A 76-year-old man with acute myelogenous leukemia presented to the hospital with 1 week of left-sided jaw pain and swelling and subjective fevers. The patient had been severely neutropenic (i.e., with an absolute neutrophil count of <500/µl) for about 6 months prior to admission. On presentation, he had normal vital signs. The physical examination was notable for mild swelling, erythema, and tenderness overlying the left mandible, with submandibular lymphadenopathy. Intraorally, there were multiple grossly decayed teeth, erythema and necrosis of the left buccal mucosa, and sublingual gland swelling and erythema. The patient was not toxic appearing, he was able to converse albeit dysarthric, and there was no airway compromise. The remainder of the physical examination was normal. The white blood cell count was 9,800/µl with 490 neutrophils (reference range, 1,700 to 7,300/µl), the hemoglobin level was 7.7 g/dl,
and the platelet count was 24,000/μl; electrolyte, renal function, and liver function test results were normal. He was taken to the operating room for biopsy of what was found to be necrotic tissue of the left buccal mucosa, left mandibular bone, and left masseter muscle. Histopathology showed extensive fungal invasion into the soft tissue and bone marrow (Fig. 1A to C). The morphology of the fungal organisms is further highlighted by Gomori methenamine silver (GMS) stain (Fig. 1C). Within 2 days, the fungal cultures grossly resembled steel wool and completely filled the surface of the tubed agar medium. Lactophenol cotton blue staining of the cultured organisms showed the microscopic features seen in Fig. 1D. This constellation of findings is highly suggestive of which genus of fungi?