A 48-year-old man was seen in the emergency department with a massively swollen knee and no history of trauma. On physical examination, the knee appeared greatly distended and tense. The patient could not fully flex it and found weight-bearing difficult. The knee was only minimally warm to the touch and the patient had no fever. On examination of other joints, there were no abnormalities. The patient had no comorbid conditions, but he did mention previous episodes of less-severe swelling of the same knee over the previous 5 years, occurring 5–12 months apart and resolving spontaneously over several weeks.

Needle aspiration yielded a large amount of frank blood, with immediate relief of symptoms. The residual swelling resolved over the following few weeks. Subsequently, the patient underwent magnetic resonance imaging of the knee (Fig. 1) and arthrography (Fig. 2) for further evaluation.

In view of the clinical history and imaging findings, what diagnoses would you consider?

For the diagnosis and a discussion of the findings see page 226.