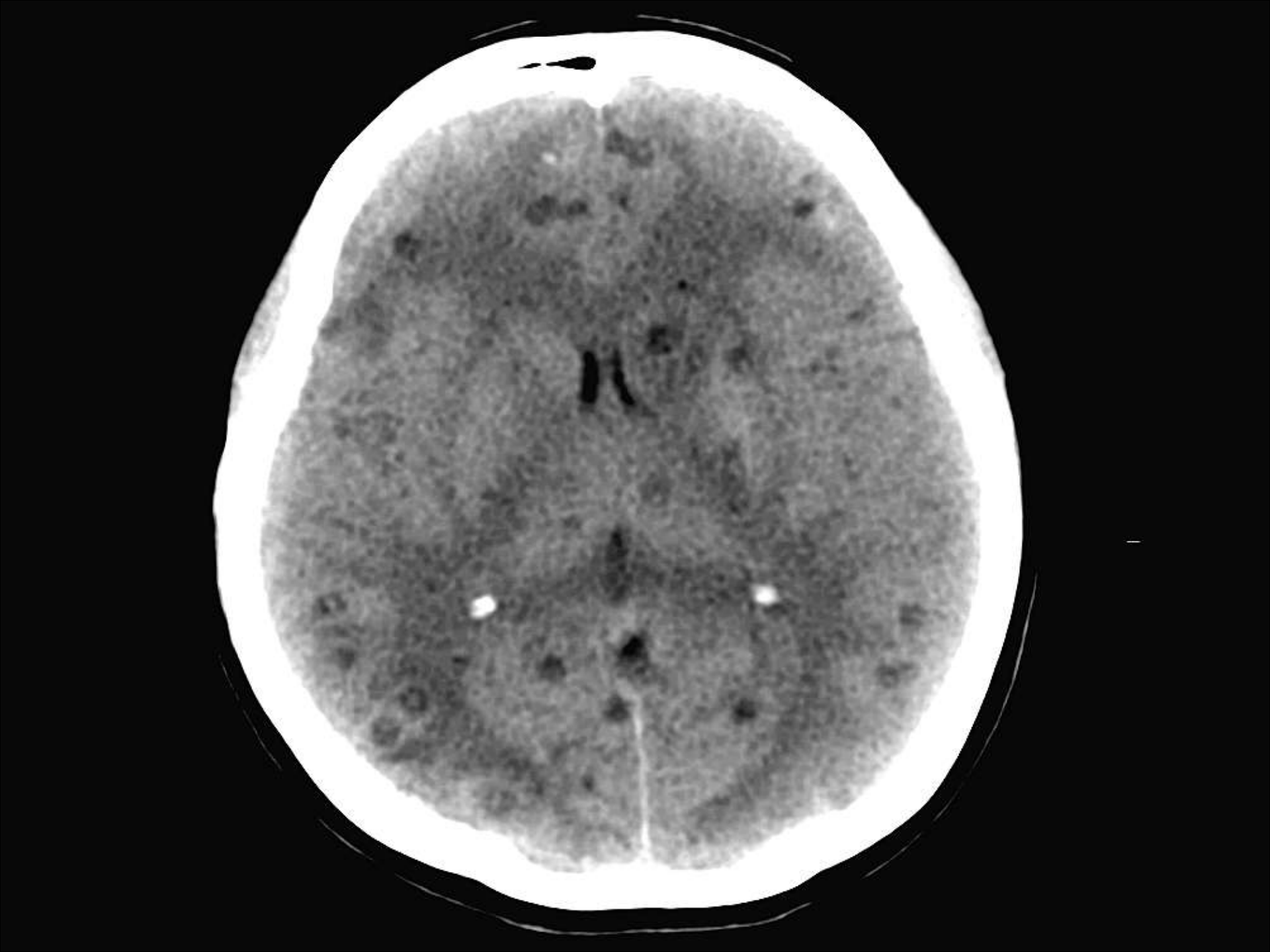
A female 29, an immigrant from Laos to Australia in January 2007 presented in July, 2007 complaining of headache, diplopia and fits.

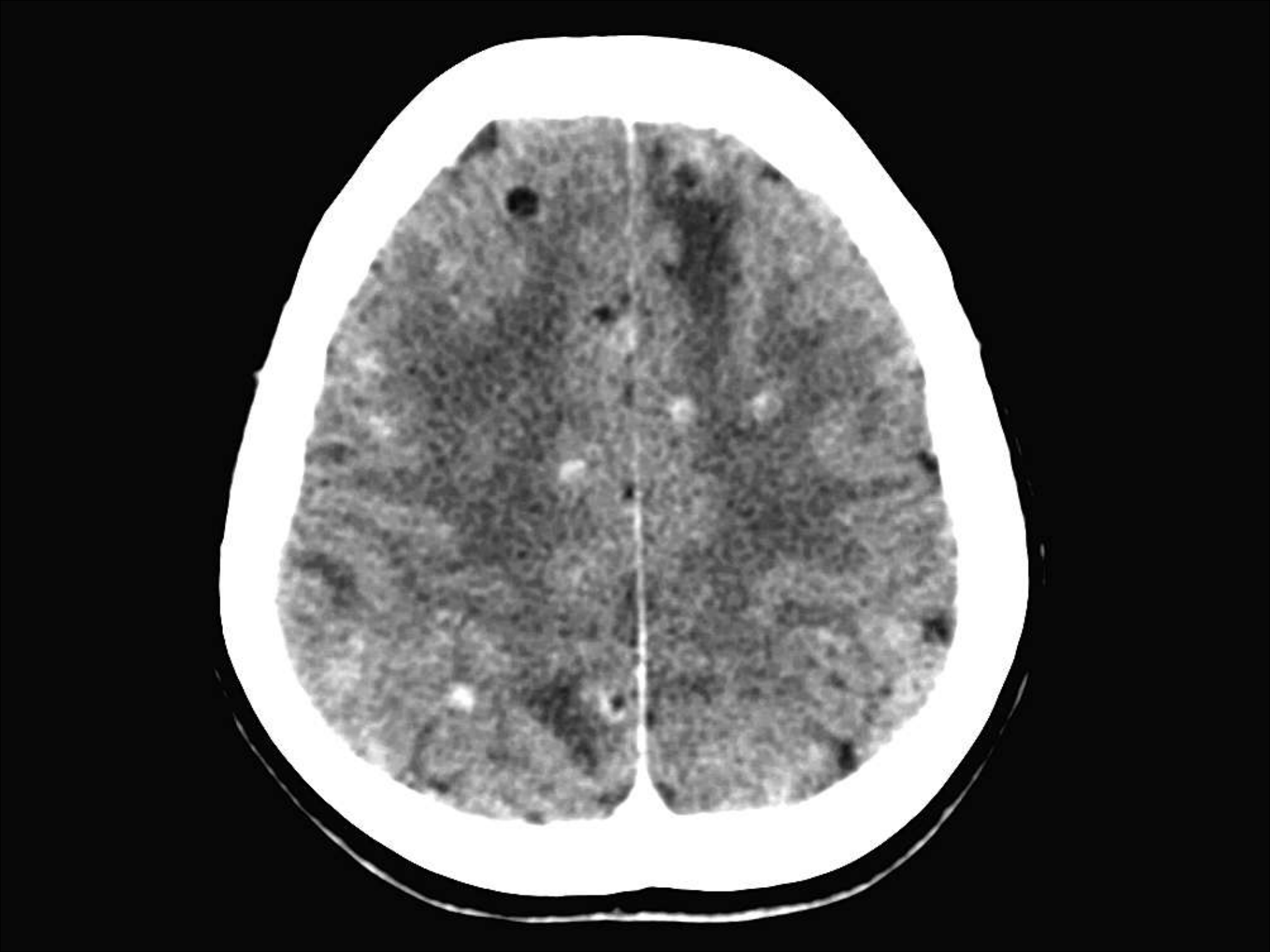
CT of brain showed multiple cysticerci throughout the brain.

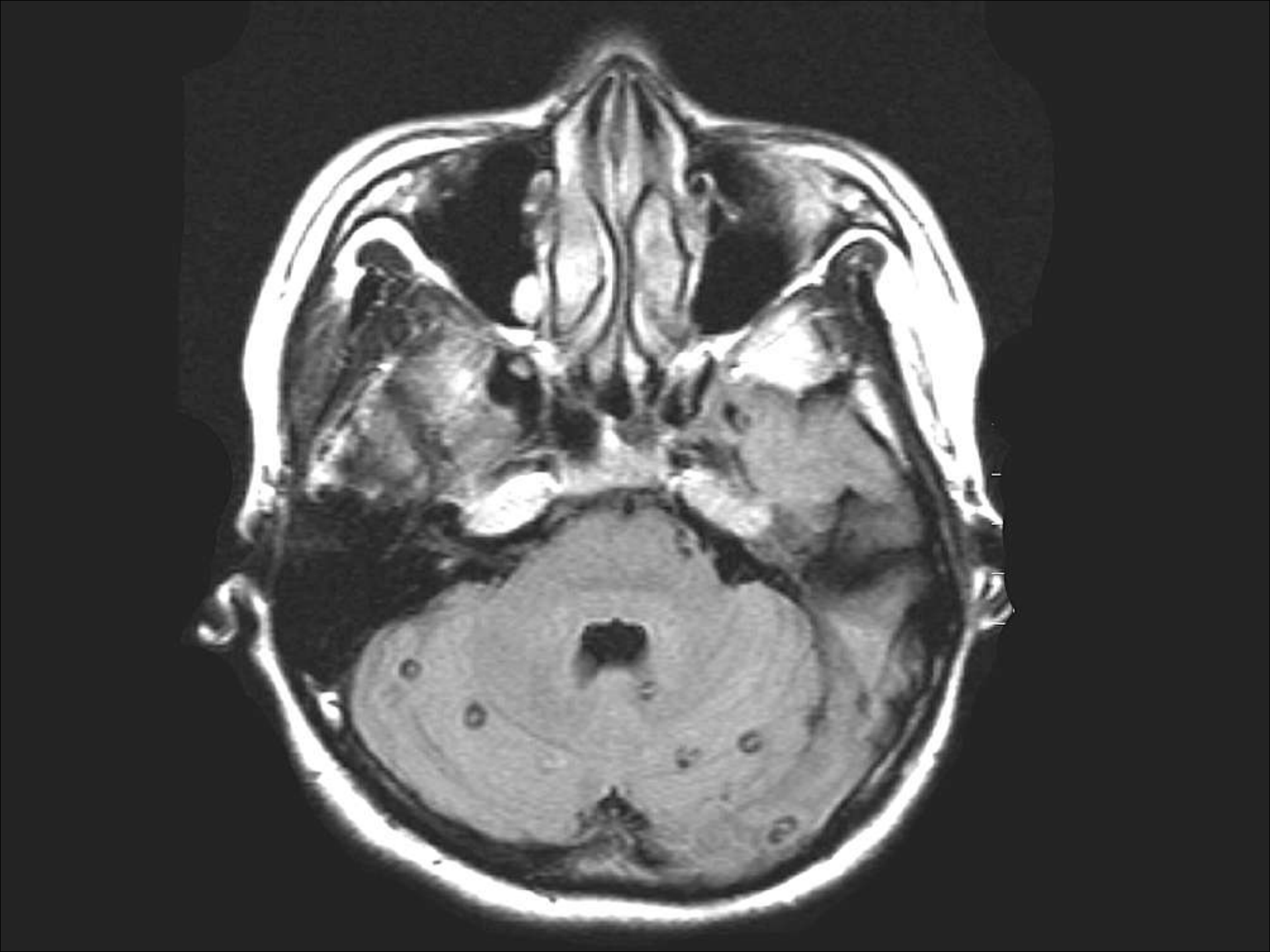


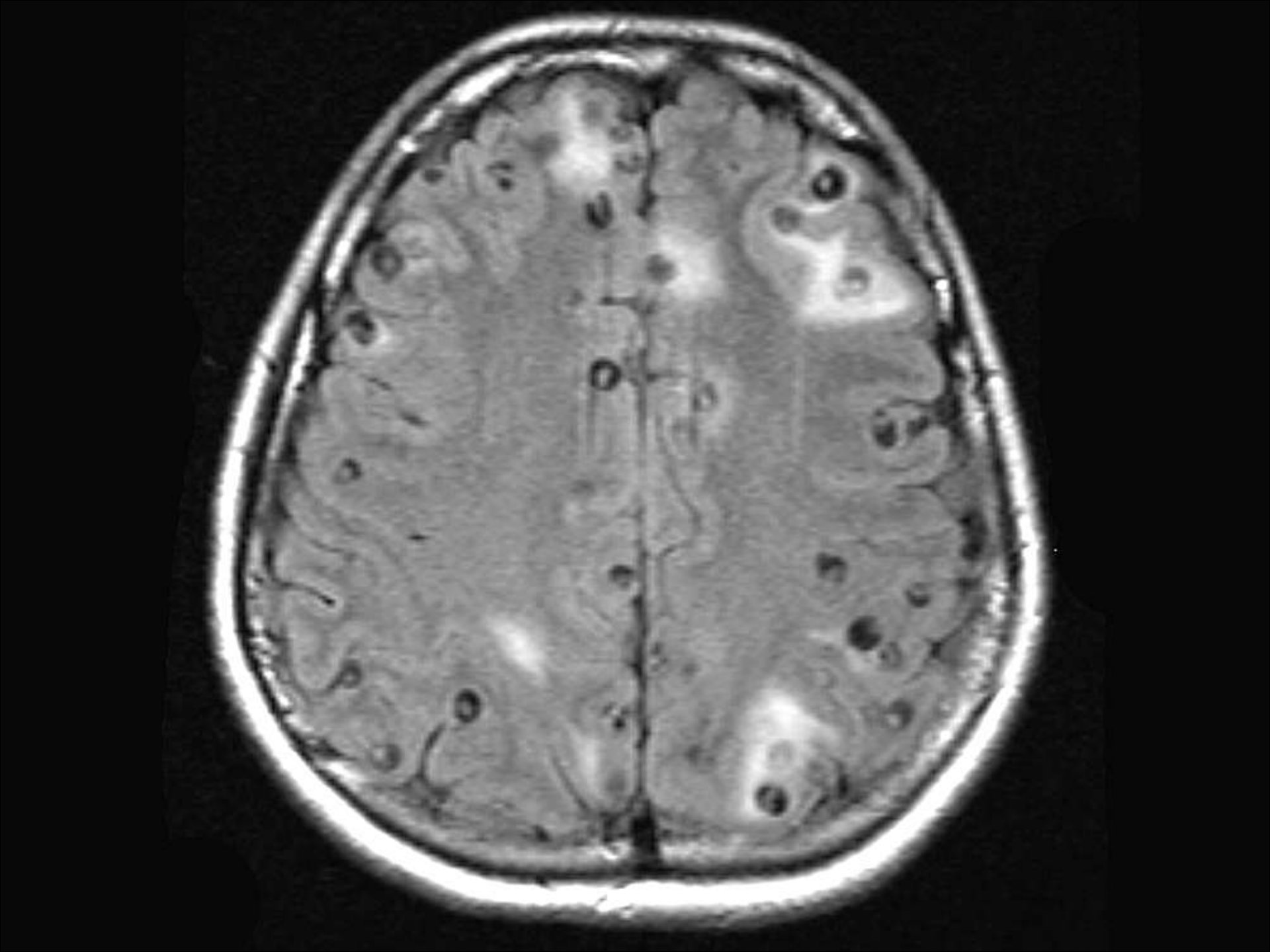


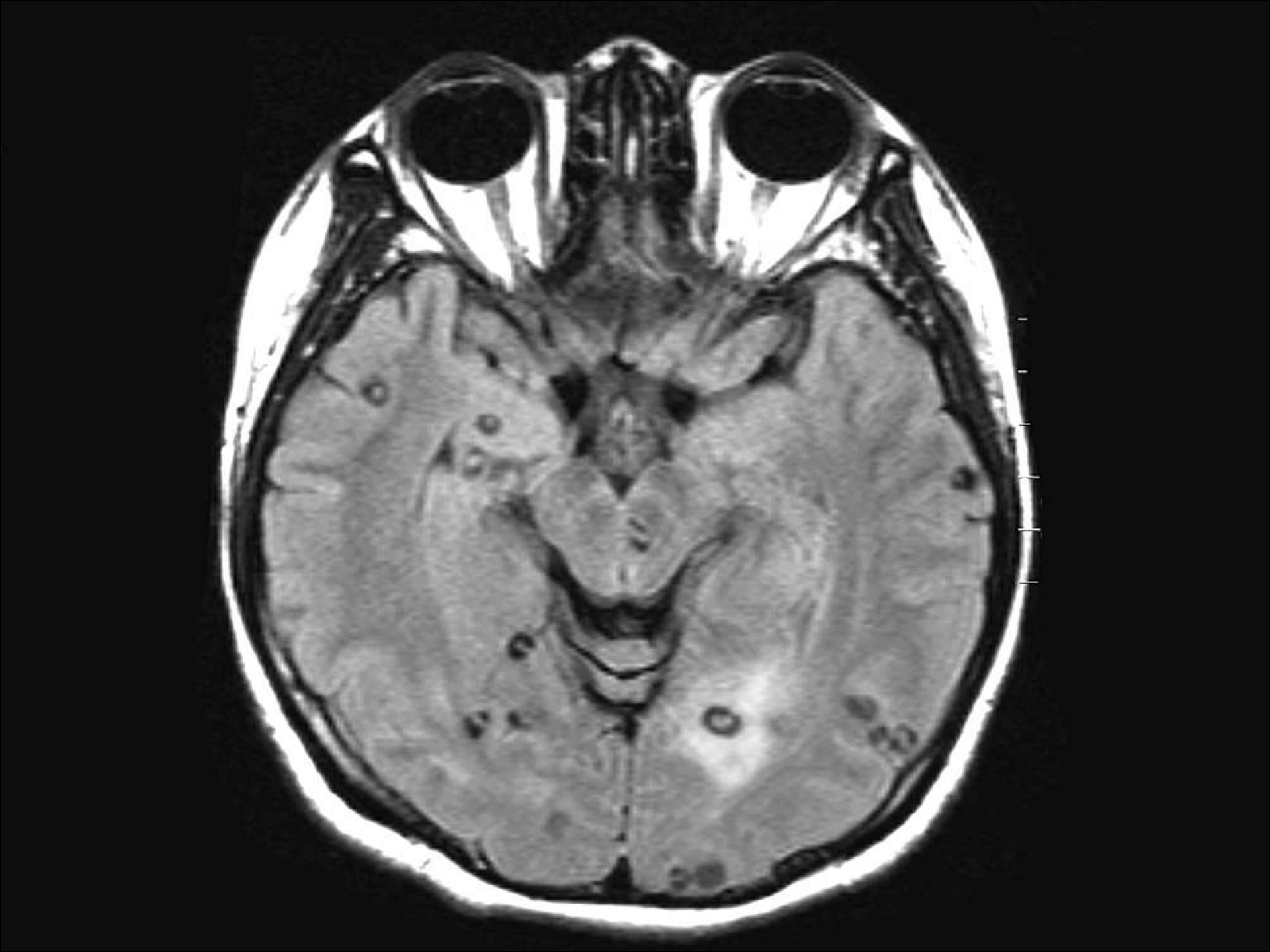


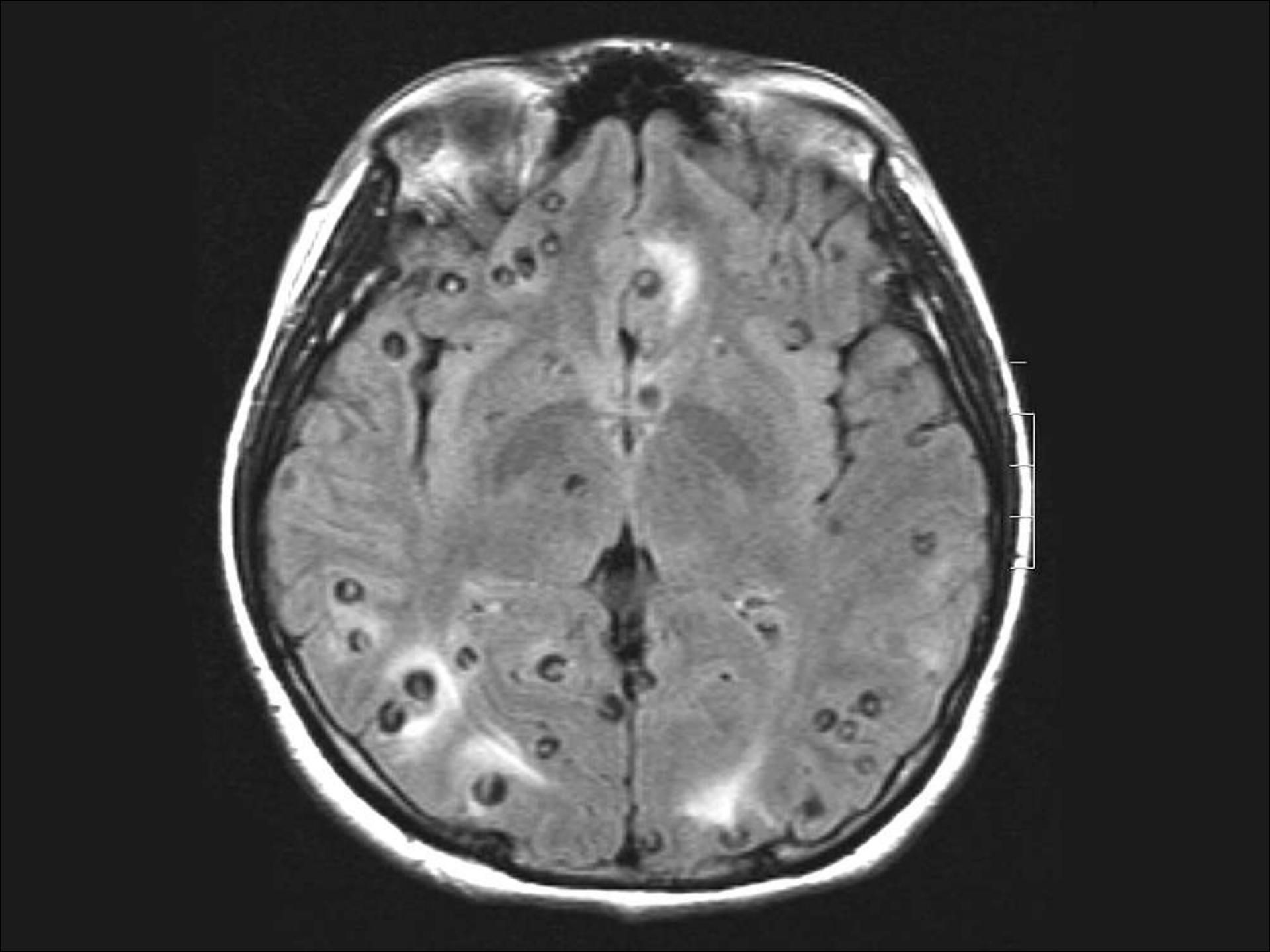






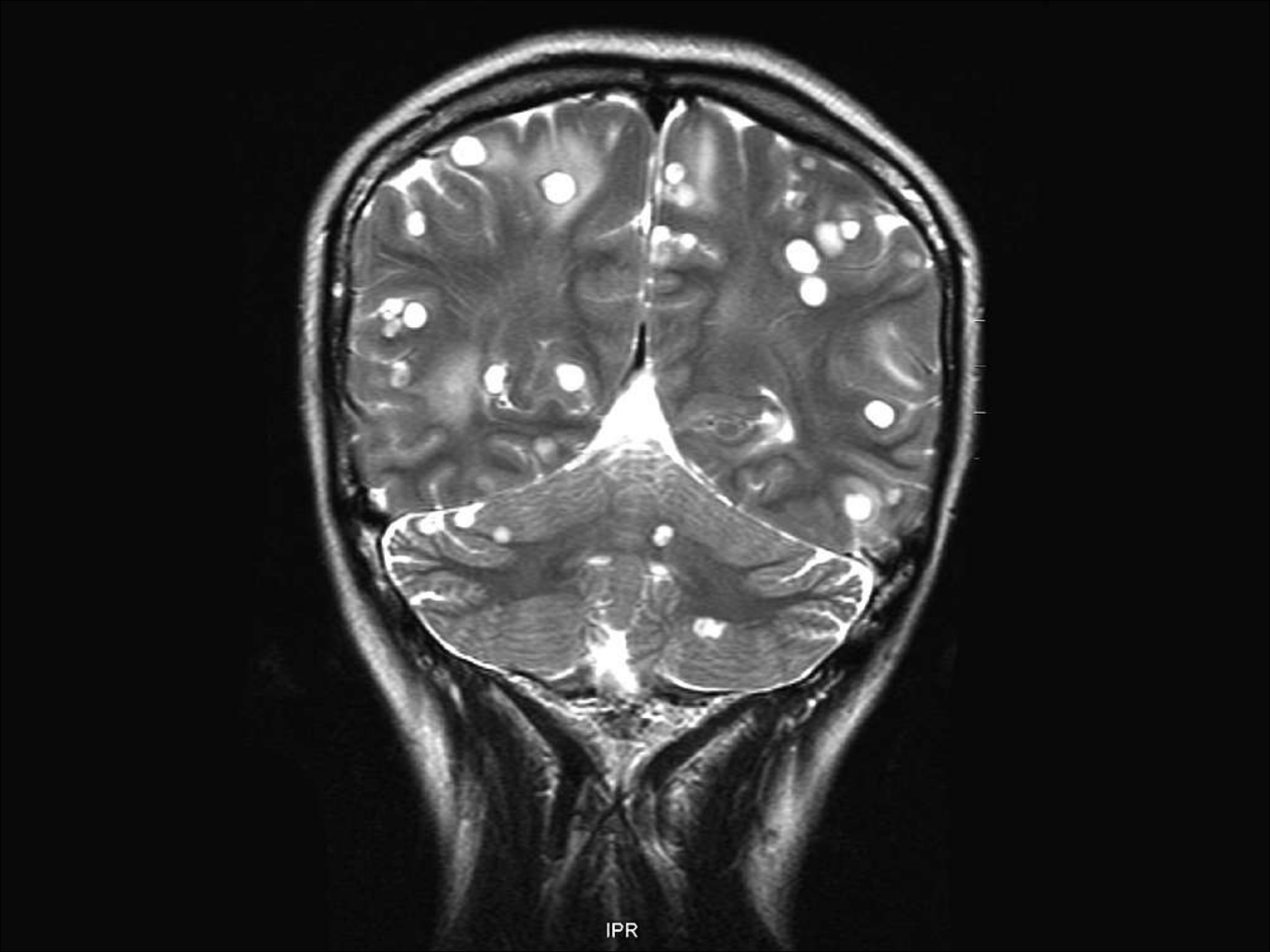






In July 2008 after one course of treatment many of the cysticerci have calcified.


IPR

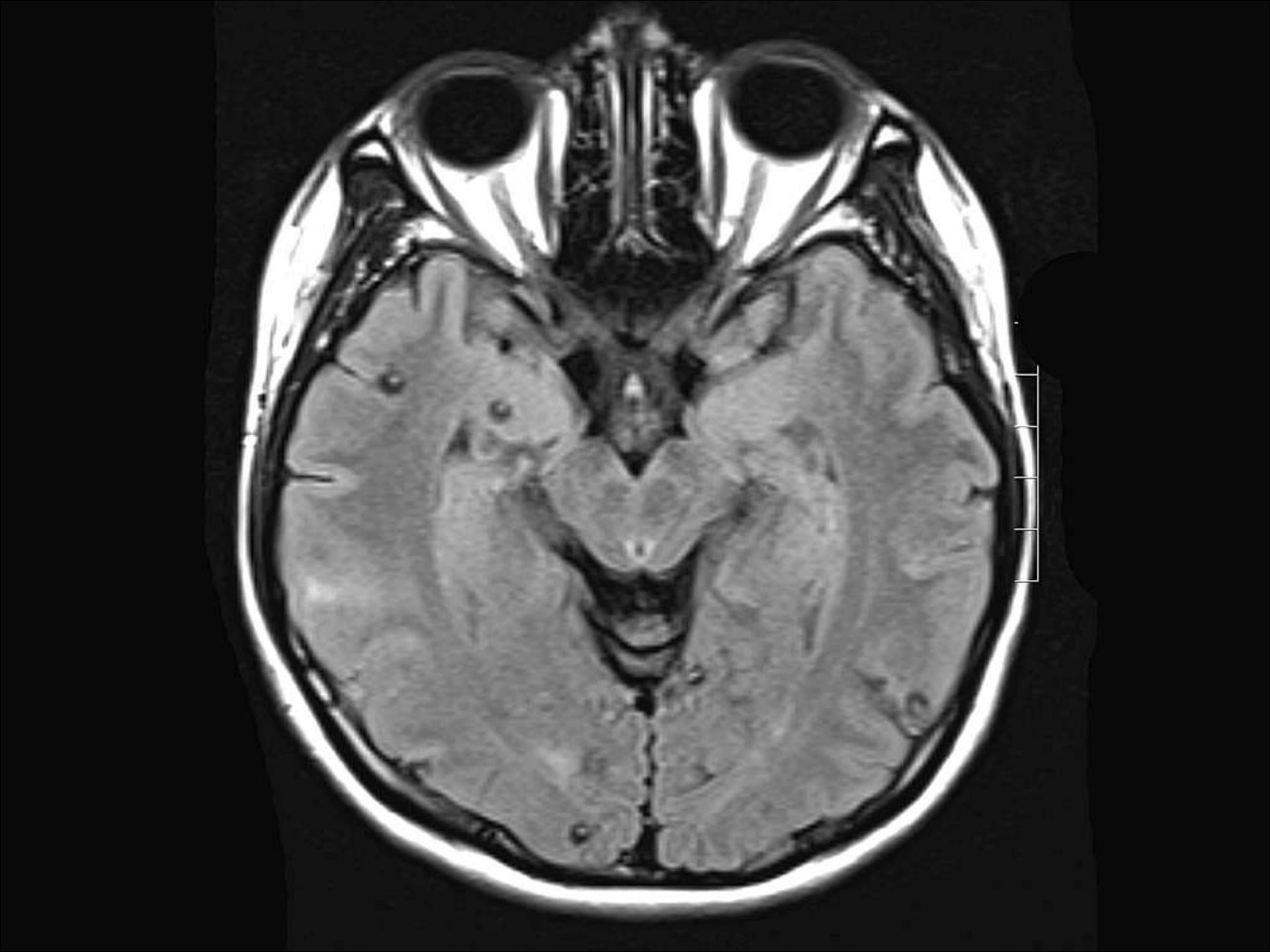

IPR

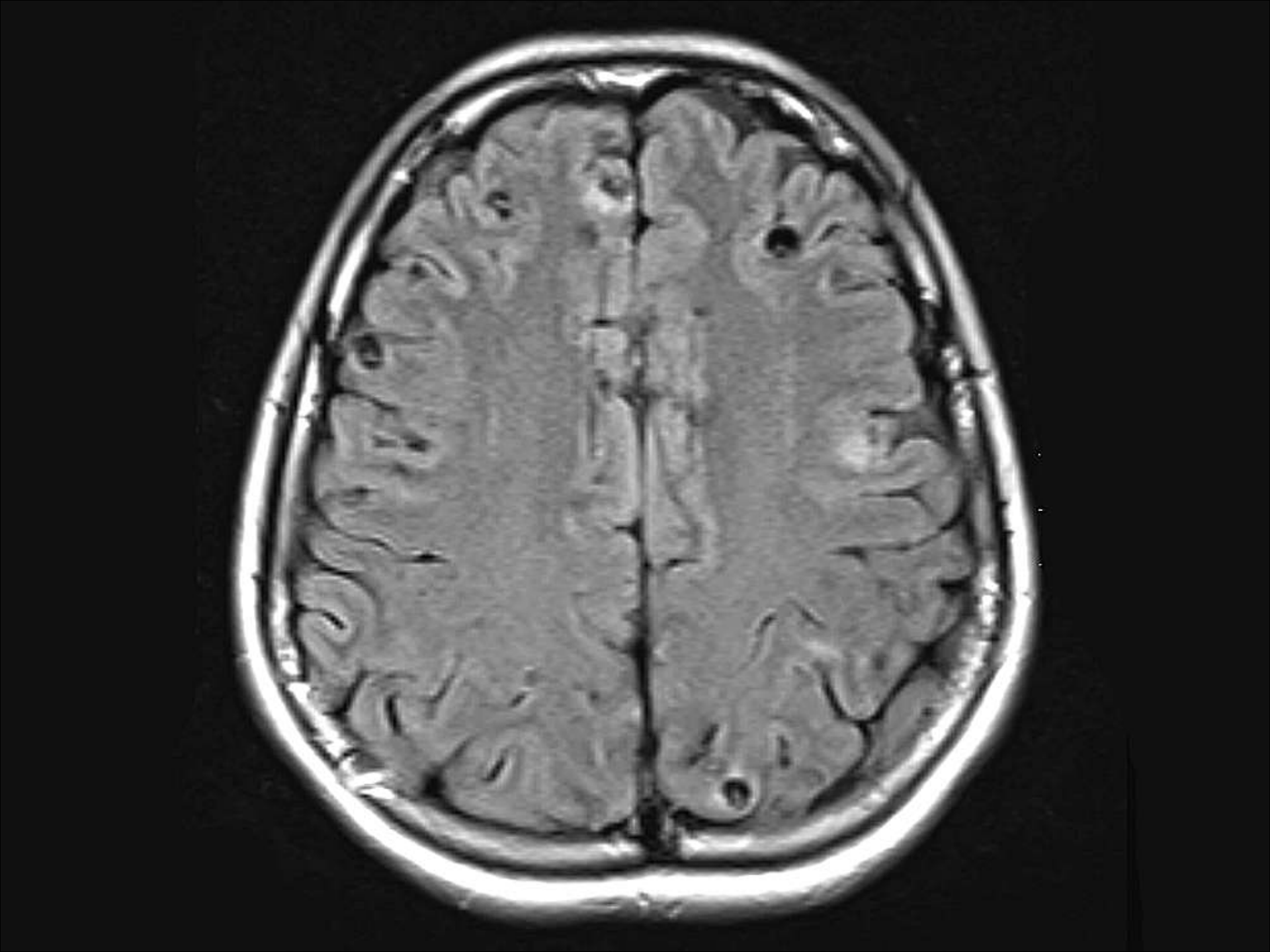
In Sept 2009 she presented to have a cysticercus removed from behind her right ear.

This was causing irritation to her glasses.

By this time she had had a second course of treatment.

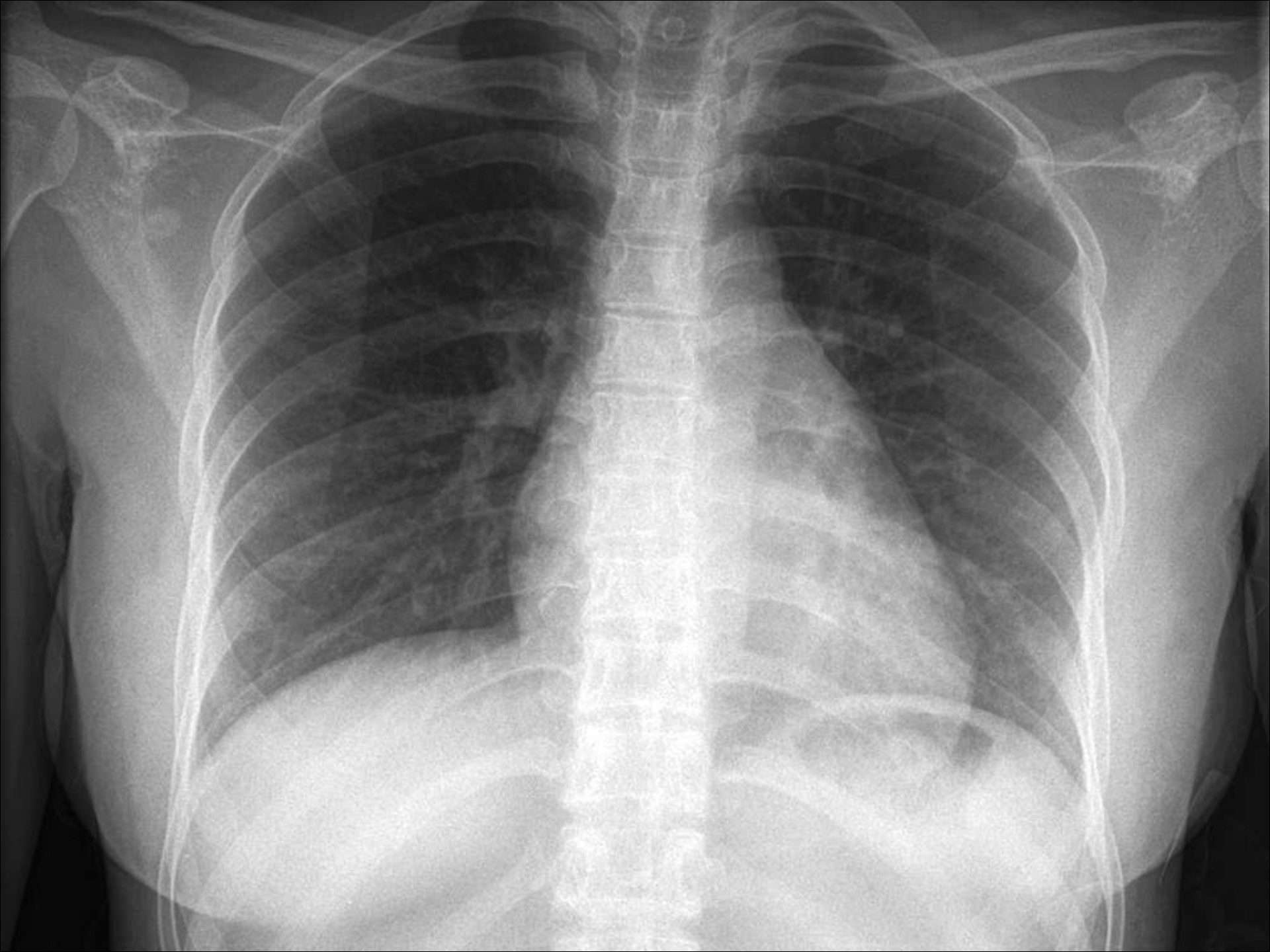
The CT of brain showed many fewer cysticerci than had been present before.





A chest X ray during this Sept. 2009 admission showed a rounded opacity over the right scapula that had not been seen before.

This was another subcutaneous cysticercus.

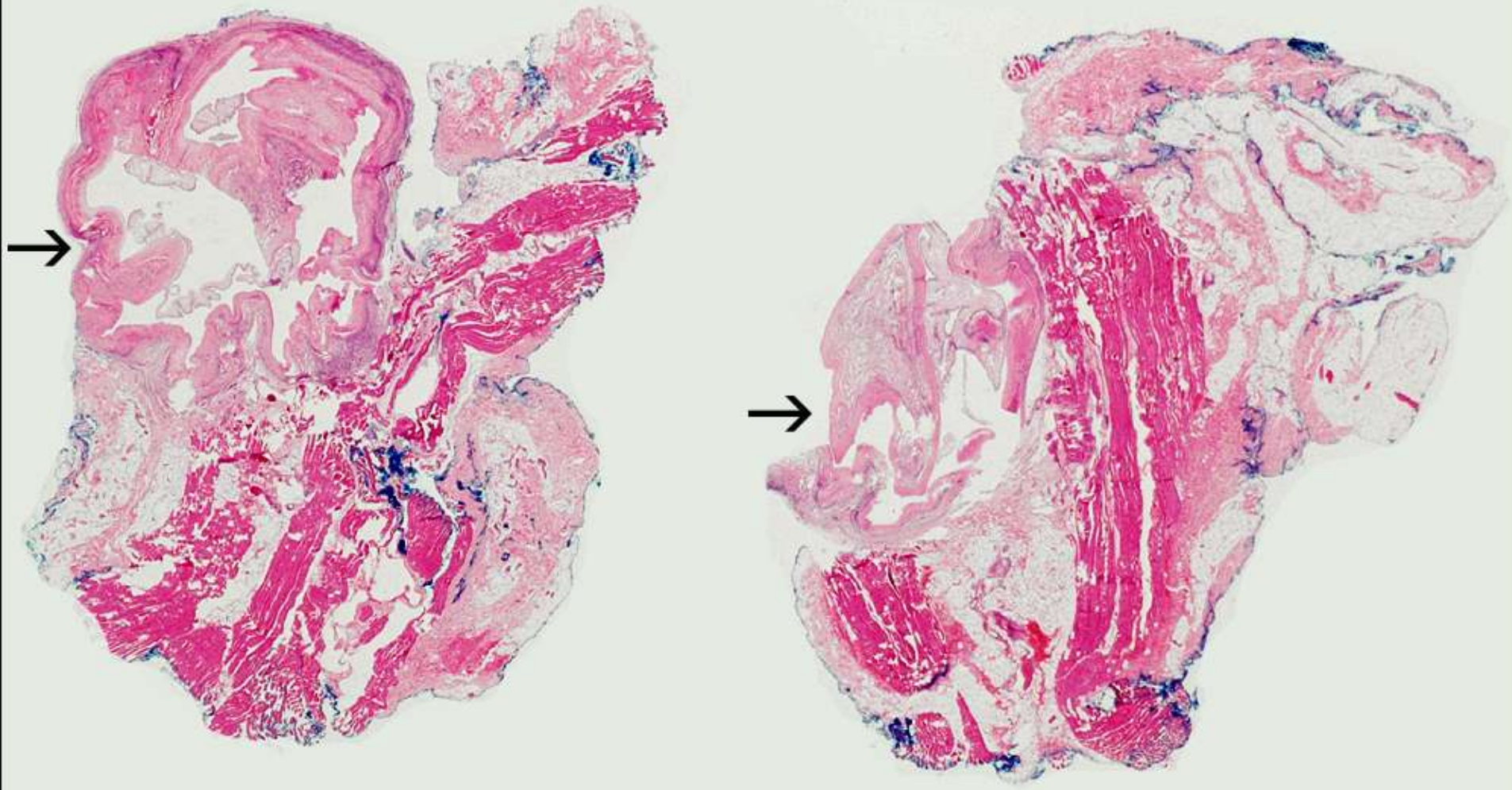


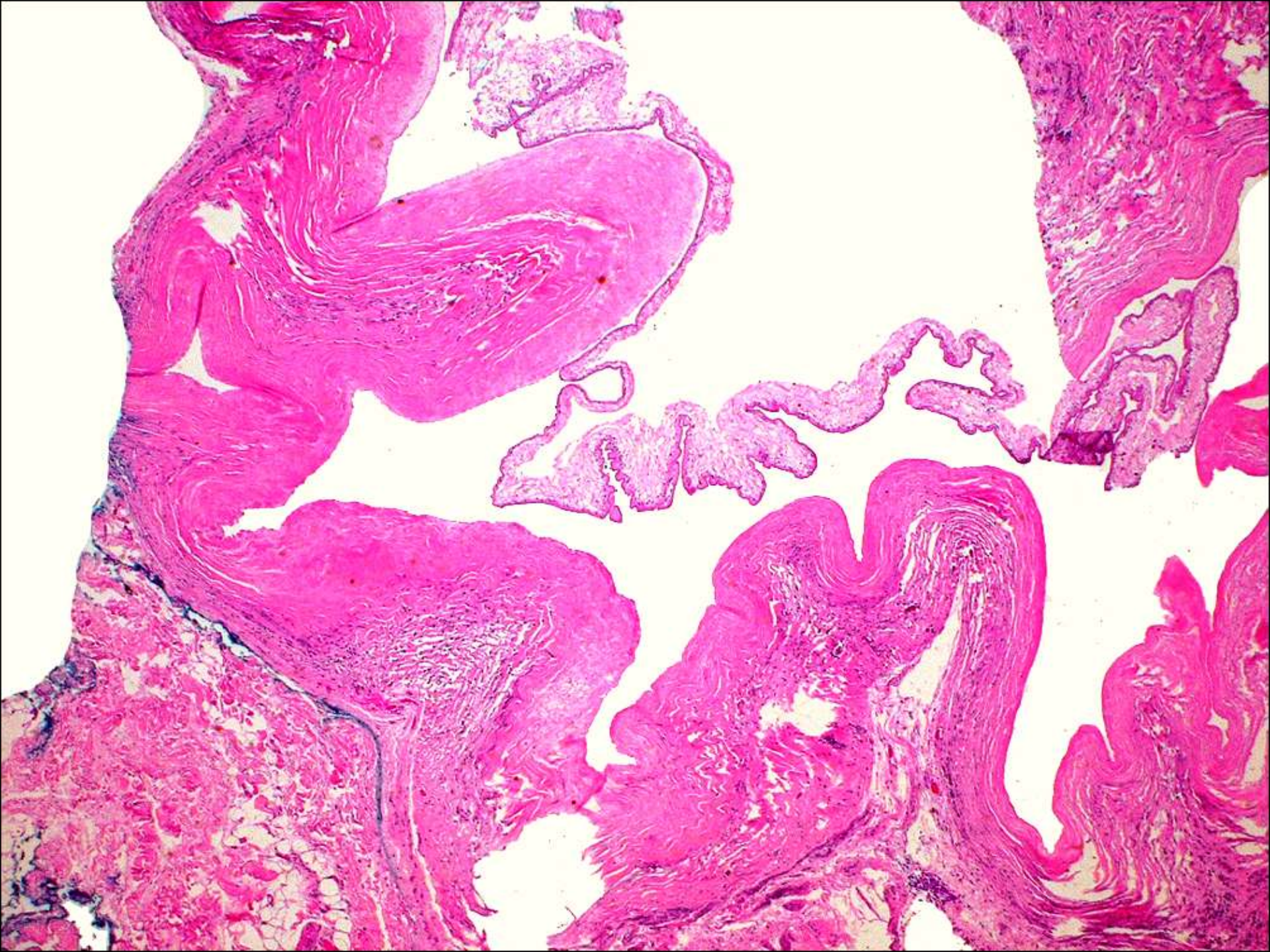
The operative specimen was submitted to the lab, and the cut up person sliced it in half, embedded half and left the other half in the specimen jar.

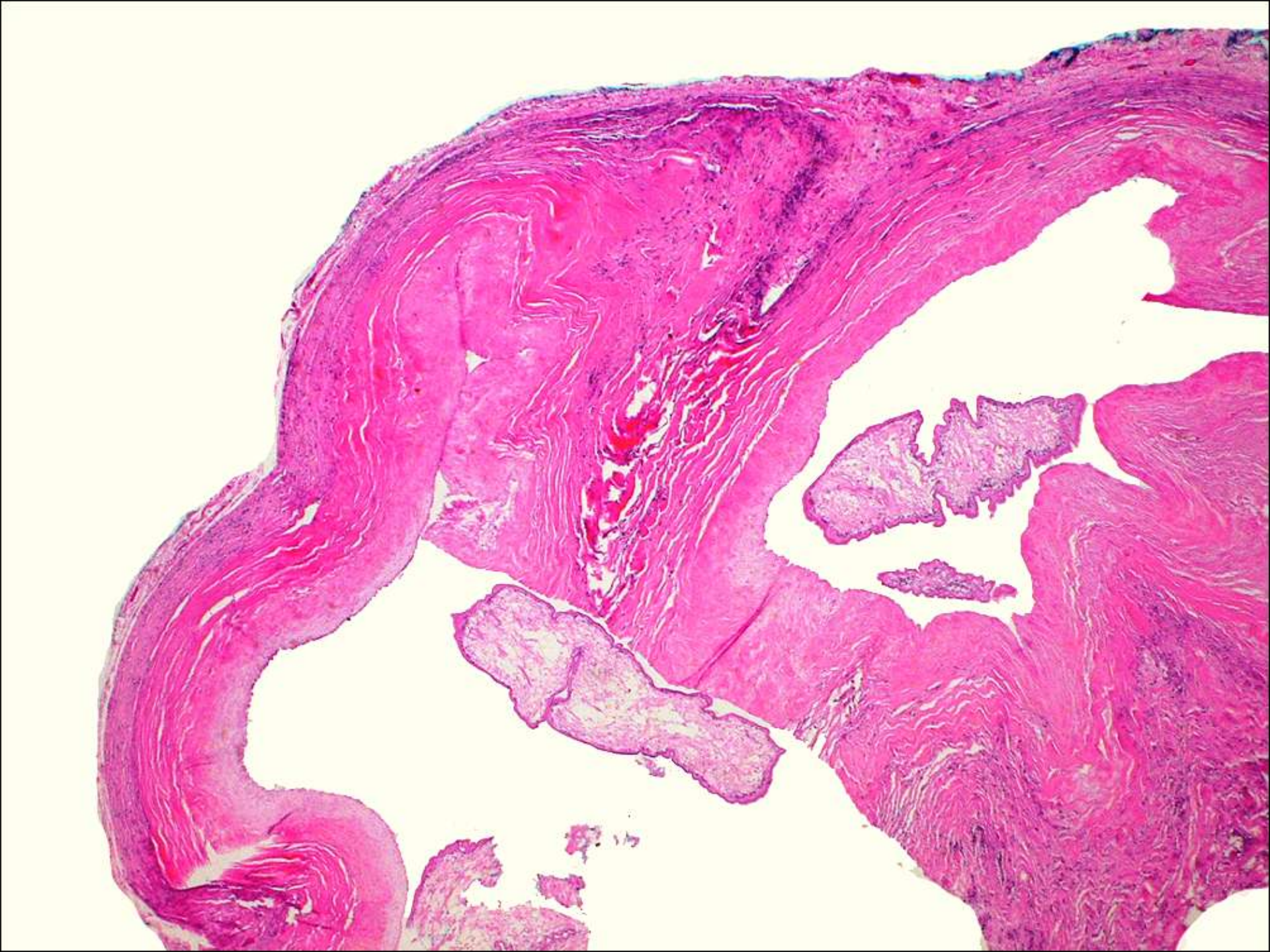
Some membrane was seen in the section, and fortunately when the rest of the specimen was ‘rescued’ from the specimen jar more membrane was found.

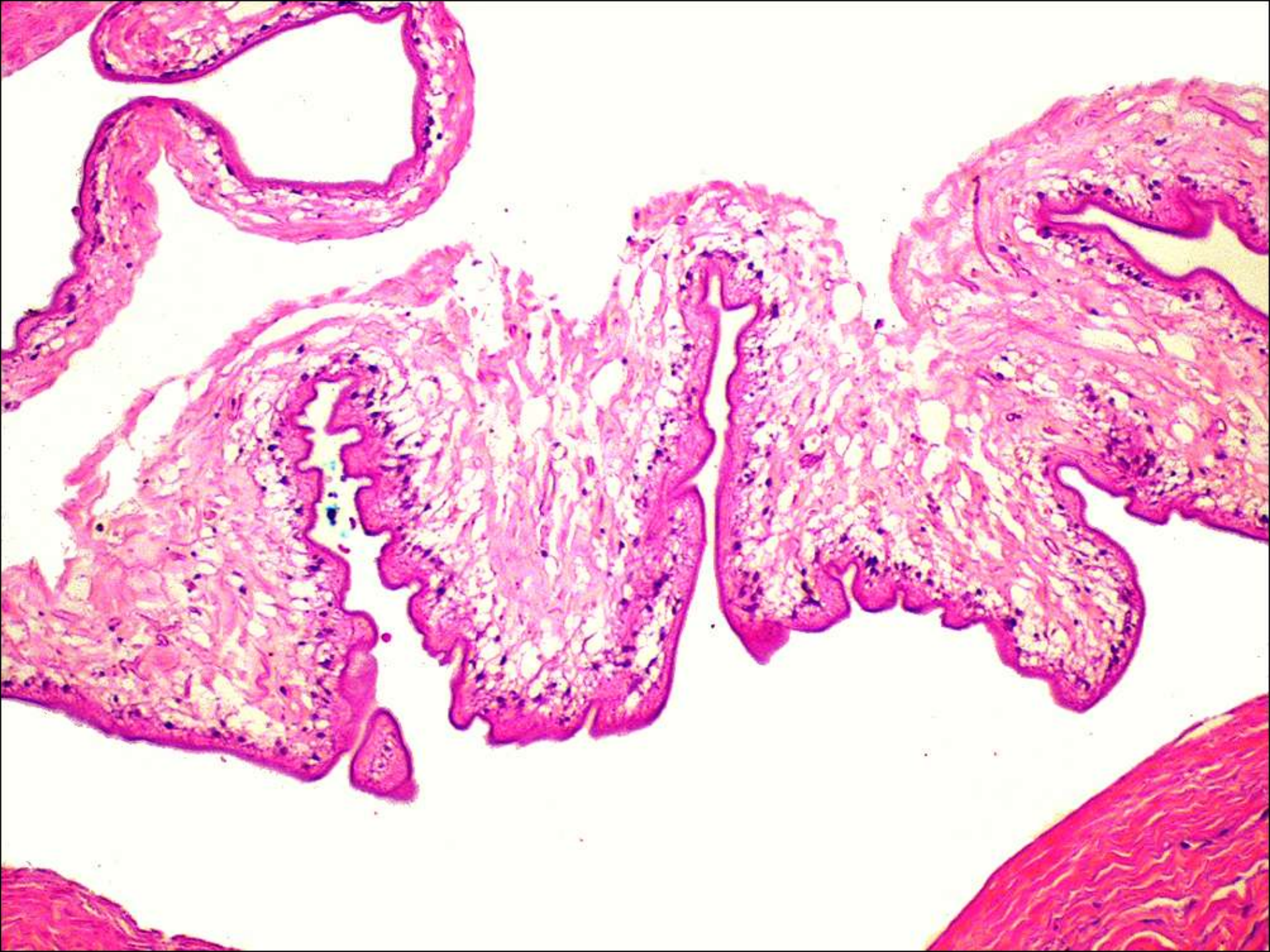
No worm head was found.

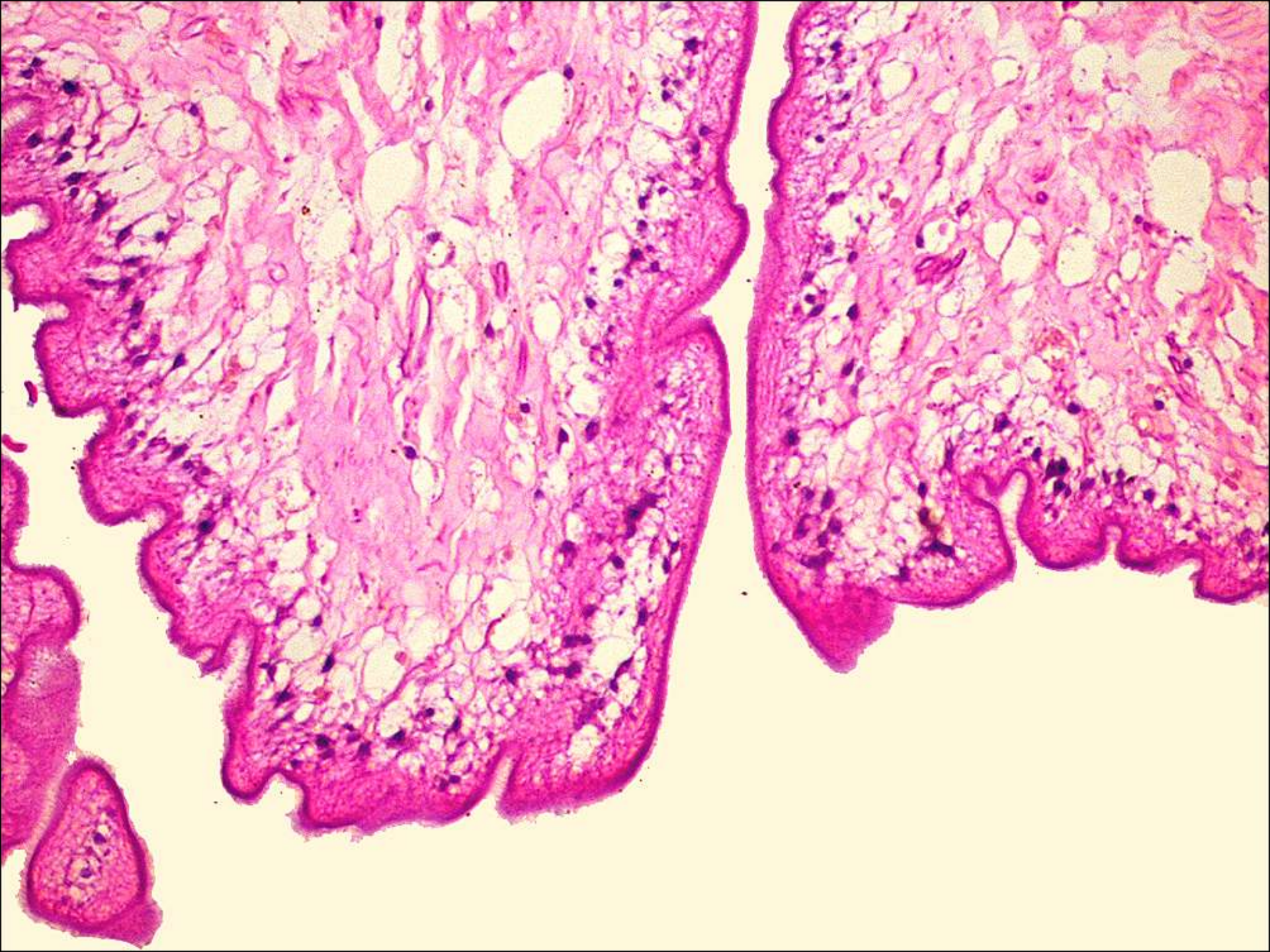
Presumably because it had been killed by the treatment.

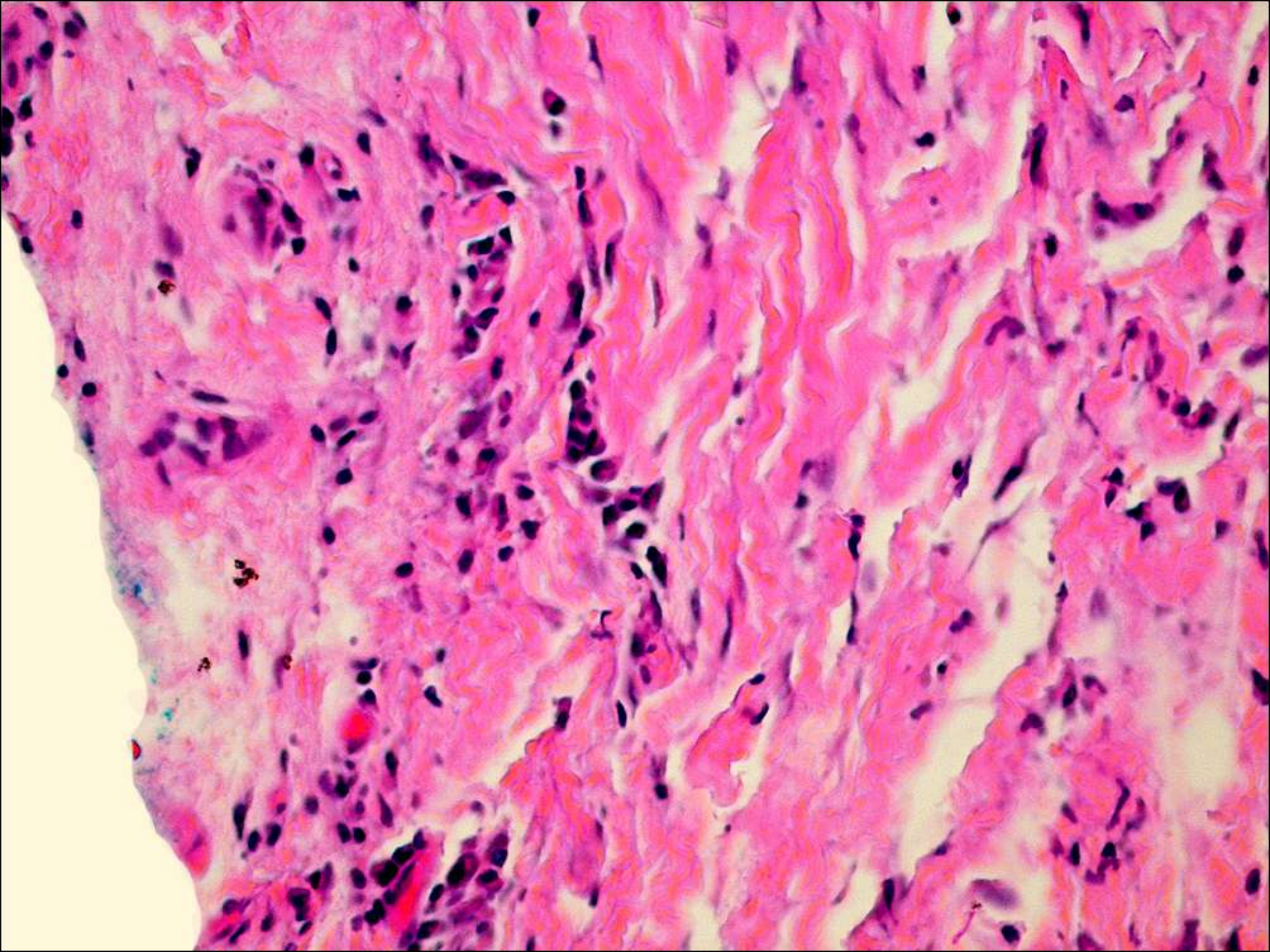


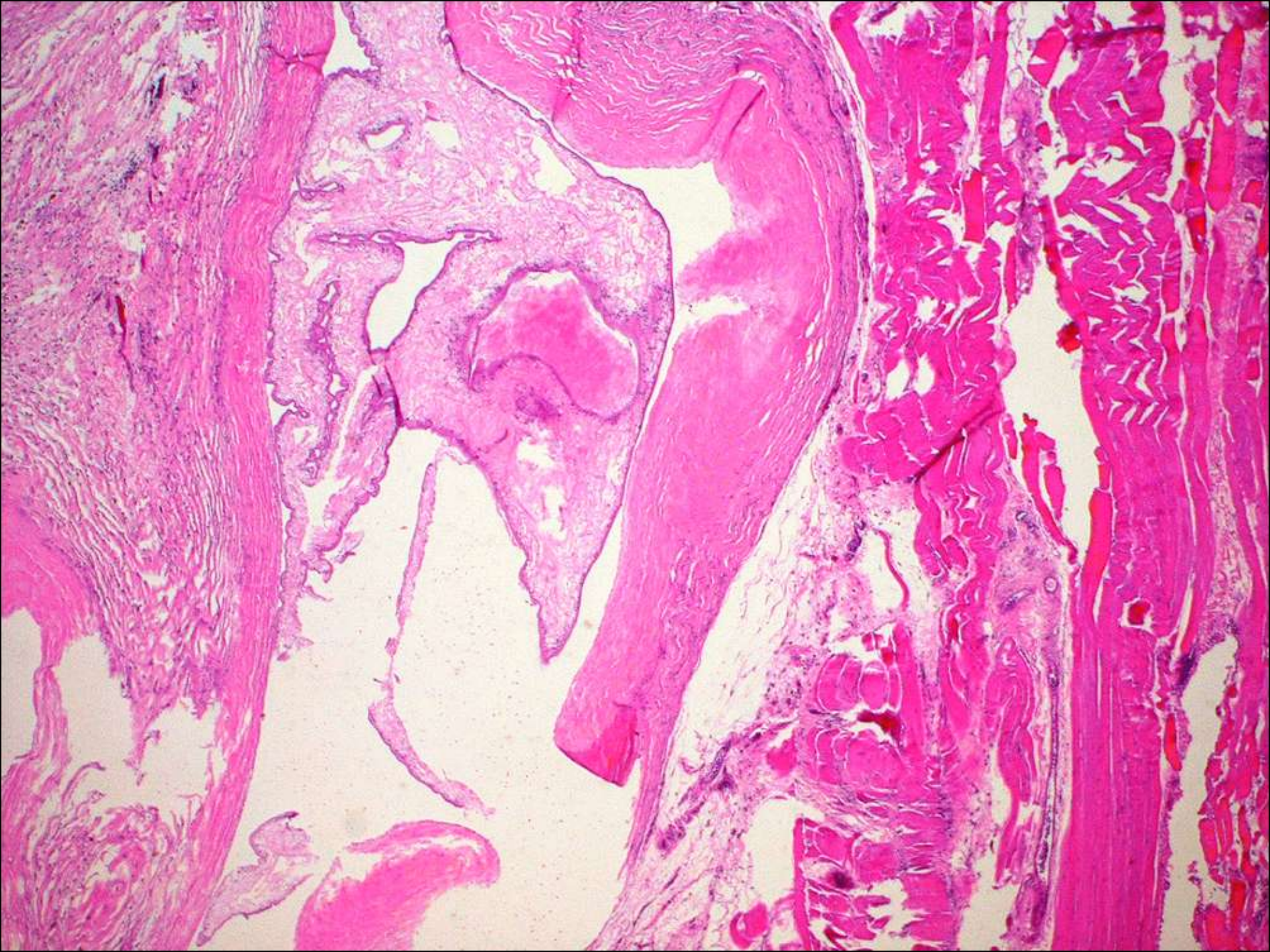










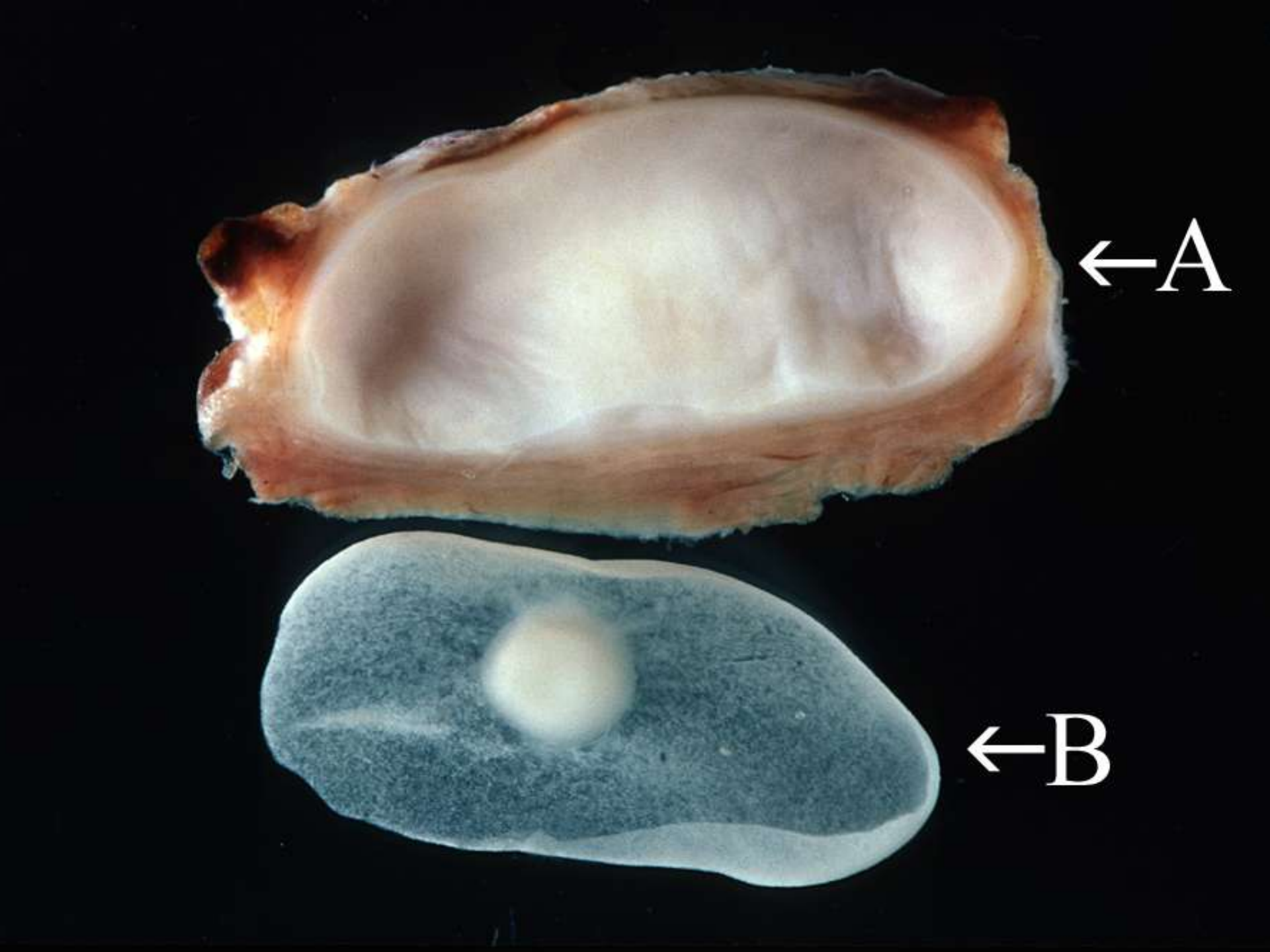


Gross appearance of a subcutaneous cysticercus.

When the cyst is cut across one sees a thin, white transparent membrane that floats out of the cyst.

In one half of this transparent membrane one sees a white nodule.

This is the head of the new *Taenia solium* worm.


←A
←B

If this is left in the specimen jar, or worse washed down the sink, one cannot make a diagnosis on the appearance of the cyst wall because this just shows a foreign body reaction.

Cysticercosis

Pig with adult *T. solium* in the intestine.

↓

Eggs hatch in the intestine and the resulting oncospheres are carried in the blood to where they develop into cysticerci in muscle and other organs.

↓

Humans eat infected, undercooked pig meat and the scolices in the cysticerci develop into an adult tapeworm in the small intestine.

↓

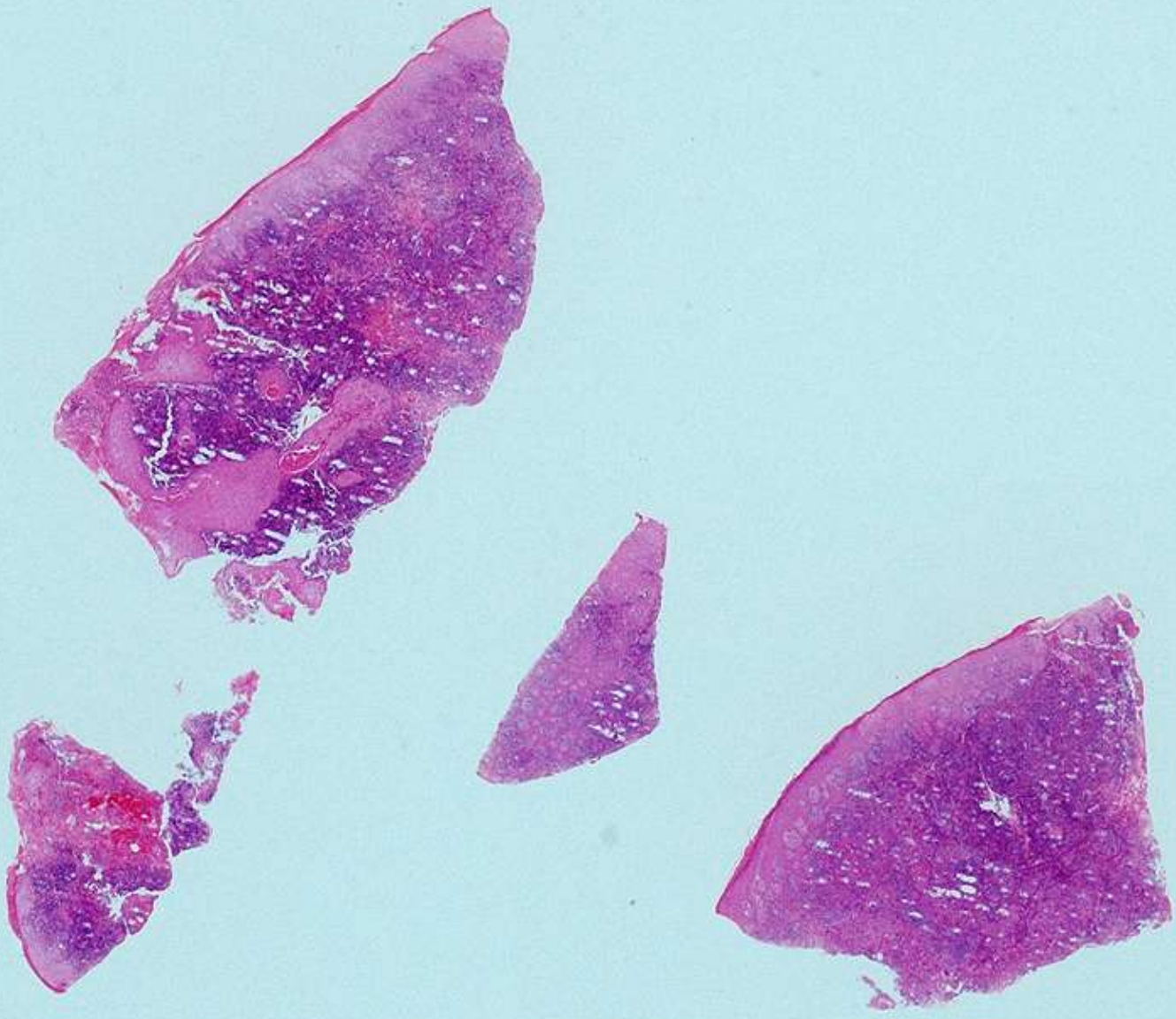
Humans who already harbor an adult worm in their own intestine may get cysticercosis from ingesting eggs or gravid proglottids passed in their feces by hand-to-mouth infection—autoinfection.

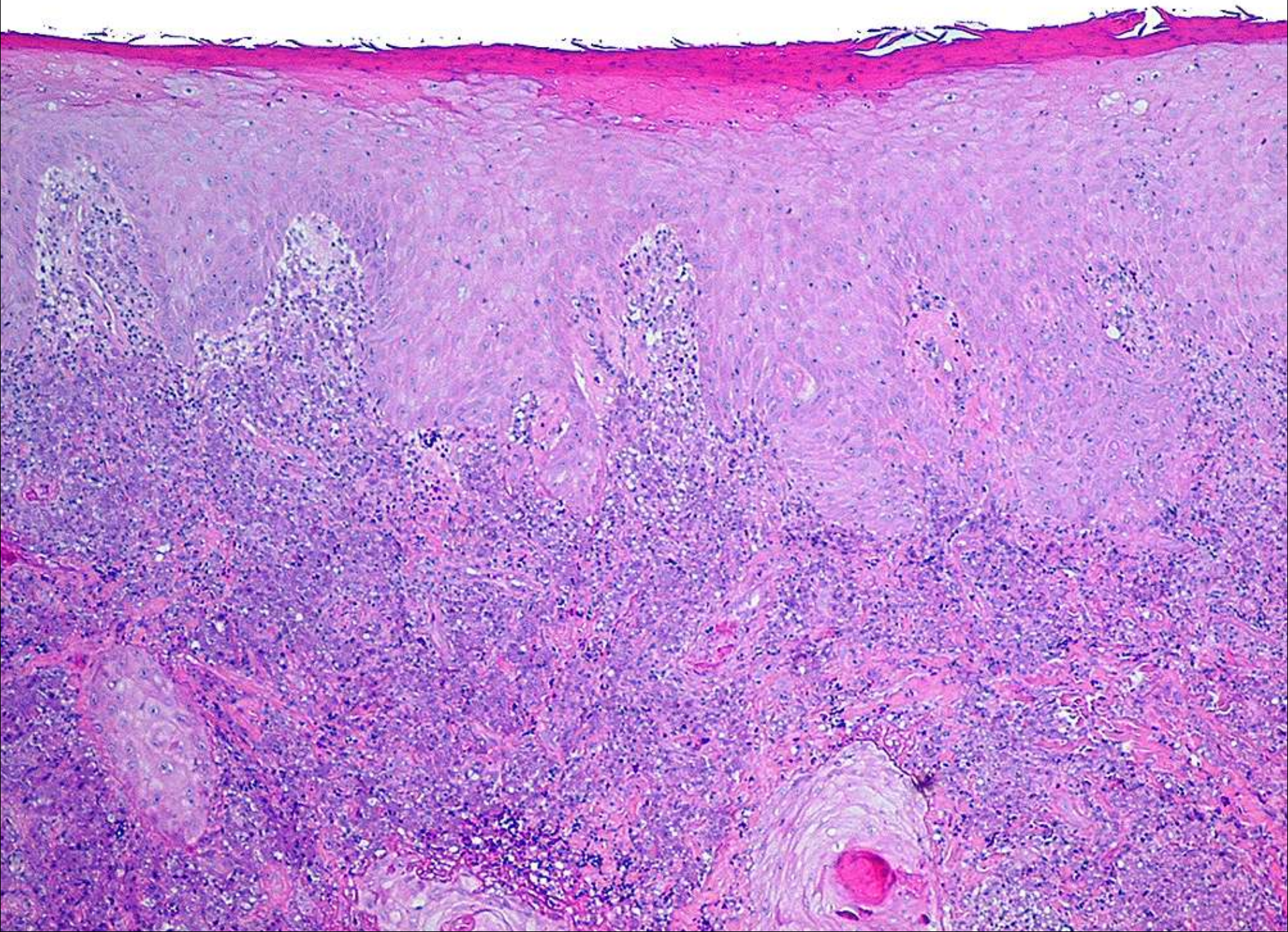
Cutaneous leishmaniasis

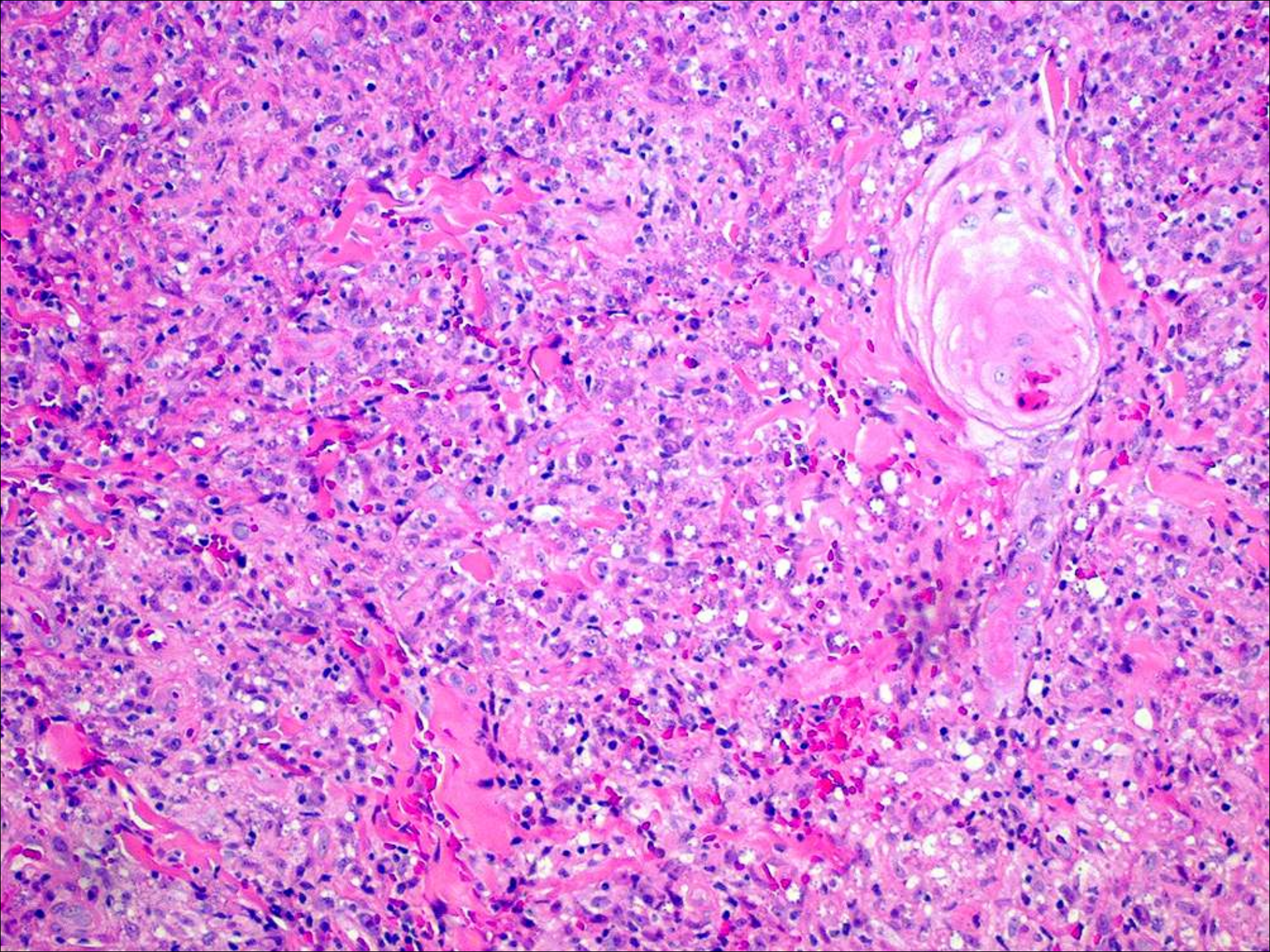
A M 25 Afghan refugee to Australia presented with a non healing ulcer on the dorsum of the right foot.

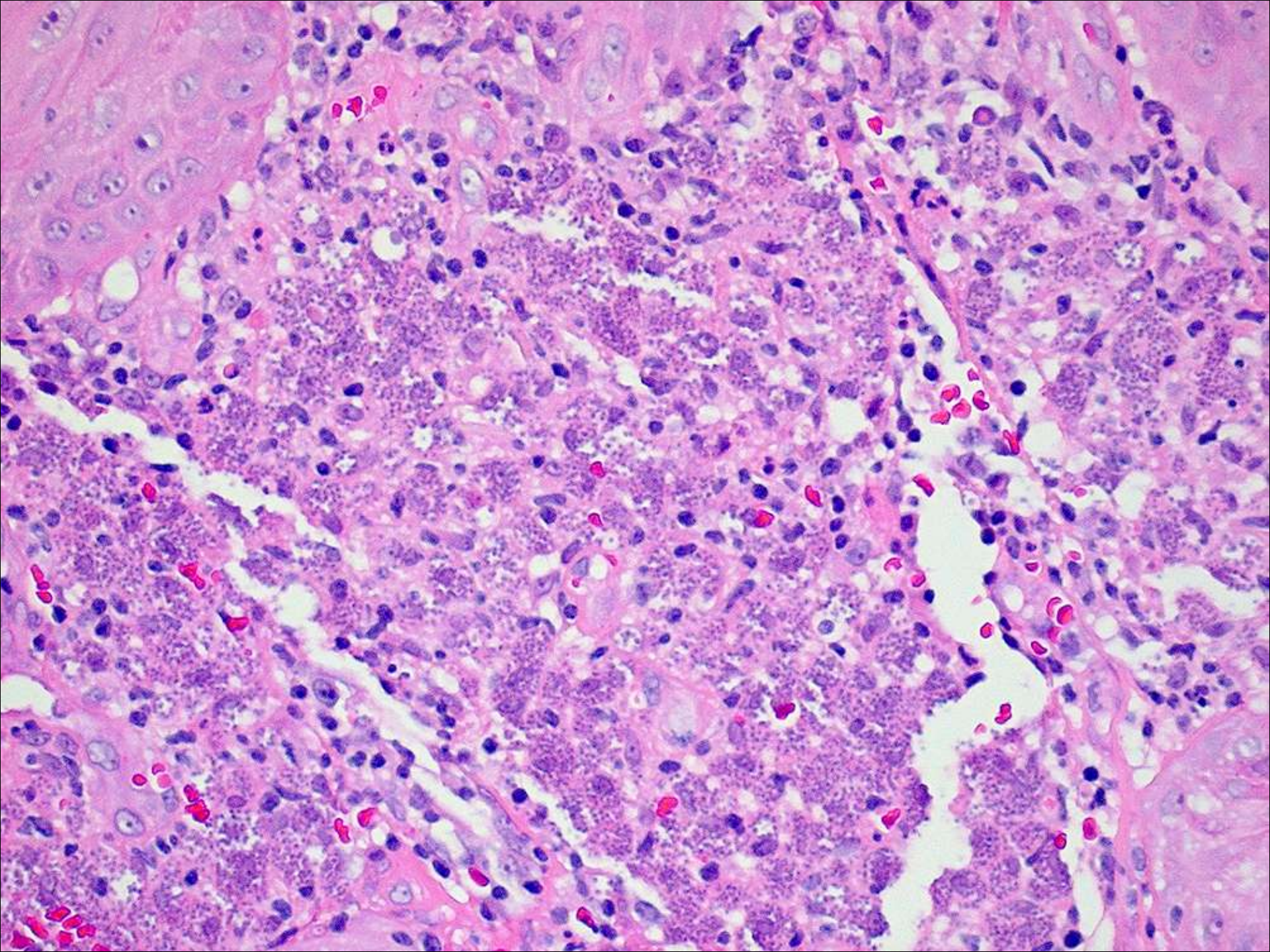
Examination revealed a similar but smaller ulcer on the dorsum of his left foot.

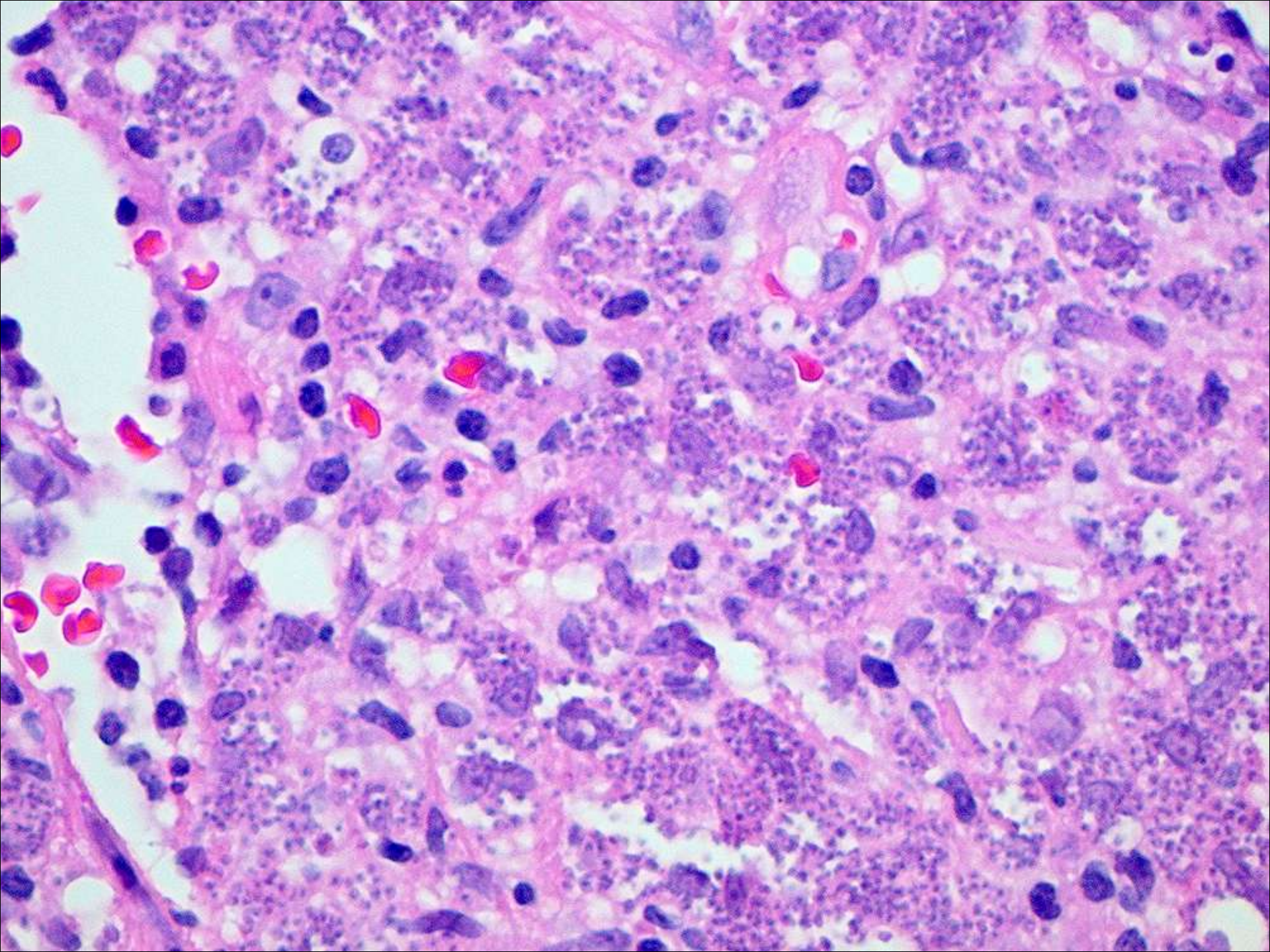
He had been in Australia for 3 months.

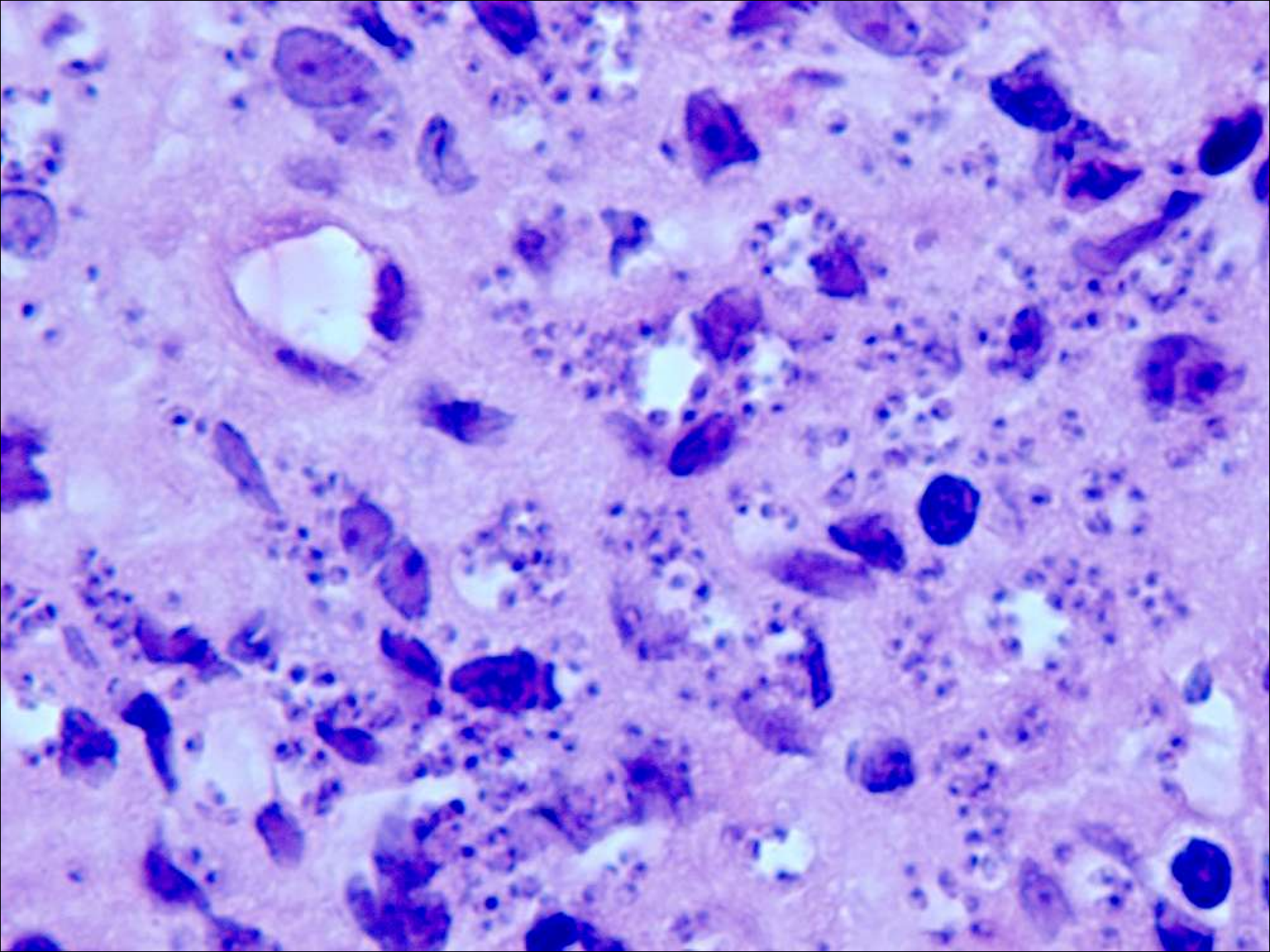










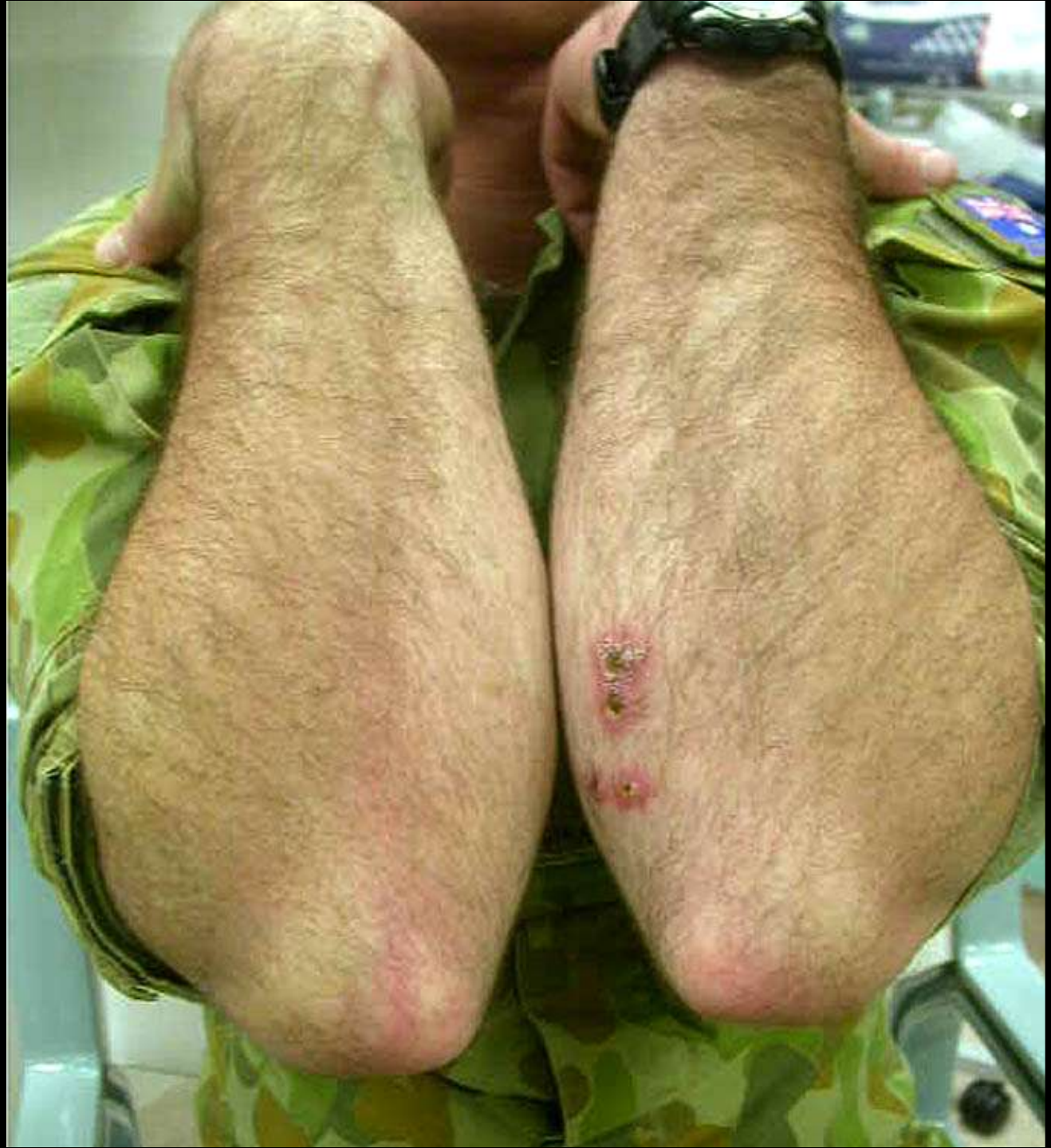


Cutaneous leishmaniasis in Australian Servicemen serving in Iraq

Cases donated
by
Jenny Robson
Head microbiology department
and Infectious Diseases Physician
S&N Pathology, Brisbane, Australia

Approximately 10 weeks after returning from a tour of duty in southern Iraq, four young Australian soldiers complained of having non healing cutaneous ulcers.

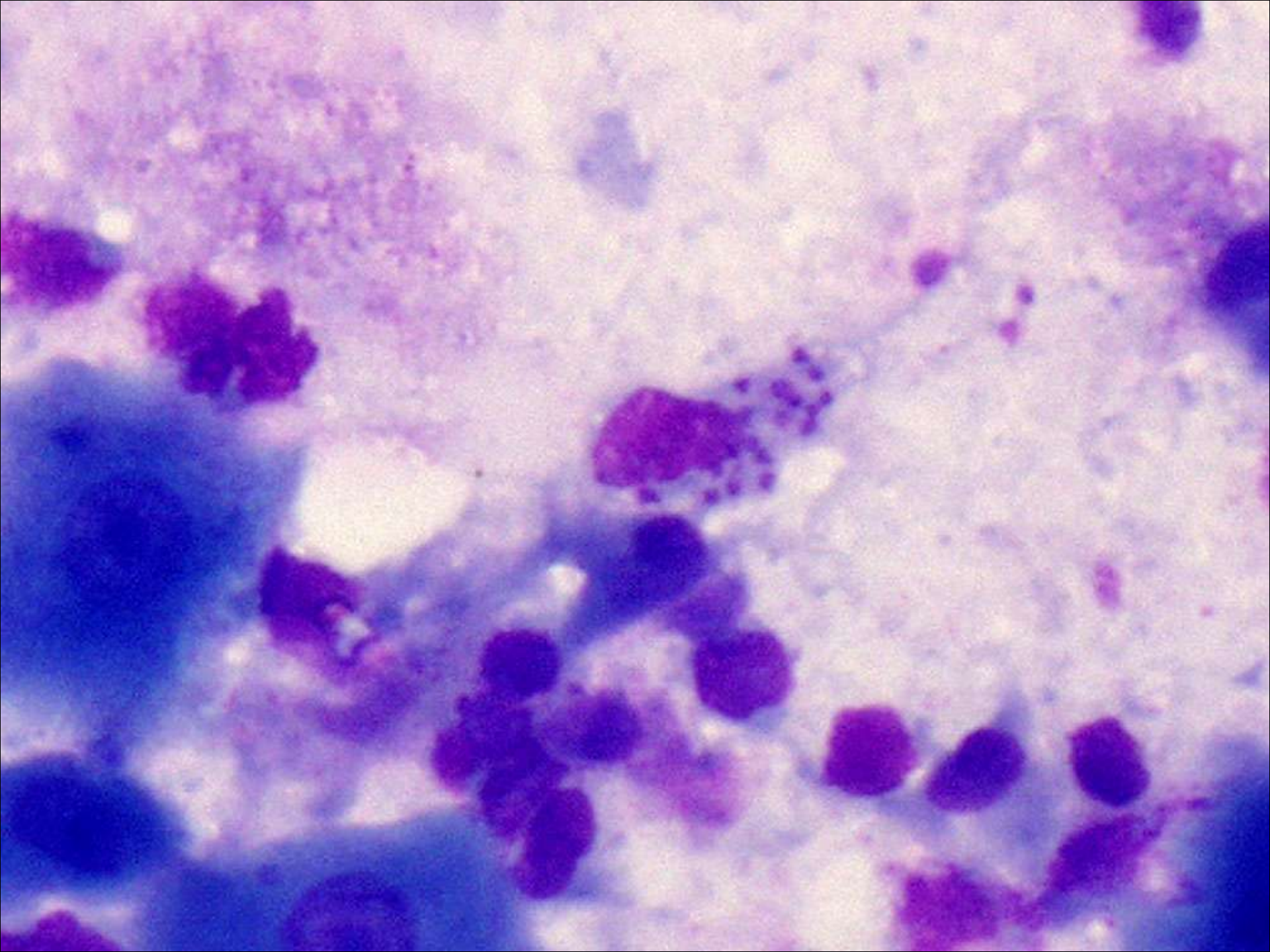
Three of them had ulcers on their forearms and one had ulcers around his right and left medial malleoli.



Biopsies of the ulcers were taken from all of the soldiers.

Touch preparations were made from the fresh biopsy tissue of two of them.

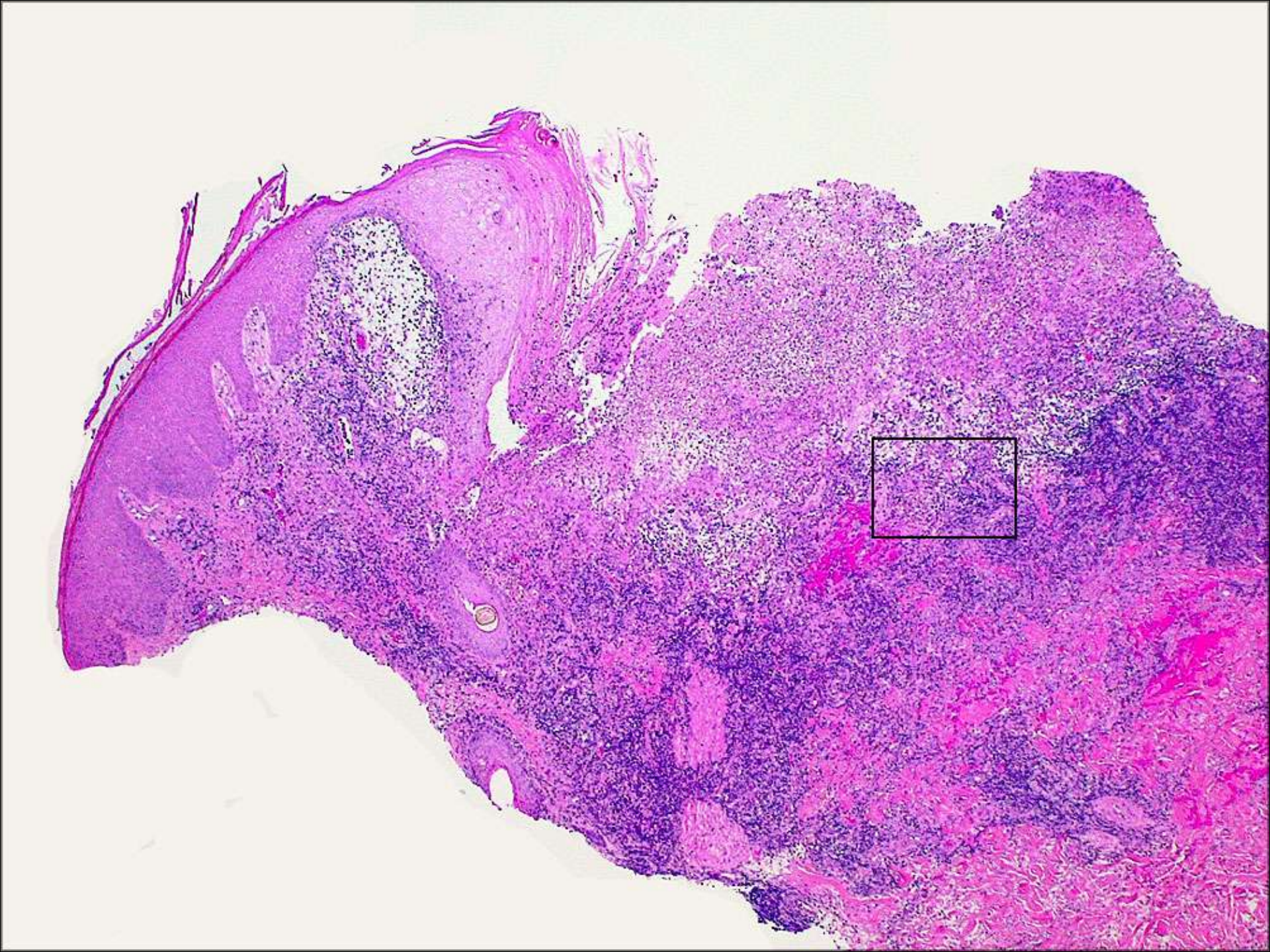
Both touch preparations showed intracellular amastigotes.

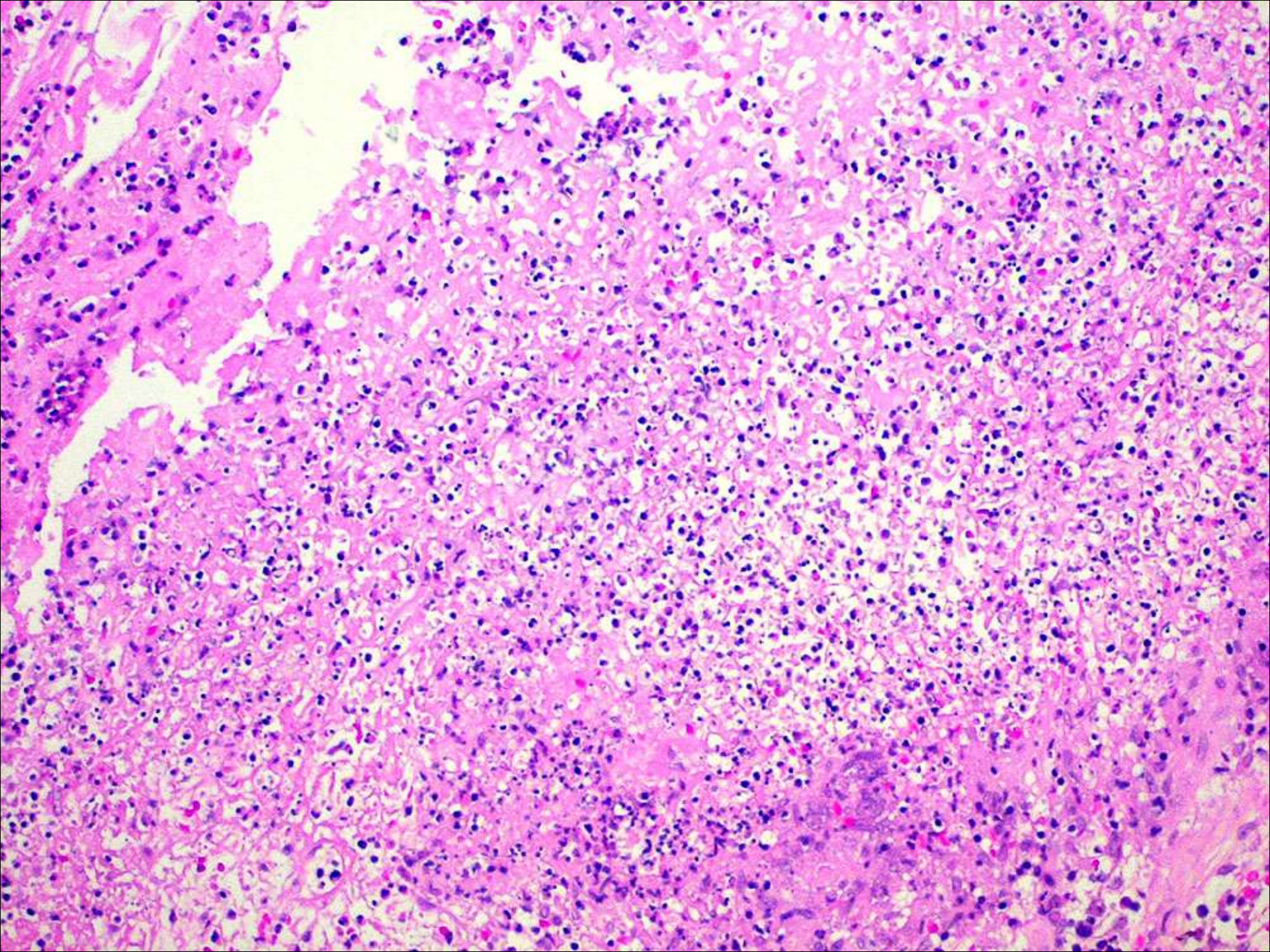


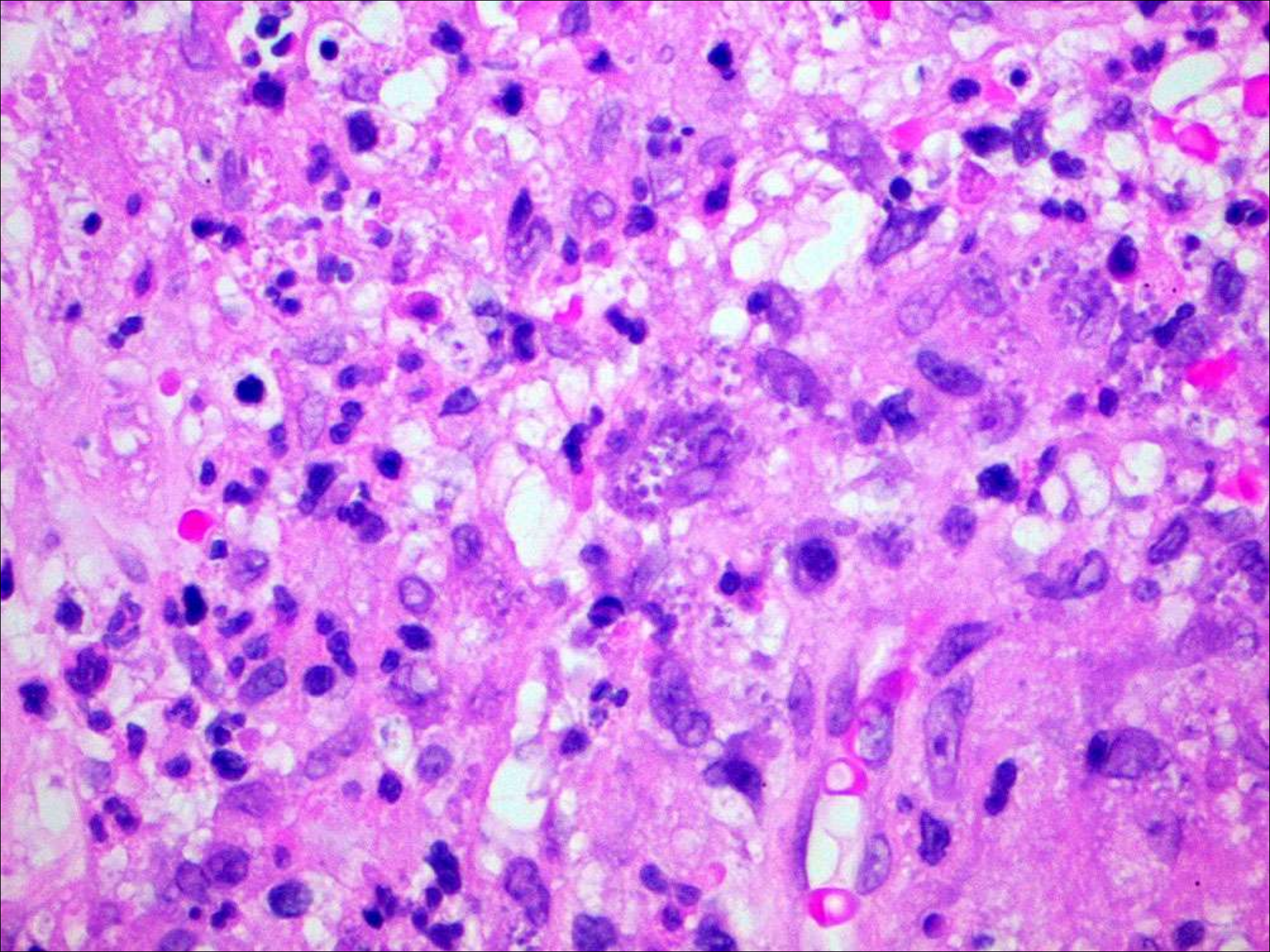
The biopsies showed an inflammatory infiltrate throughout the dermis.

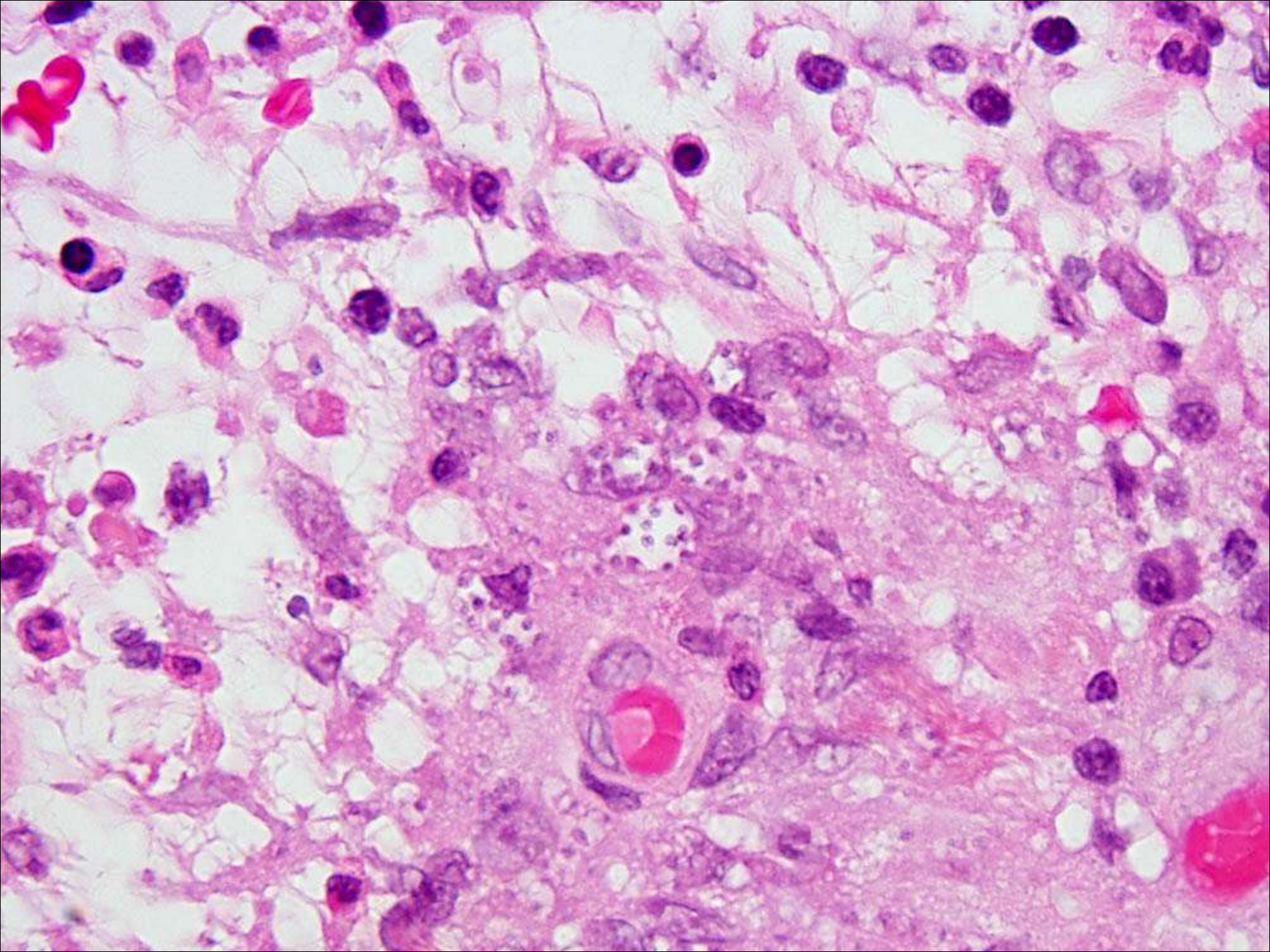
The inflammatory infiltrate was mainly monocytic with a few neutrophils.

Small numbers of histiocytes with intracellular parasitic amastigote forms were found.





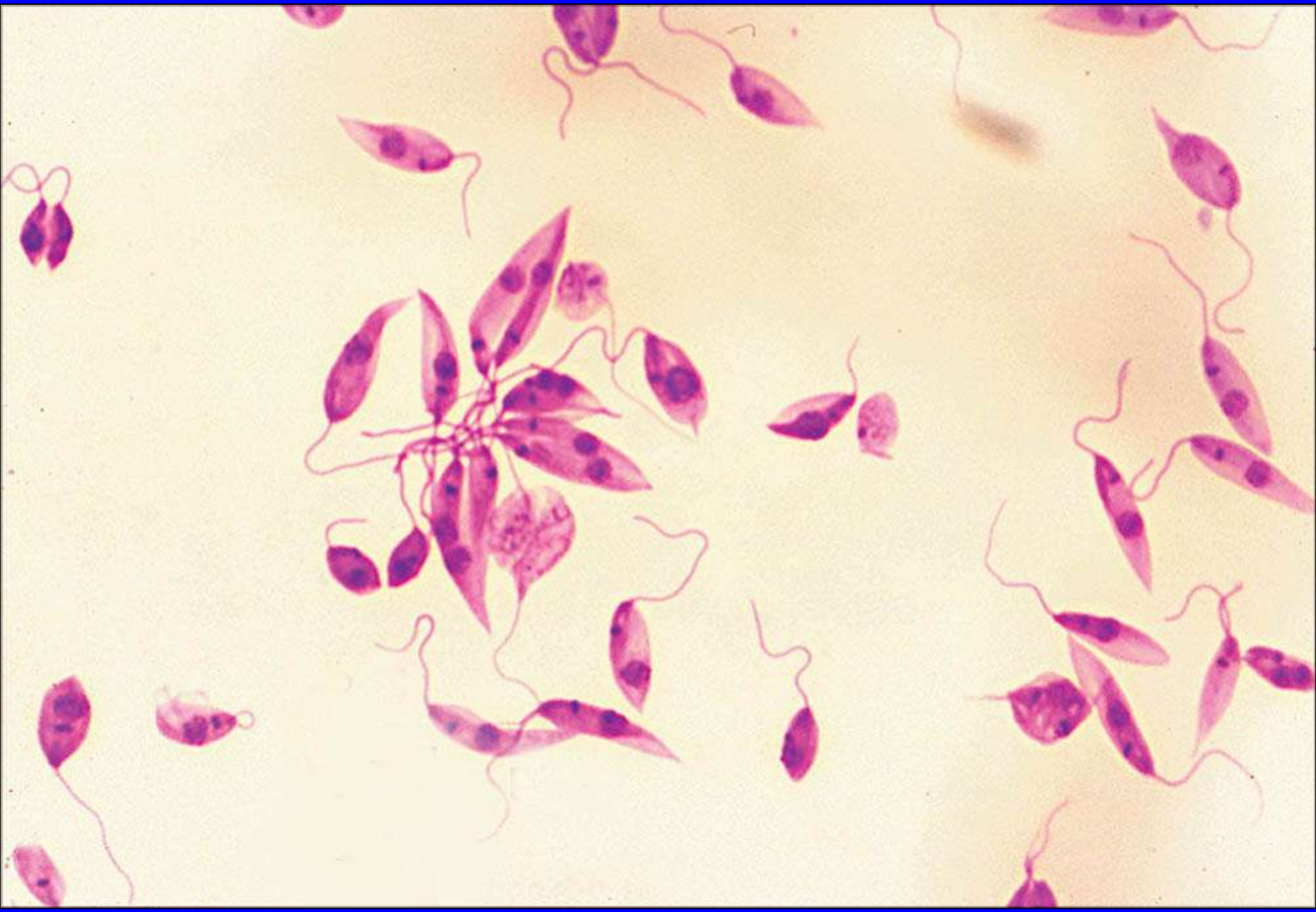




The fresh biopsy tissue from all four patients was inoculated into Schneider's *Drosophila* medium. (Haemoflagellate medium).

All 4 gave a positive result.


Haemoflagellate medium
Batch 7G073 exp 5/01/08
Name:



Two cases donated by Selwa Sheik, Saudi Arabia to demonstrate the features seen in an area of endemic disease.

Case 1 shows an active immunological reaction

Case 2 shows a minimal immunological reaction.

Nested ITS1-PCR was performed on the cultured promastigotes.

The resulting ITS1 amplicon was digested with the restriction enzyme Hae III.

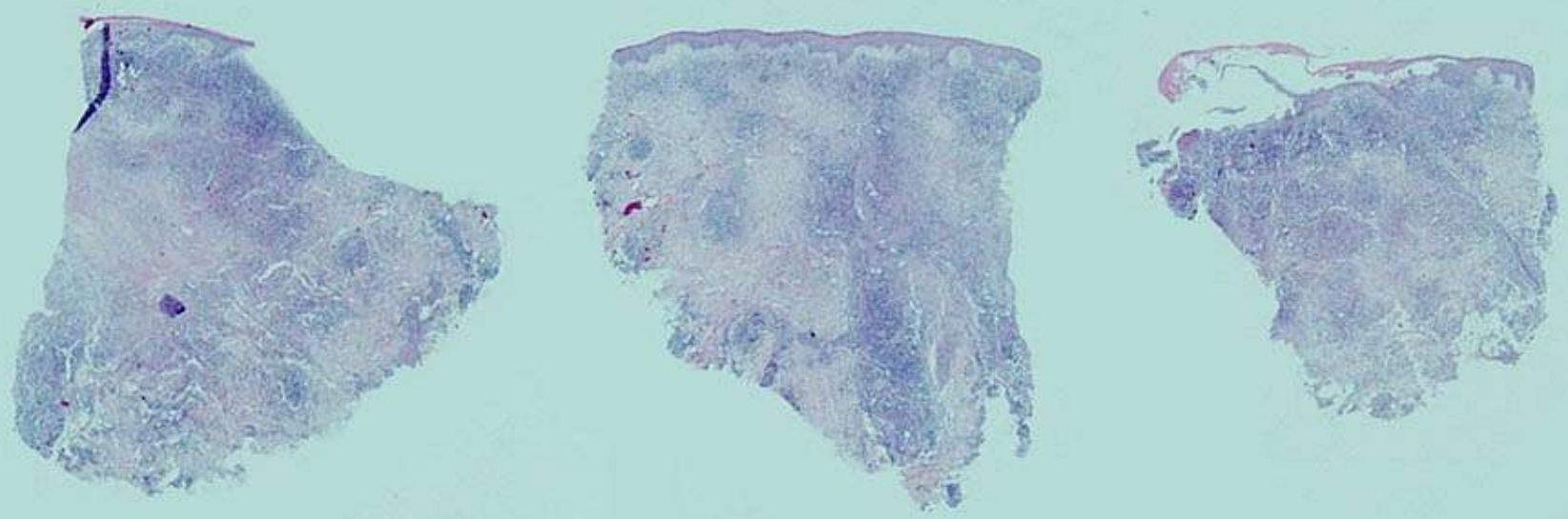
This identified the species in each case to be *Leishmania major*.

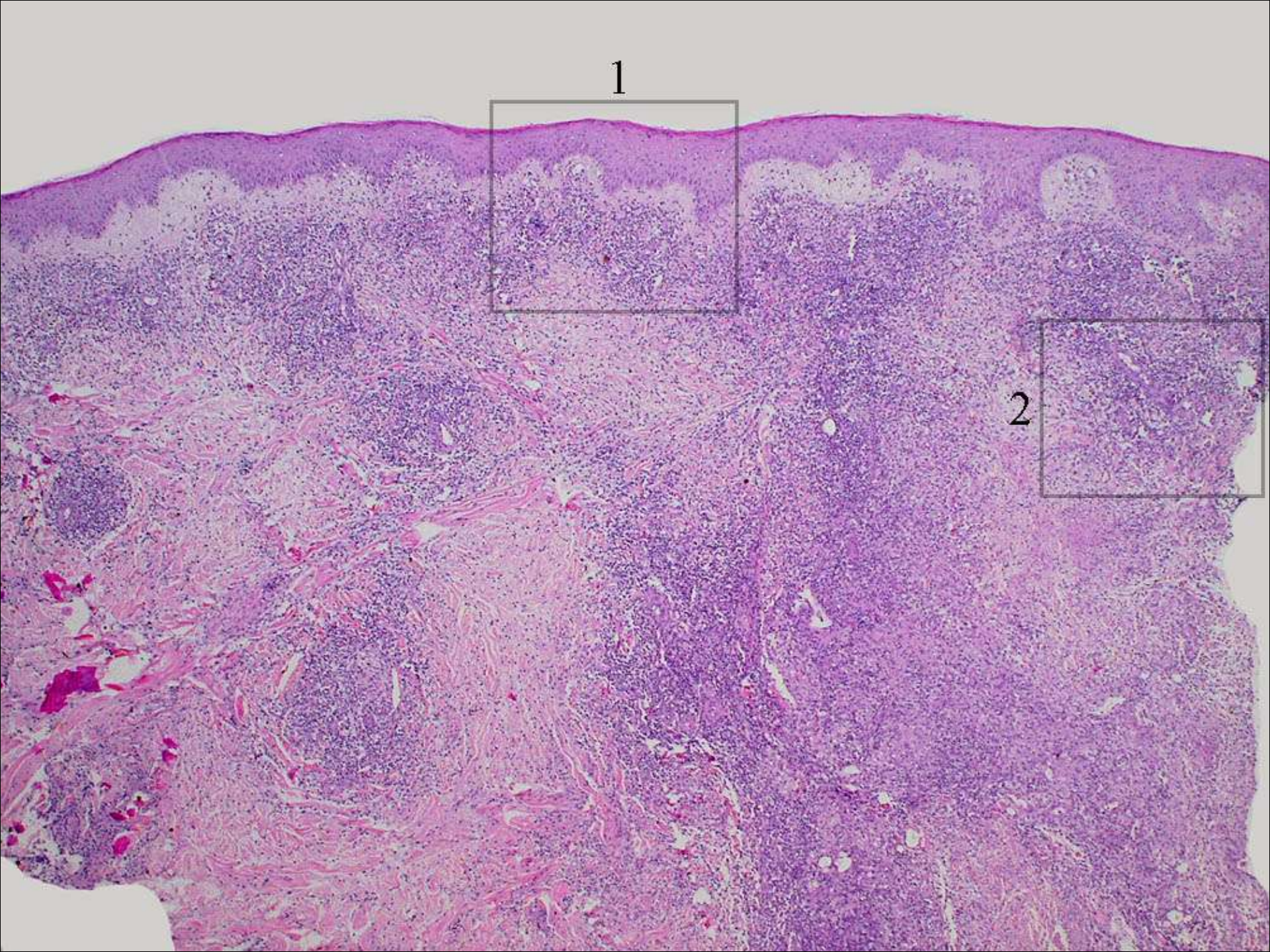
Case 1

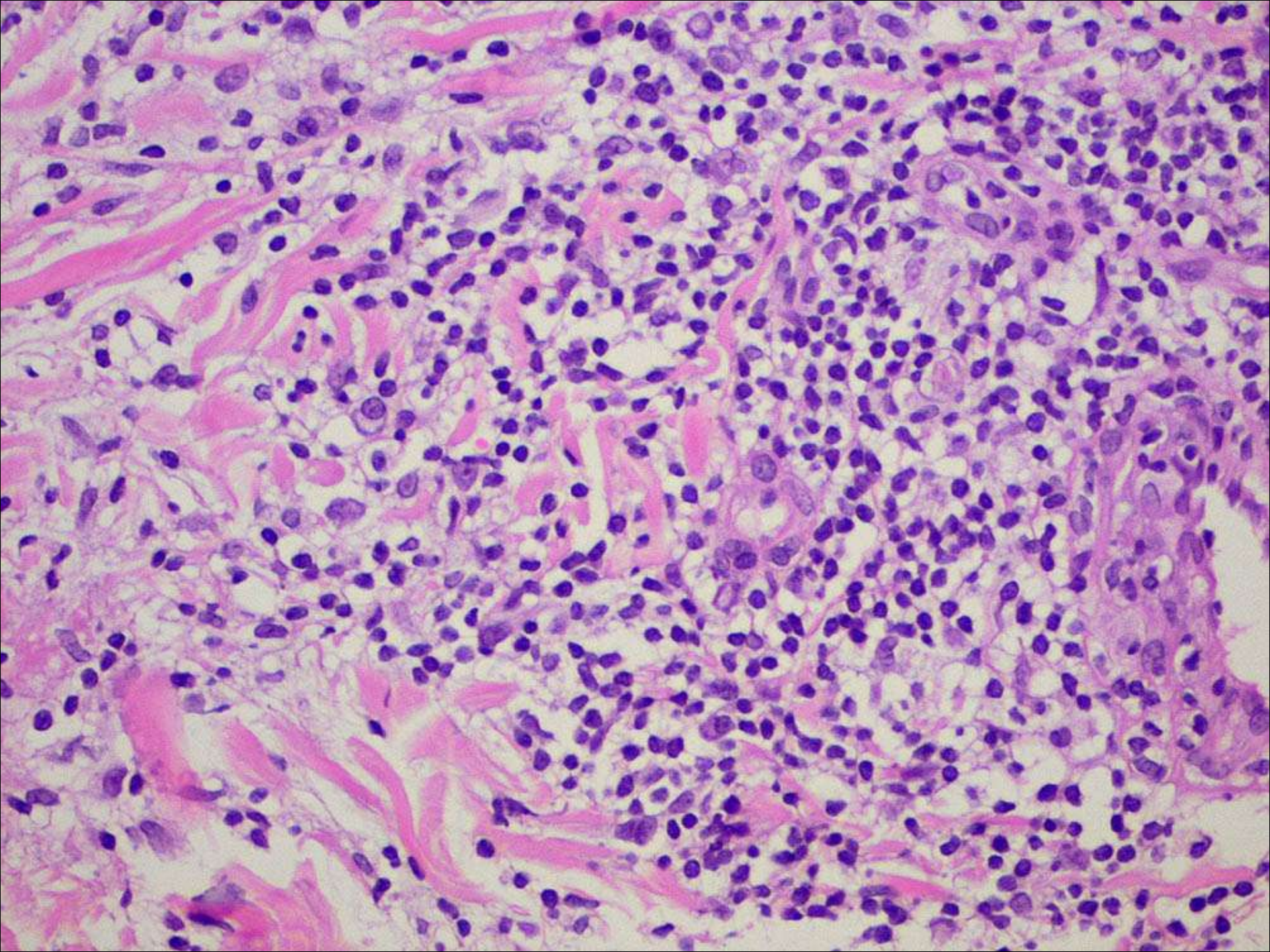
A 36 year old Syrian woman residing in Saudi Arabia presented with a long standing scaly skin lesion about 3 cm in diameter on her left forearm.

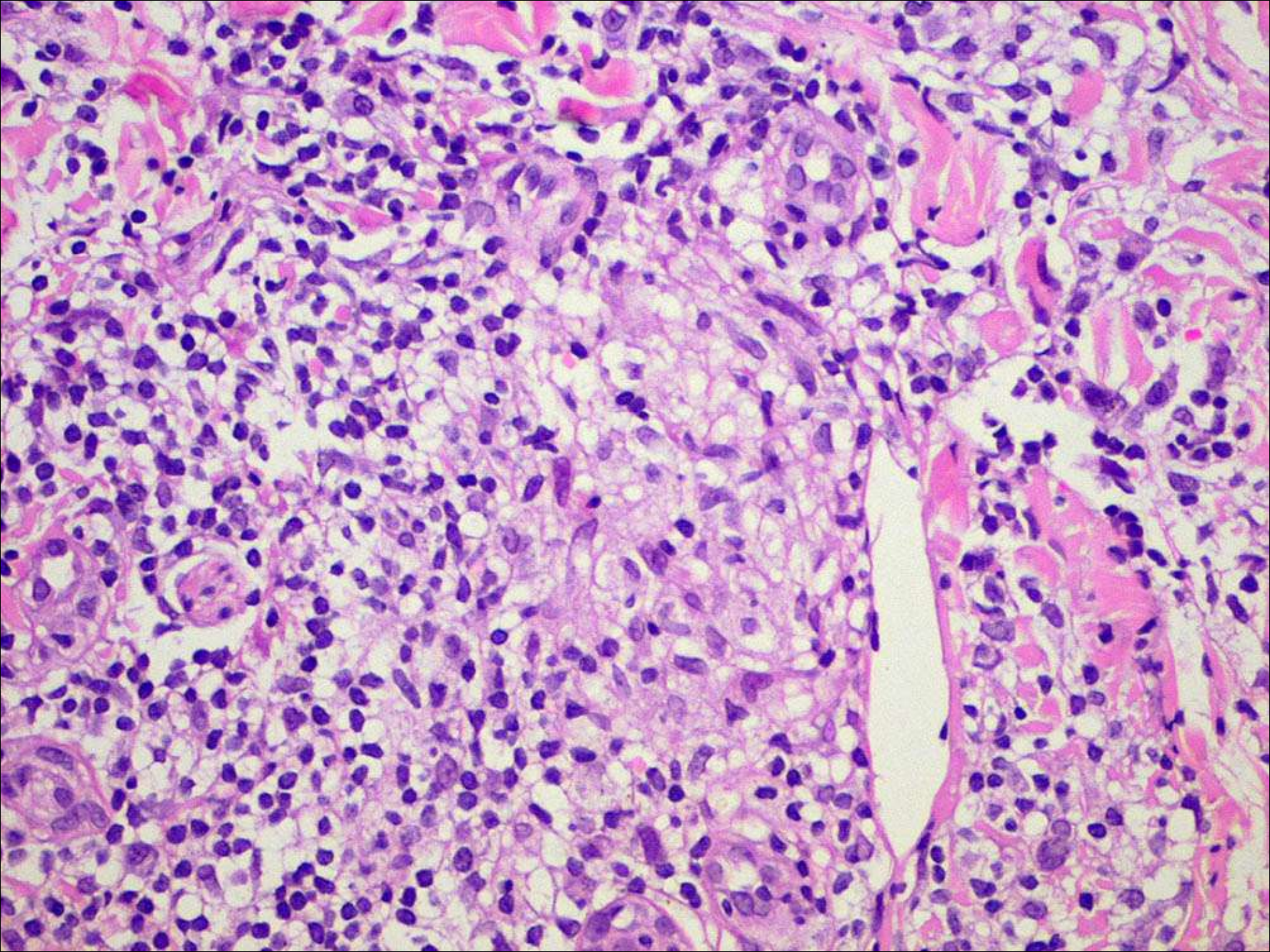
A 4 millimeter skin punch biopsy was obtained.

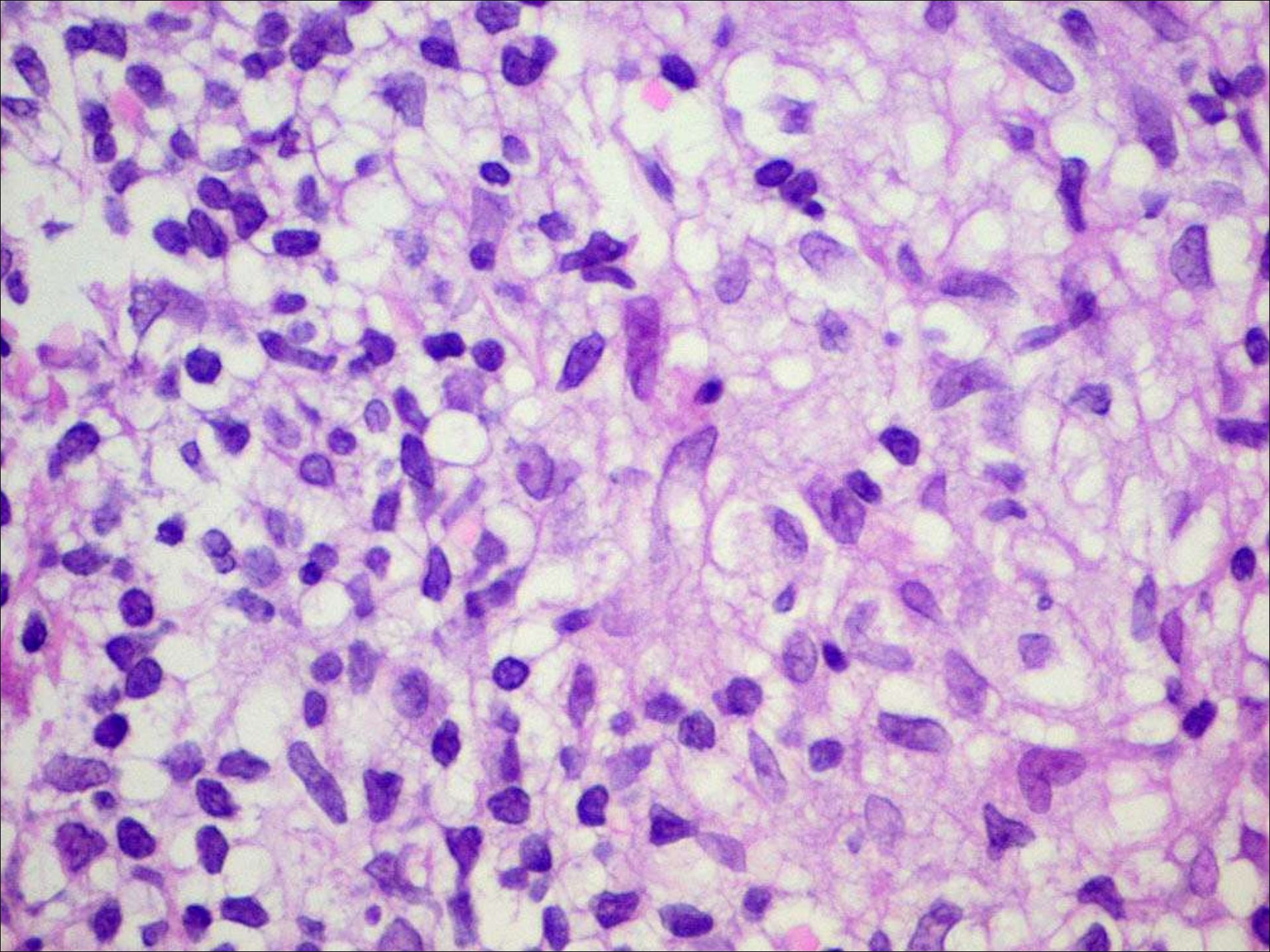
The lesion was present before her visit to Saudi Arabia.

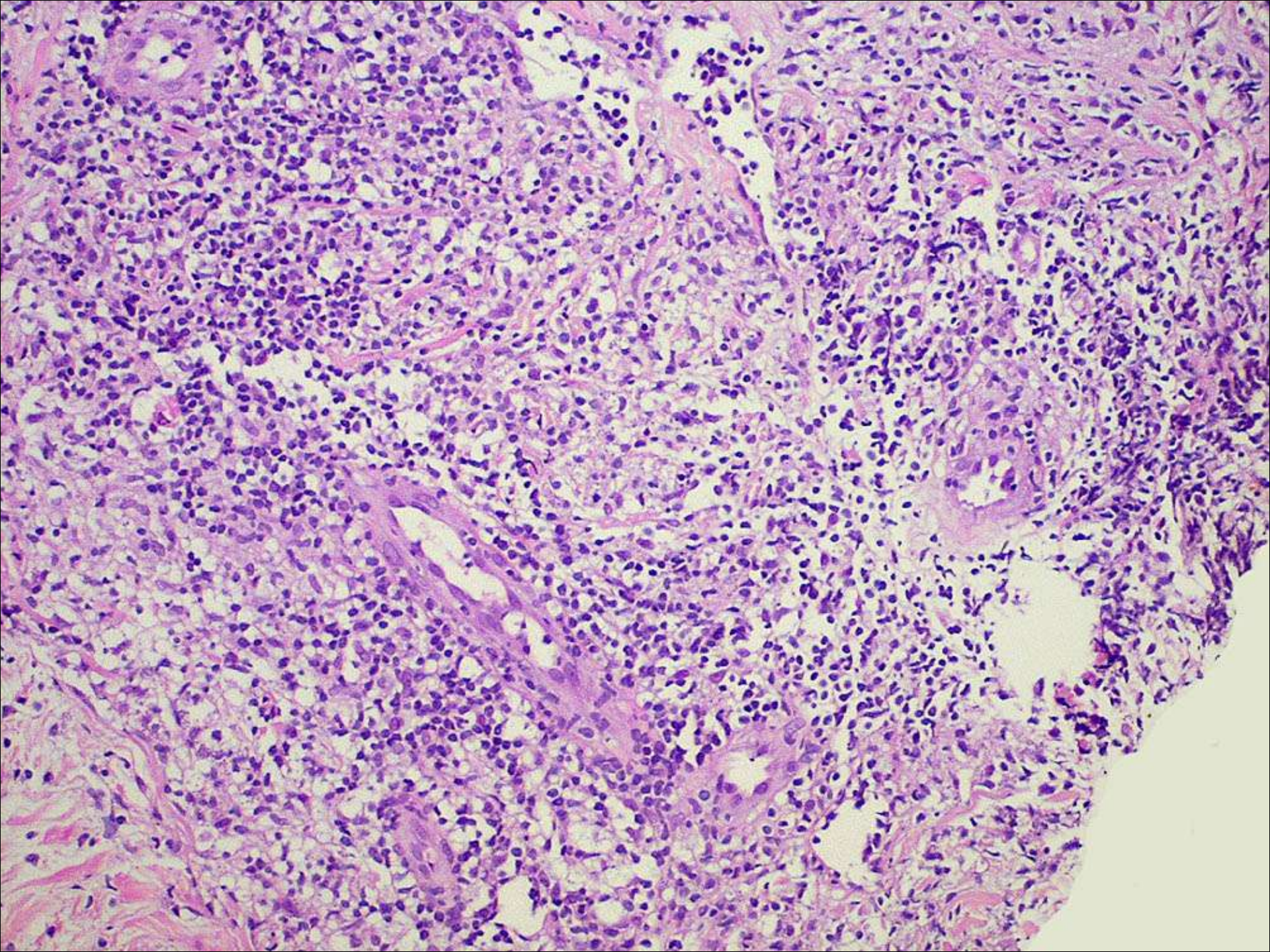


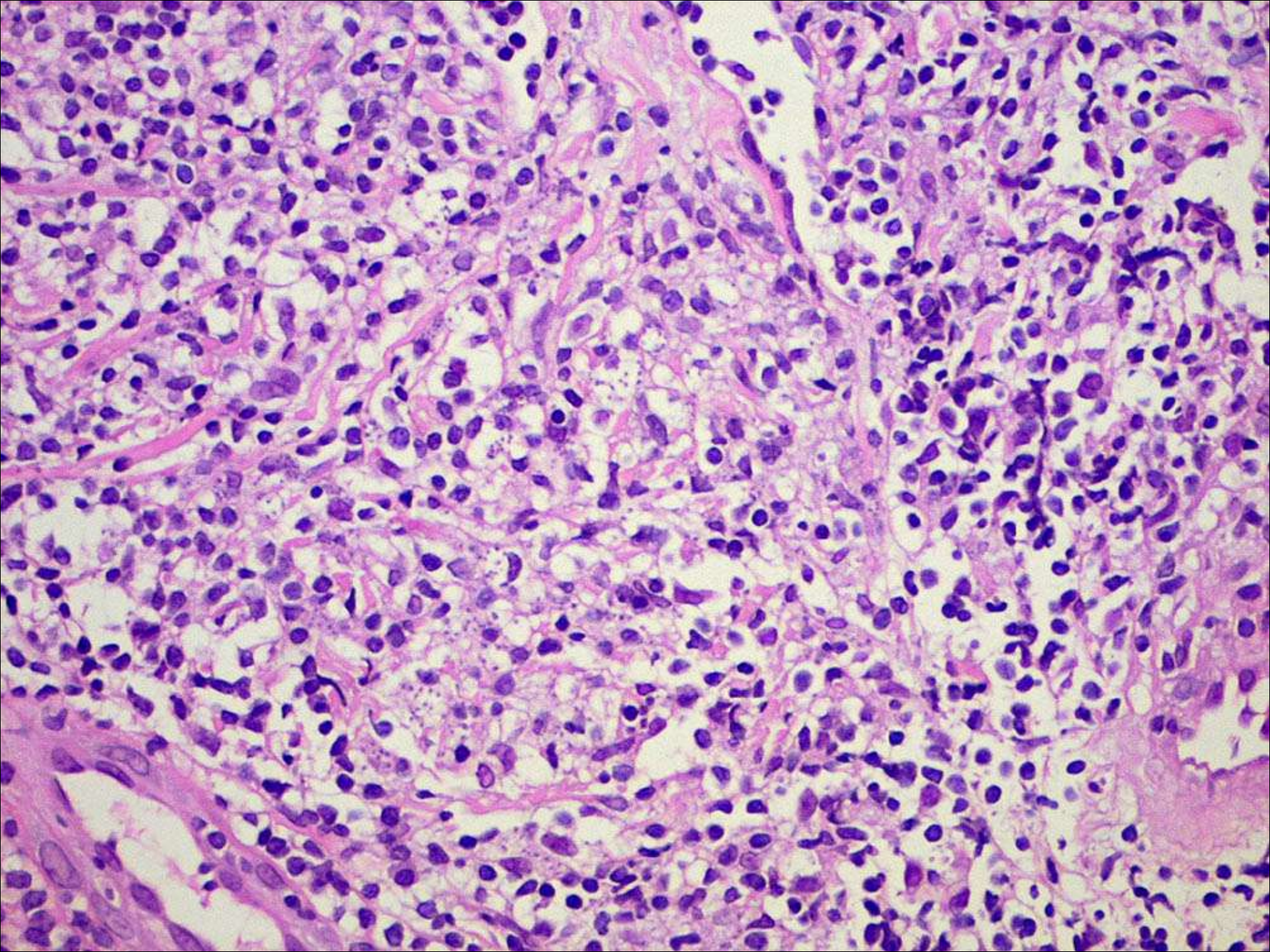

1
2

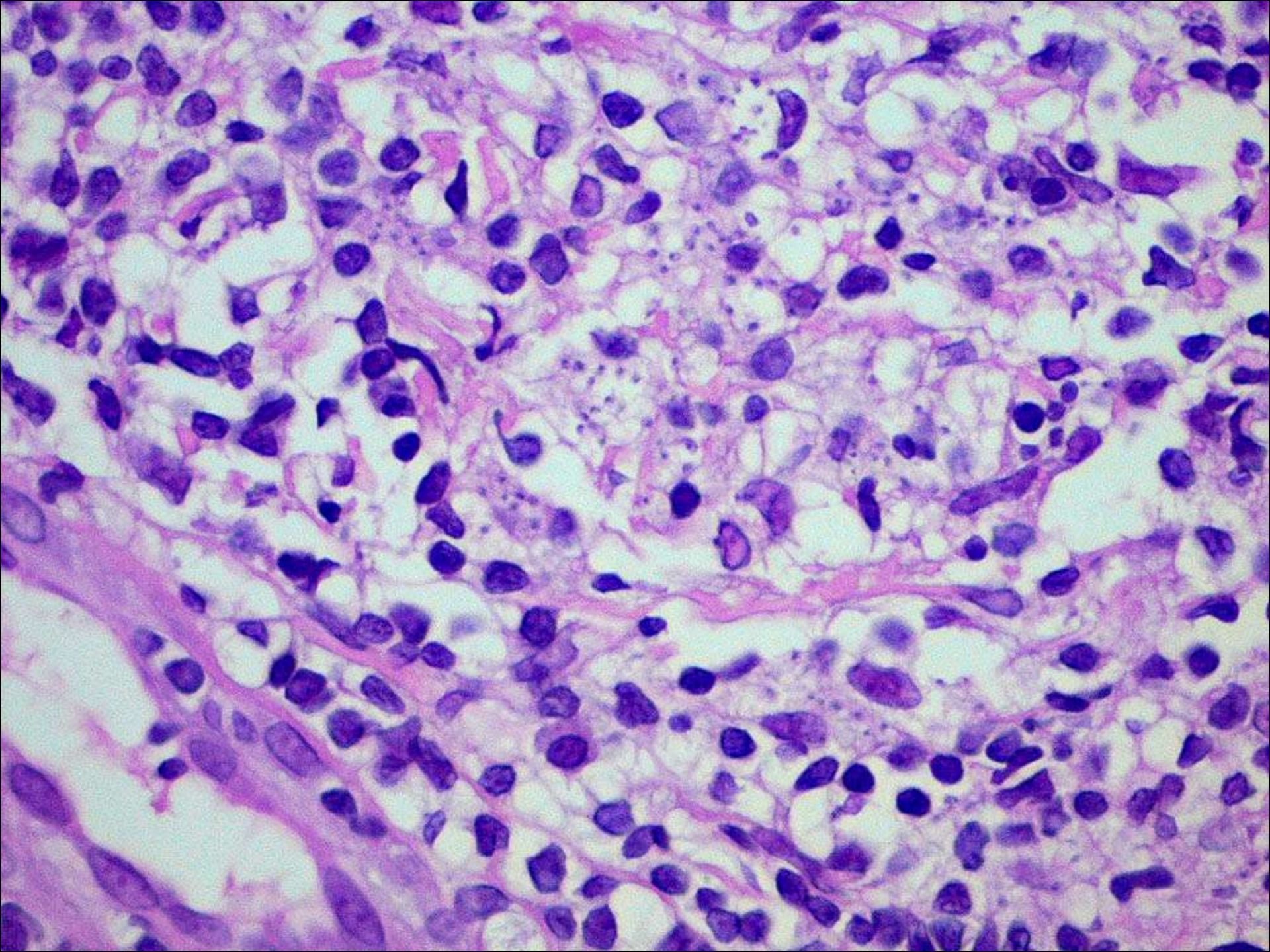


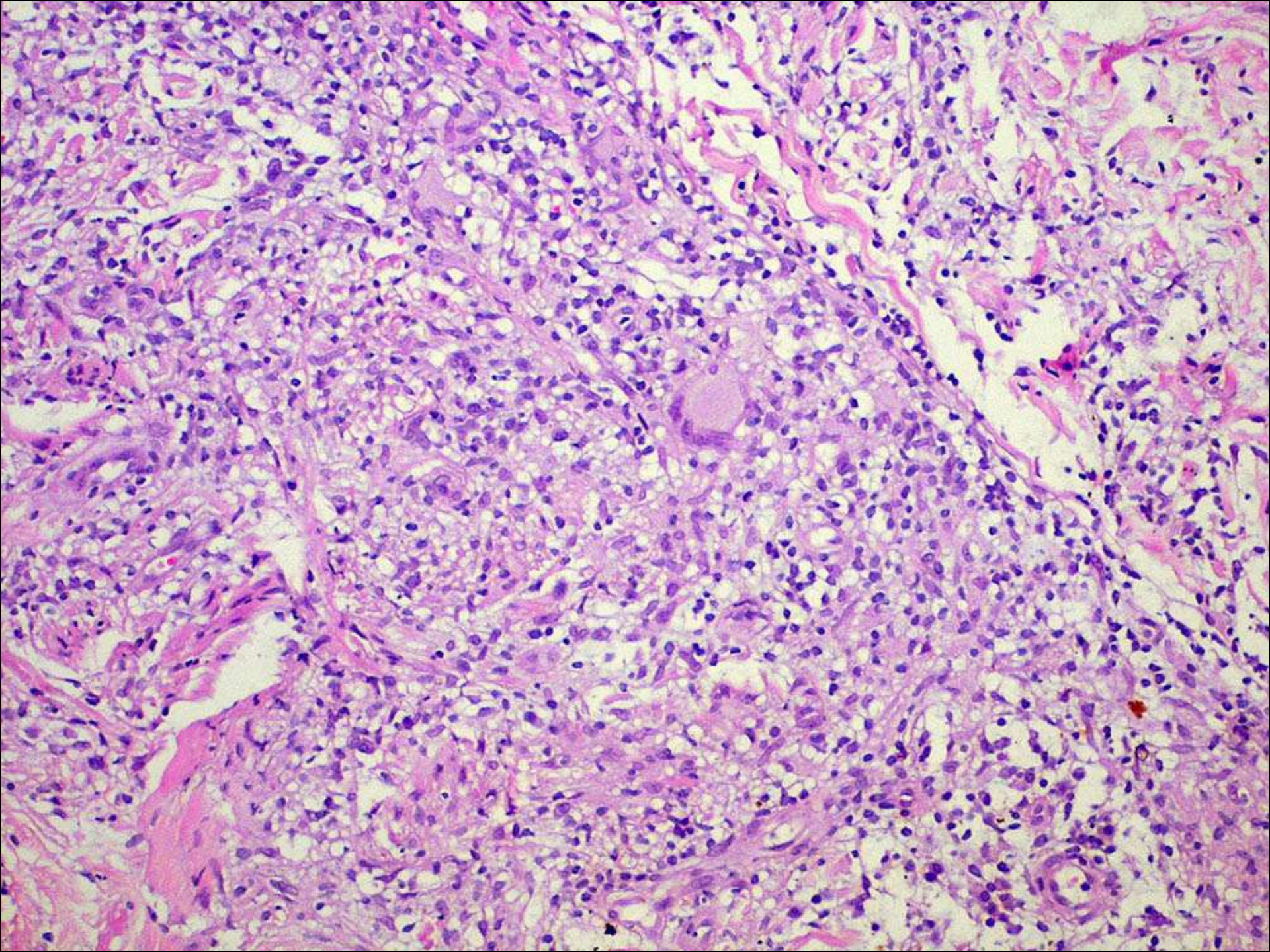


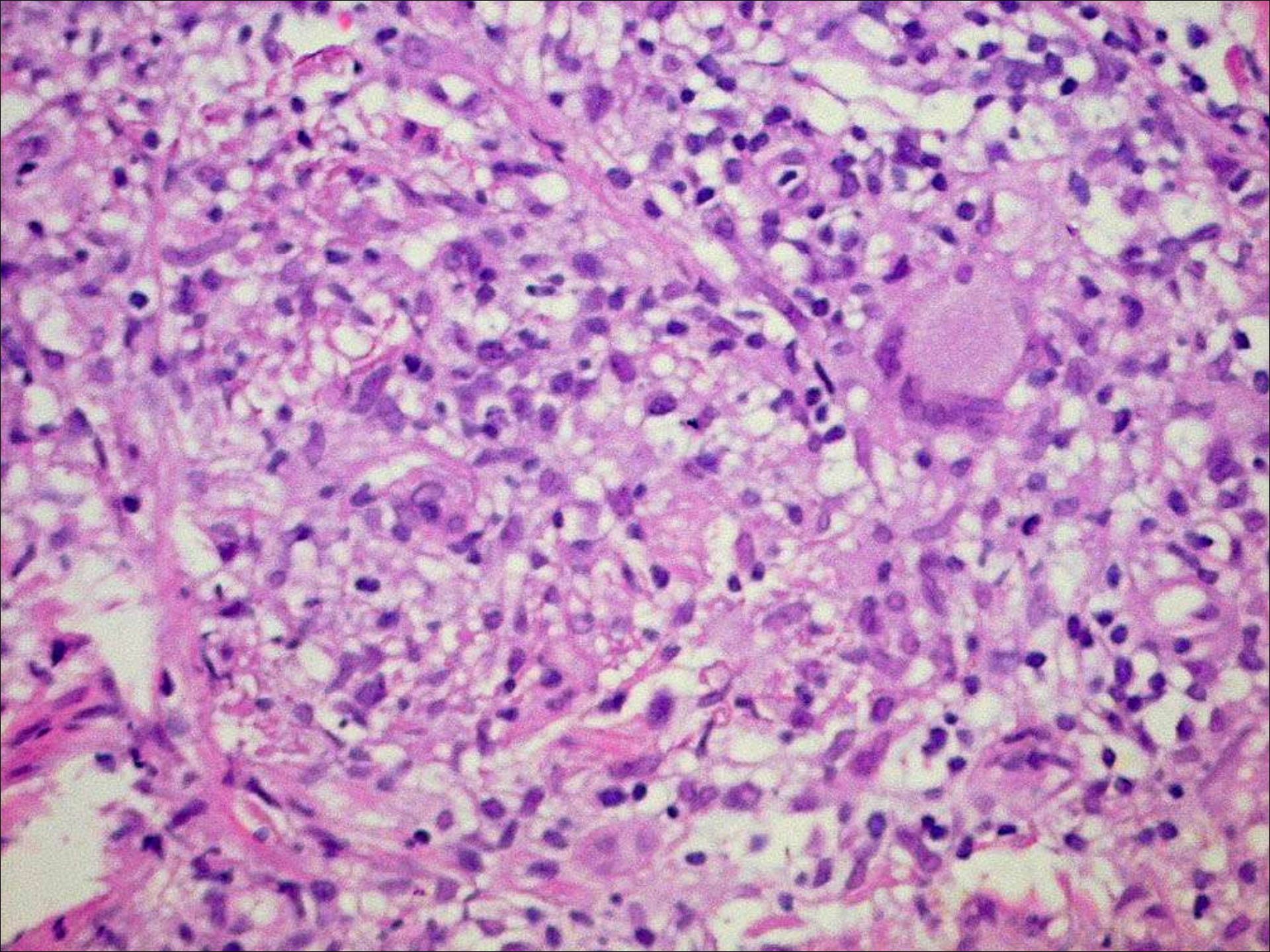












Case 1 has very few organisms with a few granulomas present.

This inflammatory reaction indicates the presence of some immunity to the infection.

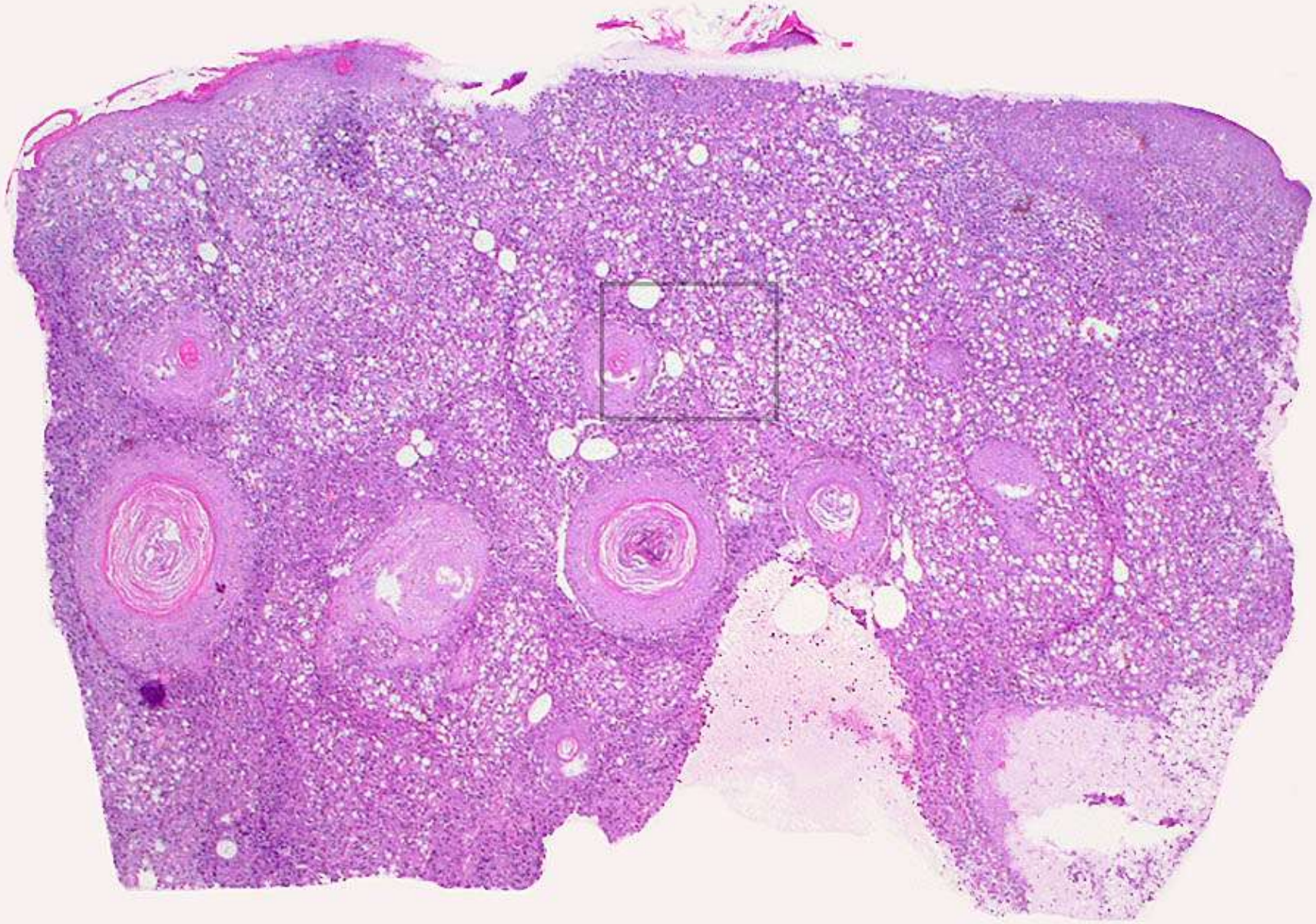
Case 2

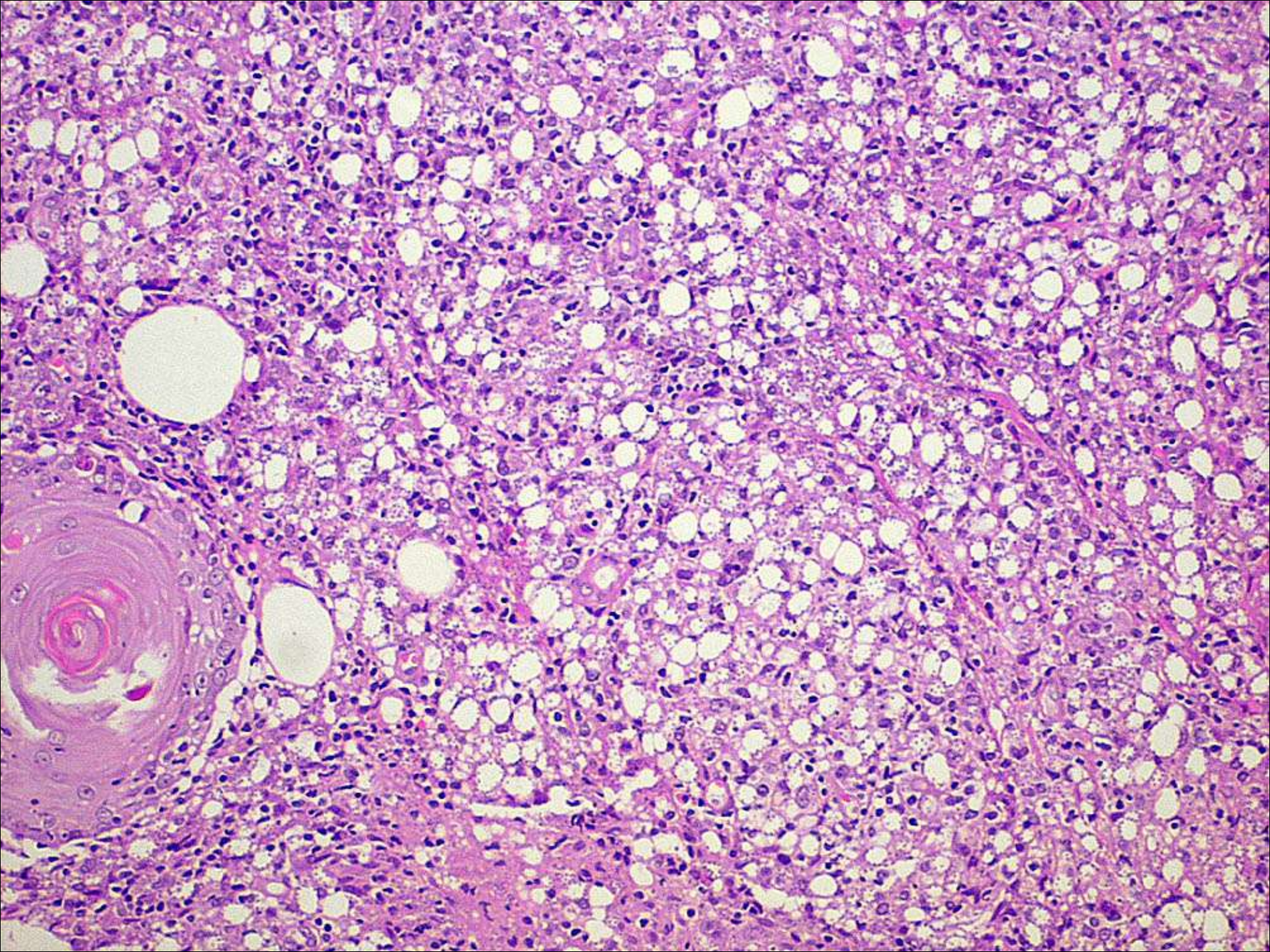
A 39 year old Saudi Arab man from Al Hasa Oasis in the Eastern Province of Saudi Arabia presented to the Dermatology Clinic of Dhahran Health Center of Saudi Aramco Medical Services Organization.

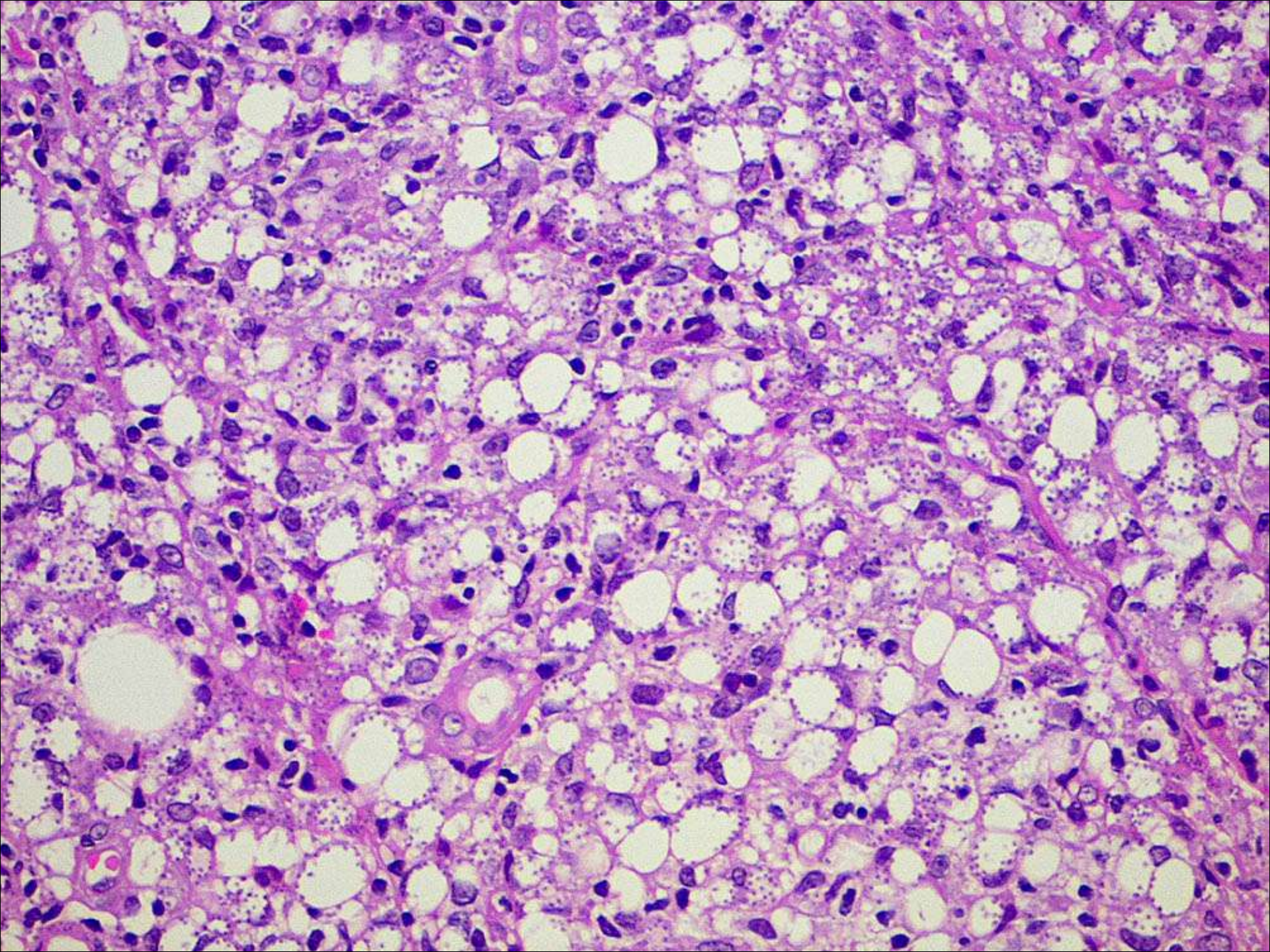
He had an erythematous ulcerating papule about 25 mm in diameter over the left cheek.

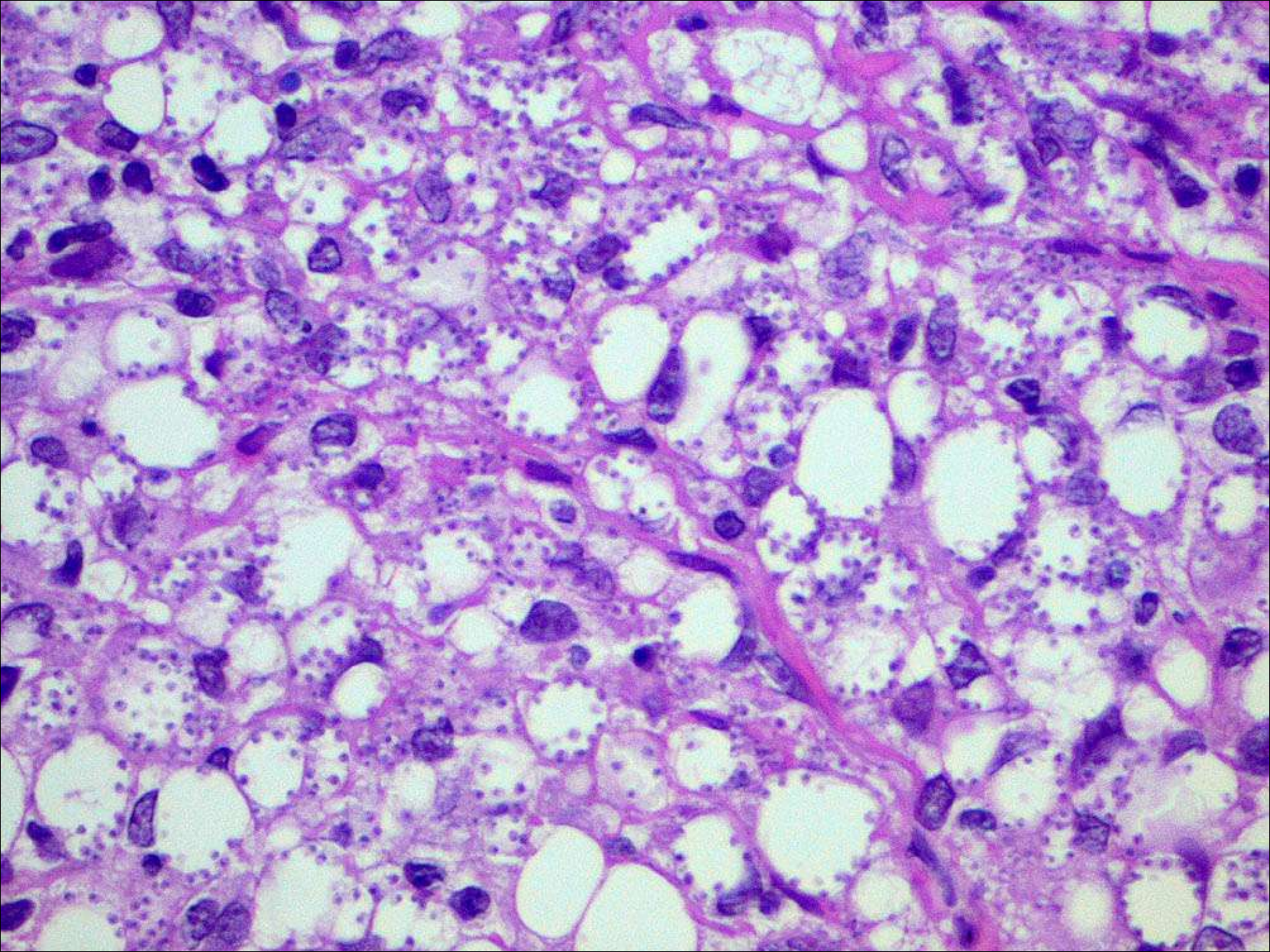
The lesion had been enlarging slowly for the last three weeks.

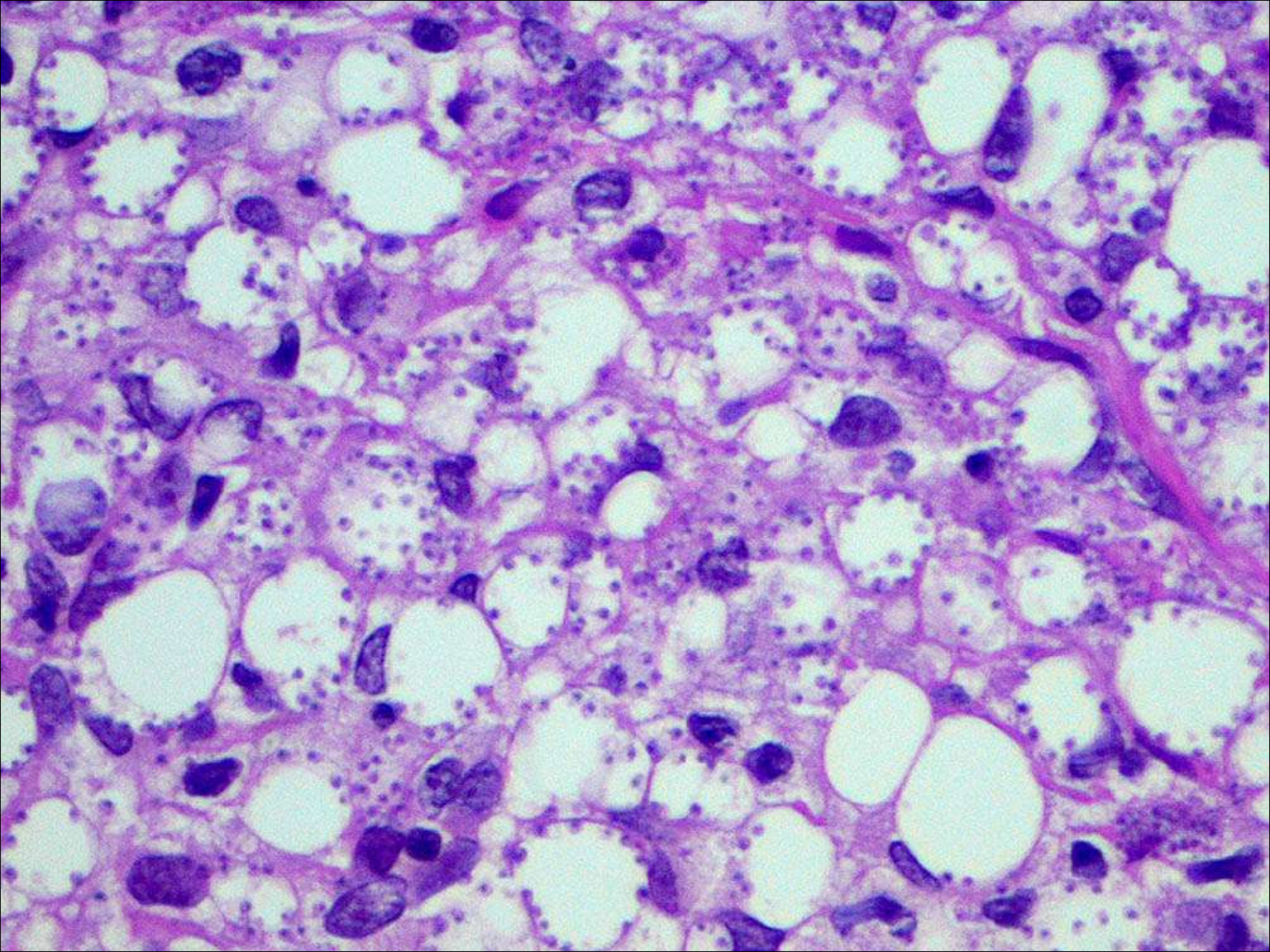
A 3 mm punch biopsy was obtained.











Case 2 has a heavy infiltration of histiocytes containing large numbers of organisms.

This reaction indicates a low level of immunity to the infection.

In Saudi Arabia the zoonotic cutaneous leishmaniasis is caused by *L. major* (Zymodeme LON-40)

It is endemic in the agricultural areas and oases of central and eastern regions.

Desert rodents serve as reservoirs and the vector *is Phlebotomus papatasi*.

It can be identified by histology and culture

but more sensitive PCR is now available.