

**Table 21-1**  
**Risk Factors For Femoral Neck Fracture Nonunion**

<i>RISK FACTOR</i>	<i>IMPLICATION/RESULT</i>
High-energy injury	Significant fracture displacement Damage to retinacular vessels
Vertically oriented fracture pattern	Predispose to varus angulation Inferior fracture translation frequent
Reduction not anatomic	Increases shear forces across fracture site Higher risk of fixation failure
Implant position not adequate	Implant unable to resist deforming forces Varus collapse and shortening occur Shear forces increase at fracture

**Figure 21-1.** An AP radiograph demonstrating a displaced, vertically oriented femoral neck fracture with a nonanatomic reduction and less than ideal hardware placement. This resulted in a failure of fixation with varus collapse and inferior translation. Ultimately, a femoral neck nonunion was the outcome.



a radiolucent table with the patient in the supine position with slight knee flexion. This is particularly useful in an anterior approach. The standard surgical approaches include the traditional Watson-Jones anterolateral approach, which can facilitate implant placement. However, exposure and reduction of the fracture can be difficult in a large or obese patient. The anterior Smith-Petersen approach provides excellent exposure of the fracture and allows clamp placement directly perpendicular to the fracture plane. However, placement of hardware along the lateral border of the femur can be challenging (Figure 21-2A). A recently described modification of the anterior approach consists of adding a percutaneous or limited open lateral approach for hardware placement (Figures 21-2B and C).<sup>2</sup> This combined approach technique is recommended because it allows an anatomic reduction under direct visualization as well as hardware placement through an accessory approach.