Vanishing Pulse: Axillary Artery Thrombosis in Closed Proximal Humerus Fracture

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INTRODUCTION:

Closed proximal humerus fractures are rarely associated with vascular injuries despite their anatomically closely relation. We describe a case of axillary artery thrombosis in a closed proximal humerus fracture.

REPORT:

An octogenarian lady with dementia presented with pain and deformity over her right arm following a fall into the drain. Initial physical examination noted that her right shoulder was swollen but there was no gross bruising or hematoma. Her distal neurovascular examination was normal. Radiographs of the right shoulder demonstrated a comminuted proximal humerus fracture with its distal fragment displaced medially into the axilla. (Figure 1)

An hour following the initial evaluation, her distal pulses were notably absent and the affected limb appeared bluish and cold. Bedside Doppler ultrasound could not detect the brachial, radial and ulna pulses. Closed manual reduction of the distal fragment was done (Figure 2), however the distal pulses were still diminished. CT angiogram of the right upper limb noted long segment distal right axillary artery thrombosis, measuring 7cm in length. Surgical intervention was not done in this patient as she was concurrently treated for myocardial infarction, and her fracture reduction was acceptable with good collateral circulation.

DISCUSSION:

Injury to the axillary artery in a closed proximal humerus fracture can be caused by intimal tears from a sharp bony fragment, resulting in secondary thrombosis. Hence, it is important to note that distal pulses may be palpable on initial presentation, but diminish only after thrombosis of the artery occurs.

Figure 1: Anteroposterior radiograph showing Neer 4- part fracture of theright humerus

Figure 2: Anteroposterior radiograph of the right shoulder following closed manual reduction

Ideally, fracture reduction and internal fixation is performed first unless in severely vascular compromised limb as it prevents fracture redisplacement and injury to the vascular repair. Vascular surgery need not be done in all cases, especially if the collateral circulation is adequate.

CONCLUSION:

Axillary artery thrombosis secondary to closed proximal humerus fractures may present with delayed findings. Increased awareness about this injury and cautious repeated examination must be emphasized, especially gross medial displacement of fracture fragments are seen.

REFERENCES:

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