A middle-aged male presented with gross enlargement of his lower right extremity (Figure 1). There was past medical history of Histiocytosis X, Parkes-Weber syndrome, and Klippel-Trenaunay syndrome. Radiographs show extensive periosteal and endosteal thickening involving multiple bones of the right lower extremity (Figure 2). Below knee amputation was performed and gross photographs reveal dense cortical bone overgrowth, entirely obliterating the intramedullary cavity (Supplemental Figure 1, available online at http://www.mayoclinicproceedings.org). The cortical surface is bosselated, producing the characteristic “dripping candle wax” appearance on plain radiograph. The radiographic and gross findings are in keeping with melorheostosis, a rare sclerosing bone disorder that is characterized by either singular or multifocal dense, irregular hyperostosis involving the periosteal and endosteal bone surfaces. The bony overgrowth can cause pain, gross limb deformity, and reduced range of motion. Melorheostosis can affect any bone, but commonly involves the large tubular bones of the lower extremity.1 The pathogenesis, in sporadic cases, is associated with mutations in the MAP2K1 gene which encodes the protein kinase MEK1 leading to increased phosphorylated ERK1/2 signaling, and ultimately increased osteoblast proliferation.2 Although this patient’s symptoms were successfully managed through a below knee amputation, there has been interest in using medical and targeted therapies in patients with melorheostosis patients.3

POTENTIAL COMPETING INTERESTS
The authors report no potential competing interests.
SUPPLEMENTAL ONLINE MATERIAL
Supplemental material can be found online at http://www.mayoclinicproceedings.org. Supplemental material attached to journal articles has not been edited, and the authors take responsibility for the accuracy of all data.

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