Pseudoaneurysm Following Intramedullary Nail Fixation of Hip Fracture: Recognizing and Avoiding a Rare But Dangerous Complication

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Purpose: Pseudoaneurysm is a potentially life-threatening, but rare, complication of hip fracture. Reports of delayed diagnosis have been published, highlighting the need to increase awareness. We analyzed a case series to identify the presenting features to aid earlier recognition and prevention where possible.

Methods: A single major trauma center (Shaare Zedek Medical Centre, Jerusalem, Israel) database search was performed for all pseudoaneurysms following hip fractures over a 4-year period (1 January 2016 until 31 December 2019). The etiology, presenting features, diagnosis, and treatment were examined.

Results: Six patients out of 1919 (0.31%) treated for hip fracture had a consequent pseudoaneurysm. All 6 had intertrochanteric fractures, and all lesions involved the profunda femoris artery. Two pseudoaneurysms were caused by direct trauma from a sharp lesser trochanter fragment. Three were iatrogenic, caused while drilling the distal locking screw. In one case the etiology was undetermined. All patients suffered from a triad of symptoms: greater than expected thigh pain, thigh swelling/bruising, and reduced hemoglobin despite transfusion. The median hemoglobin drop was 39 g/L (interquartile range [IQR] 19). A median of 3.5 units (IQR 6) of red blood cells were transfused over a median 4 days (IQR 12). All lesions were confirmed via CT angiography and treated by embolization. In cases caused by the fracture, time to diagnosis was calculated from admission; in iatrogenic cases it was calculated from surgery. In 5 patients the median time to diagnosis was 6 days (IQR 5.5). One patient's pseudoaneurysm was diagnosed as a late sequala at 50 days postsurgery, requiring 21 units of red blood cells before diagnosis.

Conclusion: We identified two causes of pseudoaneurysm following hip fracture: direct trauma from the fracture and iatrogenic (whiie drilling the medial cortex). Care must be taken when drilling locking screws. Pseudoaneurysm should be considered for unexplained/continued blood loss following intertrochanteric fractures.