Intra-articular fractures

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AO type B and type C fractures are intra-articular and as such the principles of treating intra-articular fractures need to be respected; namely , anatomical reduction of the articular surface and rigid stabilisation to allow early joint movement and avoid ance of degenerative joint disease (Figure 32.19). However, these principles have to be balanced with the increased wound complications of open surgery and devitalising bone fragments with excessive exposure of the bone. Osteoporotic intra-articular fractures are a considerable - challenge. Although anatomical reduction may be achieved, rigid fixation devices may cut out of soft bone, particularly in the metaphysis of the bone where pull-out strength of the fix - ation is reduced. Plate design and the introduction of locking plates where the screw secures itself into the plate are design

(d) (e) Figure 32.18 (a) and (d) are C-type or segmental tibial fractures. Each was a high-energy injury; /f_i xator applied in each case; (c) and (f) show de /f_i nitive relative stability was achieved with different methods of bridging /f_i xation. Healing was by indirect means in both cases. Despite irregularities at the fracture sites the overall alignment in coronal and sagittal planes was satisfactory and function was good. (f) (b) and (e) show a temporary spanning external

features to help improve cut-out strength and may help reduce failure of fixation in osteoporotic bone. Injectable bone substi tutes may be used to fill bone voids and augment fixation. If stable fixation is not possible, then consideration might be given to non-operative treatment and delayed joint replacement or, on occasion, primary joint re placement may be undertaken. AA BB In type C fractures where the articular surface has sepa - rated from the metaphysis, the articular surface is initially - anatomically reduced and held with temporary K-wires or lag screws and then the articular block is reattached to the , nail or frame shaft using methods as described above – plate (Figure 32.20).

(b) (c) Figure 32.19 A B-type or partial articular fracture. (a) Plain radiograph; (b) computed tomography clari /f_i es the injury; (c) /f_i xation with plate and screws achieving compression across a previously reduced fracture. (b) Figure 32.20 (a) A C-type proximal tibial articular fracture (i.e. none of the joint remains attached to the diaphysis). (b) The small plate and screws (AA) are used to compress the joint fragments, aiming for absolute stability. The heavy duty /f_i xed angled device (BB) spans the fracture and provides relative stability. Although the image is historical and techniques vary with time, there has been good restoration of alignment and joint congruity.

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