Chapter 18
Humeral Shaft Fracture

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How can humeral shaft fracture patterns be described?	Transverse, oblique, spiral, comminuted with or without butterfly fragments
What are the primary deforming forces of humeral shaft fractures?	Pectoralis major: adducts proximal fracture fragments Deltoid: abducts proximal fracture fragments
What are the maximum acceptable reduction criteria for nonoperative management?	Malrotation: 15° Anterior angulation: 20° Varus: 30° Shortening/bayonet opposition: 3 cm

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What is the classic mechanism of humeral shaft fractures?	High energy trauma → direct force → transverse and comminuted fractures Indirect trauma (fall on outstretched hand) → rotational forces → spiral fracture patterns
What are some associated neurovascular injuries with humeral shaft fractures?	Radial nerve injuries, brachial plexus injuries, and profunda brachii arteries
What are the indications for operative management?	Open fractures, unacceptable reduction criteria, radial nerve palsy after reduction, ipsilateral upper extremity injuries, pathological fractures, and segmental fractures
What is the most common nonoperative treatment?	Coaptation splint followed by Sarmiento brace or casting
What are the operative treatments for humeral shaft fractures?	Intramedullary nail, plate fixation, and external fixation
Common complications of a humeral shaft fracture include?	Radial nerve palsy, malunion, delayed union, non-union