Photo Quiz: An Unusual Knee Infection

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FIG 1 Microscopy of knee fungal culture (magnification, $\times 400$).

A 68-year-old Chinese male presented with right knee pain and swelling 9 months after an elective right total knee replacement (TKR) for osteoarthritis. He had a past medical history of end-stage renal failure requiring hemodialysis. Physical examination revealed mild effusion and increased warmth of the right knee. A white blood cell tag scan showed an increased radiotracer uptake around the right knee prosthesis. His symptoms worsened over 3 months, and he underwent debridement of the right knee, removal of prosthesis, and placement of cement spacers. Intraoperatively, there was turbid fluid within the joint, scarred synovium, and loosening of femoral and tibia prostheses. Histopathology showed inflamed synovium with dense infiltration of lymphocytes and plasma cells. No granulomatous inflammation was seen. Intraoperative knee tissue cultures for acid-fast mycobacteria and aerobic and anaerobic bacteria were negative. Fungal cultures grew coagulase-negative staphylococcus and *Aspergillus fumigatus* complex organisms. He was treated for coagulase-negative staphylococcus septic arthritis with intravenous vancomycin for 6 weeks, with good clinical response. Growth of *A. fumigatus* was deemed insignificant, as histopathology did not show evidence of fungal invasion. Three months later, the pain and effusion of his right knee recurred. Knee fluid examination showed a nucleated-cell count of $9,600/\mu\text{l}$ (neutrophils, 56%; lymphocytes, 16%; monocytes, 28%). No organism was seen on the knee fluid Gram stain. He underwent a right knee debridement and change of the cement

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spacer. There was a large amount of turbid hemopurulent effusion and synovitis. The histopathology report of the knee tissue, tibia, and femur bone specimens showed multiple well-formed nonnecrotizing granulomas surrounded by lymphocytic infiltrate and fibrosis. Ziehl-Neelsen stain showed no acid-fast bacilli; Gomori methenamine silver (GMS) and periodic acid-Schiff (PAS) stains showed an absence of fungal organisms in all specimens.

A tape mount performed on colonies growing from Sabouraud dextrose agar (at 30°C) is shown in Fig. 1.