

Benign Cyst in the Popliteal Fossa: A Cadaveric Case Study

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ABSTRACT

During routine dissection of 10 cadavers that originated from the Body Donor Program at Philadelphia College of Osteopathic Medicine South Georgia, an 82-year-old female with a cyst located medially in the right popliteal fossa was encountered. The cyst fluid contained few scattered foamy histiocytes, and the walls were fibrous and lined by spindle cells, lacking any synovial lining. These findings are suggestive of pathology in the knee joint, such as a meniscal cyst, rather than a Baker's cyst as originally suspected. This case study analyzes the benign cyst found during dissection and its clinical significance.

INTRODUCTION

Cysts in the popliteal fossa are relatively common, and are usually indicative of intra-articular pathology to the gastrocnemio-semimembranosus bursa^[3], such as osteoarthritis^[2] or, most commonly, a tear to the posterior horn of the medial meniscus^[4]. Not all cysts found in the popliteal fossa are considered Baker's cysts; ganglion cysts may also be found in this area, albeit rarely.

CASE REPORT

During routine dissection of an 82-year-old female cadaver, an anomalous cyst measuring approximately 5 cm x 2.5 cm x 1.9 cm was identified in the right medial popliteal fossa, located just medial to the medial head of the gastrocnemius, and just lateral to the semitendinosus tendon (Figure 1). The walls of the cyst were thick and fibrous. An incision to the proximal third of the cyst wall drained thick, cloudy, white fluid, from which a sample was collected and fixed in formalin. An approximately 1 cm x 1 cm sample of the cyst wall was also collected and fixed in formalin.

As the cyst was found in the popliteal fossa, a Baker's cyst was initially suspected. However, histological analysis of the fluid with H&E staining revealed few scattered foamy histiocytes with proteinaceous material and an absence of synovial fluid (Figure 3). Histological analysis of the cyst wall revealed spindle cells lining a fibrous capsule. A synovial epithelium lining the capsule, as would be expected with a Baker's cyst, was not identified, excluding this from the differential diagnosis (Figure 2).

RESULTS & DISCUSSION



Figure 1 - Cadaveric image of cyst in the posterior right lower extremity
The cyst is located in the right medial popliteal fossa, just medial to the medial head of the gastrocnemius, and just lateral to the semitendinosus tendon.

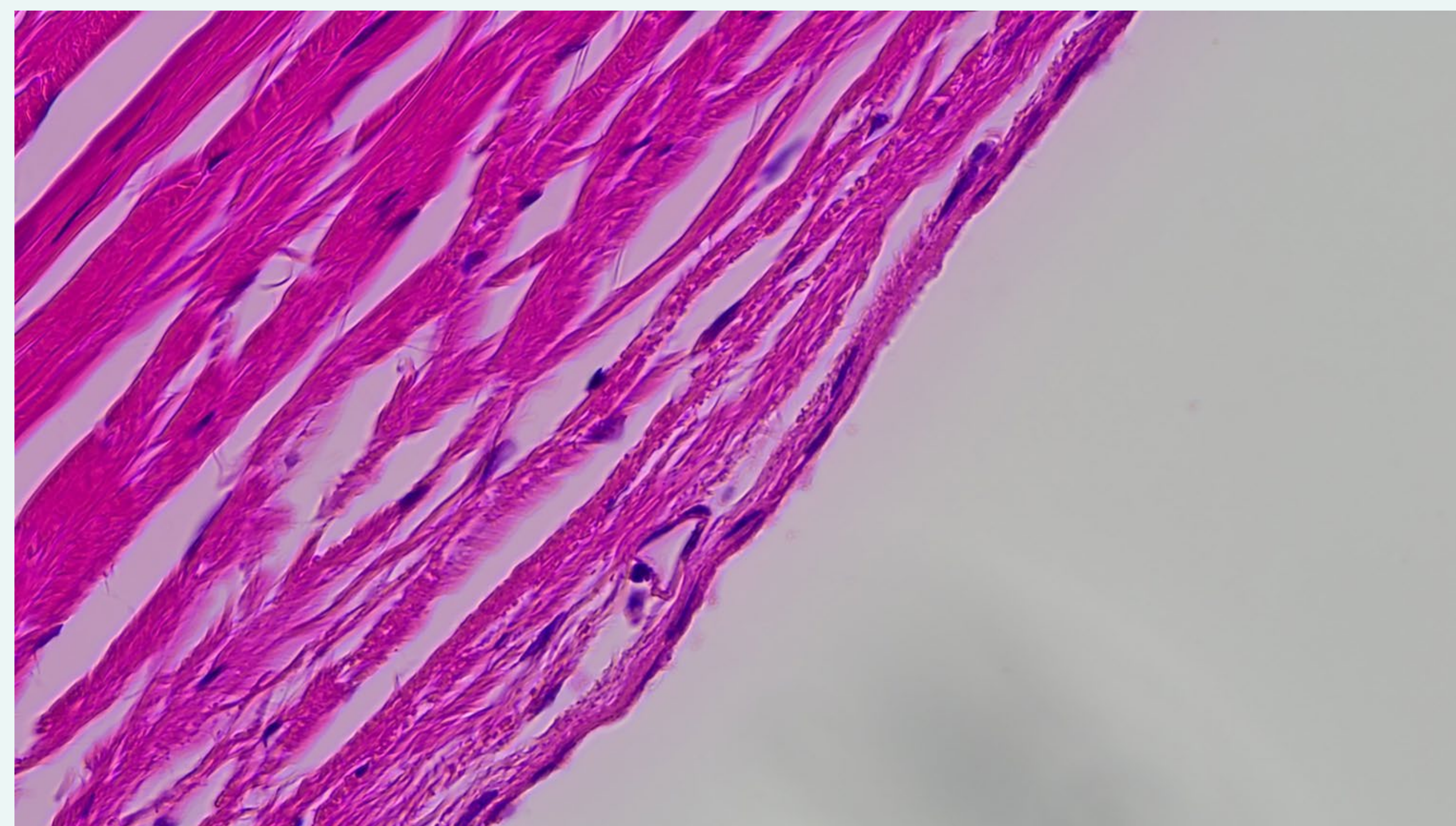


Figure 2 - Histology of the cyst wall
The cyst wall, stained with H&E, contained a fibrous capsule lined with spindle cells.

- Due to its location, a Baker's cyst was the working diagnosis.
- Other differential diagnoses included ganglion cyst, meniscal cyst, and soft tissue tumor.
- A Baker's cyst was excluded from the differential diagnosis after histological analysis, as neither synovial fluid nor a synovial lining were present.
- This cyst was likely a meniscal cyst, which are believed to be fluid extrusions resulting from a tear to the meniscus^[1].
- A ganglion cyst is also likely, as these also lack a synovial lining^[5].
- The presence of foamy histiocytes suggests an inflammatory pathology, favoring the conclusion that this was a meniscal cyst.
- Due to the nature of cadaveric dissection, a retrospective analysis of the cadaver's meniscus to evaluate for meniscus tears was not possible.

RESULTS & DISCUSSION

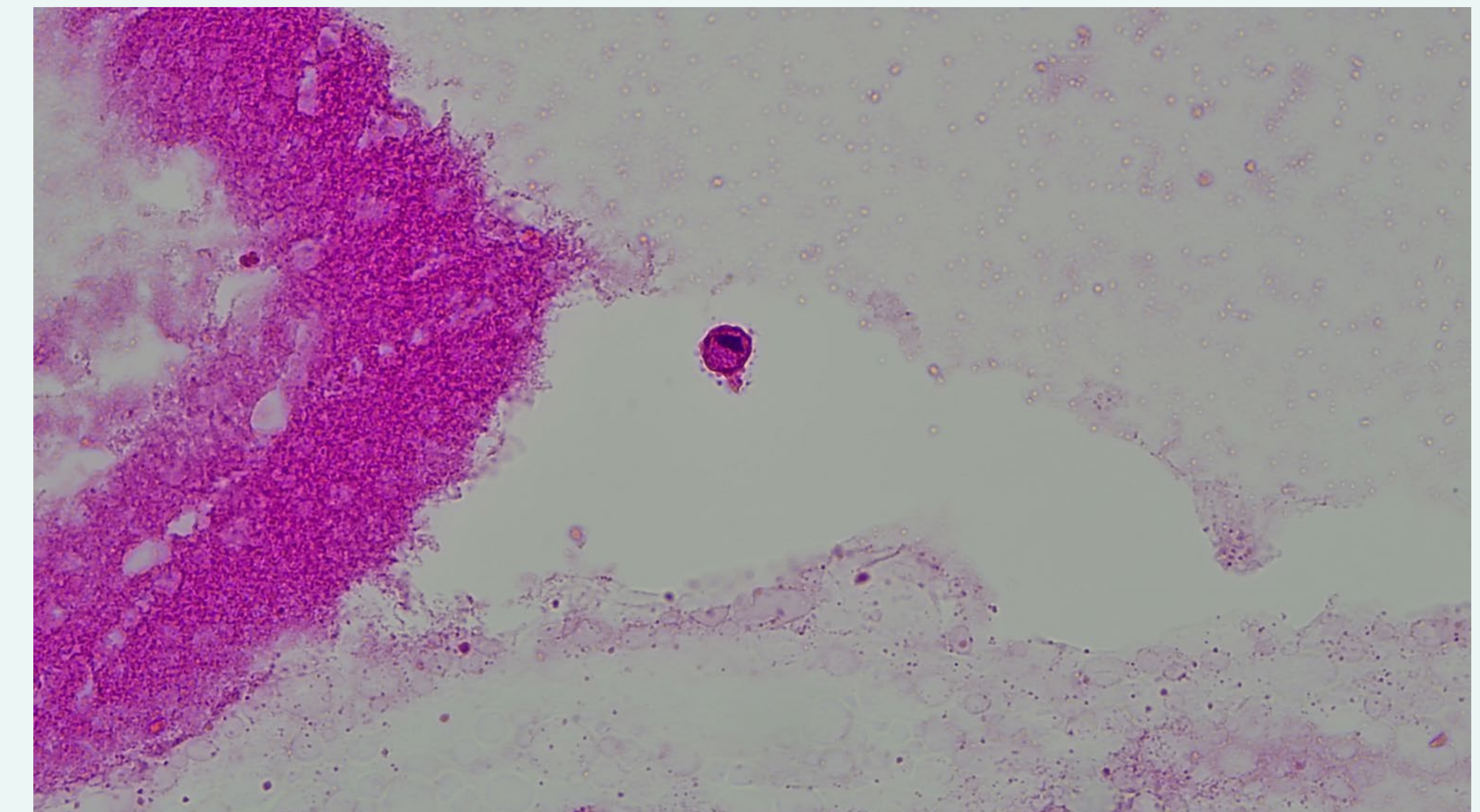


Figure 3 - Histology of the cyst fluid
The cyst fluid, stained with H&E, contained proteinaceous material and few scattered foamy histiocytes.

CONCLUSION

- Despite its location, this cyst was not a Baker's cyst, but a benign cyst to the right popliteal fossa.
- Not all cysts in the popliteal fossa can be considered Baker's cysts; meniscal cysts and ganglion cysts are also likely.
- Findings indicate this was likely a meniscal cyst.

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