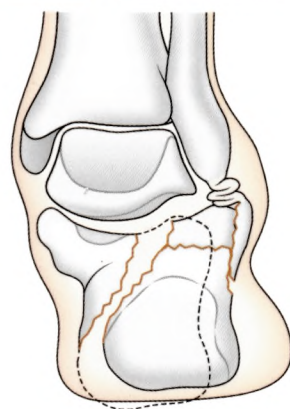


Enhanced
DIGITAL
VERSION
Included

McRae's ORTHOPAEDIC TRAUMA

and Emergency Fracture Management

Timothy O. White | Samuel P. Mackenzie



Fourth Edition

McRae's

ORTHOPAEDIC TRAUMA

and Emergency Fracture Management

Fourth Edition

Timothy O White

BMedSci, MBChB, FRCSEd (Tr & Orth), MD

Consultant Orthopaedic Trauma Surgeon,
Royal Infirmary of Edinburgh;
Reader,
University of Edinburgh

Samuel P Mackenzie

BMedSci, MBChB, FRCS Ed (Tr & Orth), MD

Consultant Orthopaedic Trauma Surgeon,
Royal Infirmary of Edinburgh;
Honorary Senior Clinical Lecturer,
University of Edinburgh



ELSEVIER

Preface to the third edition	ix	<i>Fracture gaps</i>	85
Preface to fourth edition	x	<i>Hold: implant choice</i>	86
Dedications and acknowledgements	xi	<i>Move: activity restriction and weight-bearing</i>	101
Contributors	xii		
Part 1: General Principles	1	6 Musculoskeletal infection and joint aspiration	103
1 Fractures and fracture management	2	<i>Acute arthritis</i>	103
<i>Orthopaedic terminology</i>	2	<i>Cellulitis</i>	105
<i>Assessment of a fracture</i>	12	<i>Necrotizing fasciitis</i>	105
<i>Principles of fracture management</i>	15	<i>Abscesses</i>	106
<i>Bone structure and healing</i>	16	<i>Muscle infection</i>	107
<i>How to present a radiograph</i>	18	<i>Bone infection (osteomyelitis)</i>	107
		<i>Joint aspiration and injection</i>	109
2 Management of the injured patient	21	7 Complications	115
<i>Major trauma</i>	21	<i>Non-union</i>	115
<i>Intravascular fluid replacement in major trauma</i>	25	<i>Postoperative infection</i>	117
<i>Decision-making in trauma</i>	26	<i>Malunion</i>	118
<i>Anaesthesia and analgesia</i>	30	<i>Bone defects</i>	118
<i>Trauma in the elderly</i>	35	<i>Heterotopic ossification</i>	119
		<i>Complex regional pain syndrome</i>	121
3 Limb-threatening injuries	40	<i>Pathological fractures</i>	122
<i>Closed soft tissue injuries</i>	40		
<i>Open fractures</i>	41	Part 2 Specific Injuries by Region	127
<i>Compartment syndrome</i>	45	8 Shoulder girdle	128
<i>Crush injuries</i>	49	<i>General principles</i>	128
<i>Nerve injury</i>	50	<i>Clavicle</i>	134
<i>Vascular injury</i>	58	<i>Acromioclavicular joint</i>	139
<i>The mangled limb</i>	60	<i>Sternoclavicular joint</i>	143
<i>Signpost injuries</i>	61	<i>Scapula</i>	144
		<i>Scapulothoracic dissociation</i>	145
4 Closed management of fractures	62	<i>Anterior shoulder (glenohumeral) dislocation</i>	146
<i>Reduce: closed reduction</i>	62	<i>Posterior shoulder dislocation</i>	152
<i>Hold: principles of cast management</i>	64	<i>Inferior shoulder dislocation (luxatio erecta)</i>	155
<i>Backslabs</i>	65	<i>Rotator cuff tears</i>	156
<i>Full casts</i>	73	<i>Calcific tendonitis</i>	157
<i>Limb elevation</i>	76	<i>Frozen shoulder (adhesive capsulitis)</i>	158
<i>Cast aftercare</i>	78		
<i>Orthoses</i>	81	9 Humerus	159
		<i>General principles</i>	159
5 Operative management of fractures	83	<i>Proximal humeral fractures</i>	164
<i>Reduce: closed or open fracture reduction</i>	83		
<i>Hold: construct stability</i>	83		

	<i>Humeral shaft fractures</i>	174		<i>Distal phalanx: rigger jersey finger</i>	282
	<i>Long head of biceps rupture (proximal injury at the shoulder)</i>	181		<i>Distal phalanx: closed tuft fractures</i>	283
	<i>Biceps tendon avulsion (distal injury at the elbow)</i>	182		Dislocations	283
10	Elbow	183		<i>Carpometacarpal joint dislocations</i>	283
	<i>General principles</i>	183		<i>Thumb metacarpophalangeal joint instability: ulnar collateral ligament rupture or 'gamekeeper's thumb'</i>	283
	<i>Distal humeral fractures</i>	186		<i>Metacarpophalangeal joint dislocations</i>	284
	<i>Radial head and neck fractures</i>	196		<i>Proximal interphalangeal joint dislocations</i>	285
	<i>Olecranon fractures</i>	201		<i>Distal interphalangeal joint dislocations</i>	286
	<i>Elbow dislocation</i>	206		Soft tissue injuries of the hand	287
11	Forearm	215		<i>Extensor tendon injury</i>	287
	<i>General principles</i>	215		<i>Flexor tendon injury</i>	287
	<i>Radial shaft fractures</i>	218		<i>Fingertip injuries</i>	288
	<i>Ulnar shaft fractures</i>	221		<i>Trigger finger</i>	290
	<i>Both-bones fracture of the forearm</i>	228		Hand infections	290
	<i>Compartment syndrome of the forearm</i>	228		<i>Fingertip infections</i>	290
12	Wrist and carpus	230		<i>Flexor sheath infection</i>	291
	<i>General principles</i>	230		<i>Septic arthritis</i>	292
	<i>Distal radial fractures</i>	237	14	Spine	293
	<i>Distal ulnar fractures</i>	251		<i>General principles</i>	293
	<i>Scaphoid fractures</i>	251		<i>Principles of management of major spinal trauma</i>	297
	<i>Other carpal fractures</i>	256		Major spinal injuries	307
	<i>Carpal instability</i>	257		<i>Atlanto-occipital injuries</i>	307
	<i>Carpal tunnel syndrome</i>	262		<i>Atlanto-axial fractures and instability</i>	308
	<i>Differential diagnoses for acute wrist pain</i>	264		<i>Subaxial cervical fractures C3-C7</i>	310
13	Hand	266		<i>Fractures of the thoracic and lumbar (thoracolumbar) spine</i>	312
	<i>General principles</i>	266		<i>Sacral fractures</i>	319
	<i>Immobilization of hand injuries</i>	271		<i>Spinal cord injuries</i>	319
	Metacarpal fractures	274		Minor spinal injuries	320
	<i>Metacarpal head fractures</i>	274		<i>Spinous process fractures</i>	320
	<i>Metacarpal neck fractures</i>	275		<i>Coccyx fractures</i>	321
	<i>Metacarpal shaft fractures</i>	275		Other spinal pathology	321
	<i>Finger metacarpal base fractures</i>	278		<i>The ambulant patient with back pain</i>	321
	<i>Thumb metacarpal base fractures</i>	278		<i>The ambulant patient with neck pain</i>	324
	Phalangeal fractures	280		<i>Lumbar radiculopathy</i>	324
	<i>Proximal and intermediate phalanges: extra-articular fractures</i>	280		<i>Cauda equina syndrome</i>	326
	<i>Proximal and intermediate phalanges: intra-articular fractures</i>	281		<i>Spinal infection</i>	327
	<i>Distal phalanx: mallet finger injury</i>	282		<i>Spondylolisthesis</i>	327

15 Pelvis	329	<i>Midfoot fractures</i>	548
General principles	329	<i>Tarsometatarsal (Lisfranc) injuries</i>	550
Pelvic ring injuries	333	<i>Metatarsal fractures</i>	554
16 Acetabulum	344	<i>Metatarsophalangeal joint and toe injuries</i>	556
General principles	344	<i>Compartment syndrome of the foot</i>	557
Acetabular fractures	345	<i>Foot sprains</i>	559
17 Hip	353	23 Principles of paediatric trauma	561
General principles	353	<i>Trauma in the skeletally immature</i>	561
Hip fractures	355	<i>The unique properties of children's bones</i>	561
Hip dislocation	378	<i>Physeal injuries</i>	561
Femoral head (Pipkin) fractures	381	<i>Types of paediatric fracture</i>	566
Periprosthetic fractures around the hip	382	<i>Interpreting paediatric radiographs</i>	569
Atypical hip fractures	386	<i>Neurovascular complications</i>	569
18 Femur	388	<i>Non-accidental injury</i>	570
General principles	388	<i>The limping child</i>	571
Femoral shaft fractures	391	24 Upper limb paediatric trauma	574
Distal femoral (supracondylar) fractures	413	Shoulder girdle	574
19 Knee	421	<i>Clavicle</i>	574
General principles	421	<i>Scapula</i>	574
Knee dislocation	430	<i>Proximal humeral fractures</i>	574
Isolated knee ligament injuries	433	<i>Glenohumeral dislocation</i>	575
Tibial spine fractures	435	<i>Humeral cysts</i>	576
Meniscal injuries	435	<i>Humeral shaft fractures</i>	576
Quadriceps and patellar tendon ruptures	437	Elbow	576
Patellar fractures	440	<i>Supracondylar fractures of the humerus</i>	577
Patellar dislocation	444	<i>Lateral condylar fractures</i>	582
Non-specific soft tissue knee injury	446	<i>Medial condylar fractures</i>	585
20 Tibia	447	<i>Medial epicondylar fractures</i>	585
General principles	447	<i>Elbow dislocation</i>	586
Tibial plateau fractures	448	<i>Olecranon fractures</i>	586
Tibial shaft fractures	458	<i>Radial head and neck fractures</i>	586
21 Ankle	475	Forearm	587
General principles	475	<i>Monteggia fracture dislocation</i>	587
Ankle fractures	482	<i>Galeazzi fracture dislocation</i>	587
Pilon fractures	513	<i>Diaphyseal fractures of radius and ulna</i>	588
Ankle sprains	522	Wrist	592
Achilles tendon rupture	522	<i>Fractures of the distal radius and ulna</i>	592
Peroneal tendon dislocation	524	Hand and carpus	594
22 Foot	526	<i>Carpus</i>	594
General principles	526	<i>Scaphoid</i>	594
Talar fractures	530	<i>Metacarpals and fingers</i>	594
Subtalar dislocation	538	25 Lower limb paediatric trauma	596
Talar dislocation	539	Pelvis and acetabulum	596
Calcaneal fractures	539	<i>Pelvic fractures</i>	596

Acetabular fractures	596	<i>Distal tibial metaphyseal fractures</i>	613
Hip	596	Ankle	614
<i>Hip fractures</i>	596	<i>Ankle fractures</i>	614
<i>Hip dislocation</i>	599	Foot	617
<i>Slipped capital femoral epiphysis</i>	599		
Femur	602	Part 3: Training in Orthopaedic Trauma Surgery	619
<i>Femoral shaft fractures</i>	602		
Knee	607	26 Getting the most from your orthopaedic training	620
<i>Fractures of the distal femur</i>	607	<i>The unstated training contract</i>	620
<i>Patellar dislocation</i>	608	<i>Getting the best from your theatre time</i>	621
<i>Tibial spine fracture and anterior cruciate ligament disruption</i>	610	<i>Tulips</i>	621
<i>Patellar fracture</i>	610	<i>Getting the best from clinic time</i>	623
<i>Proximal tibial fractures</i>	610		
<i>Tibial tuberosity fractures</i>	611	Index	624
<i>Tibial diaphyseal fractures</i>	612		
<i>Toddler's fracture</i>	613		