

Fractures of the proximal humerus

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In fractures of the proximal humerus consideration is given to the vascularity of the humeral head. The most common classification of the proximal humerus is the Neer classification, which looks at the four individual pieces of the proximal humerus (articular head fragment, lesser tuberosity, greater tuberosity and the shaft). If a fragment is displaced by more than 1 cm or angulated by more than 45° in respect of another fragment, it is considered a part. As such undisplaced, or in two parts, three parts or four parts. Consideration is then given to potential joint dislocation, anterior, medial or posterior. The greater the number of parts, the higher the chances of interruption of the vascularity to the humeral head and the more complex the injury. Three factors can be used to predict avascularity of the proximal humeral head: 1 fracture through the anatomical neck; 2 loss of the medial hinge; 3 less than 8 mm of bone along the medial calcar. In situations where there is a high risk of failure of both fixation and non-operative treatment, owing to avascular necrosis or implant fixation failing from bone loss or loss of function (e.g. with displaced fractures in lower demand patients and other comorbidities), consider and those with osteoporosis may be given to replacing the humeral head. This may Charles Sumner Neer II, 1917–2011, American orthopedic surgeon, emeritus professor at Columbia University, developed a widely used shoulder prosthesis and also developed a common classification system for proximal humerus fractures. Limitations of trauma hemiarthroplasty for proximal humeral fractures involves reliable healing of the tuberosities and the rotator cuff. Increasingly, a primary reverse polarity shoulder prosthesis is being used. This implant does not rely on tuberosity healing, as it functions under the power of the deltoid muscle. In younger patients reduction and fixation may be considered available: percutaneous considered. A variety of fixation methods are fixation, intramedullary nails and plate fixation.

Figure 32.25 (a-c) A B-type humeral shaft fracture. This fracture could not be controlled by non-operative means and was treated with lag screws protected by a plate.

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