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Protocol for the Management of wrist Injuries in MIUs			
Author		Author's job title	
		Professional Lead MIUs	
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Main Contact		Tel: Direct Dial –	
Emergency Department		Tel: Internal –	
North Devon District Hospital		Email -	
Raleigh Park			
Barnstaple, EX31 4JB			
Lead Director			
Medical director			
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2. Purpose

This protocol is for use by staff employed by Northern Devon Healthcare Trust who have achieved the agreed clinical competence to work under this protocol.

It outlines a structured assessment process for all staff that assesses patients that present to the Minor Injuries Unit (MIU) with wrist injuries and non-traumatic wrist symptoms.

It specifies treatment for the majority of common injuries in the wrist and a number of non-traumatic wrist conditions that may present to the MIUs.

3. Presenting features

The most common symptoms at presentation are;

- Pain
- Stiffness
- Reduced range of movement
- Weakness or reduced grip strength
- Functional loss

In addition, patients may report physical signs such as:

- Bruising
- Wounds
- Deformity
- Swelling
- Erythema

4. History

A full history of the events leading up to and including the injury should be documented clearly. History taking should include:

History of acute injury

- Date and time of injury
- The mechanism of injury
 - Fall on to outstretched hand (FOOSH)
 - Direct impact
 - Hyperextension of wrist
 - Fall from height
 - Twisting/gripping injury
- Where the injury happened
- How the injury happened
 - Mechanical fall or medical fall
 - Assault or Non Accidental Injury (NAI)
- Was the injury witnessed?

History of non-traumatic wrist pain

- Onset of symptoms
- Duration of symptoms
- Pre-existing conditions
- Associated symptoms
- Events leading up to the symptoms

General features in all patients

- Hand dominance
- Radiculopathy of pain
- General history
 - Past medical history
 - Medication history
 - Social history
 - Address any safeguarding issues

5. Clinical examination

Clinical examination should follow the standard format of look, feel, and move. Conclude the physical examination by performing any appropriate special tests and assessing the neurovascular status of the injury.

Look

Carefully inspect the injury site. Include inspection of the joints above and below the injury.

Skin

- Erythema, cellulitis and tracking
- Bruising
- Wounds
- Critical skin

Soft tissues

- Swelling
- Symmetry
- Atrophy

Bony structures

- Deformity – Volar or dorsal

Feel

The skin, the soft tissues and the bony structures involved in each joint should be palpated. It is important to try to localise pain or make a clear recording if pain is diffuse or absent.

Skin

- Temperature
- Texture
- Oedema

Soft tissues

- Tenderness
- Soft tissue crepitus
- Joint spaces

Bony structures

- Distal radius
- Ulna into Ulna Styloid
- Radio-ulna groove
- Scaphoid – Anatomical snuff box
- Radial head, proximal radius
- Olecranon
- Medial lateral epicondyle
- Metacarpals

Move

Assessing range of movement in the wrist is achieved by moving the joint actively, passively and then against resistance. Active movements engage the patients' own power to achieve range of movement. Any limitations should be noted and investigated further. Active movements reveal that injury is present. Passive movements stress the inert tissues and resisted movements tests the local muscle structures. Assess:

- Flexion and extension.
- Radial and ulna deviation.
- Pronation and supination.

Special testing

Finkelstein test: Placing the thumb into the closed fist and putting the wrist into ulna deviation. If pain is produced there is suspicion of tenosynovitis to the first extensor compartment of the thumb.

Tinel's sign: Percussion of the transverse carpal ligament will elicit parathesia to the distribution of the median nerve. This test is suggestive of a carpal tunnel syndrome.

Phalen's test: Have the patient hyper flex both wrist against the dorsal surfaces and hold for 60 seconds. Parathesia to the hands is again suggestive of carpal tunnel syndrome.

Telescoping the thumb: Stabilise the hand and take hold of the 1st Metacarpal. Press the 1st metacarpal downwards towards the scaphoid and attempt to elicit pain. Highly suggestive of scaphoid injury or injury to base of thumb.

Neurovascular status

It is imperative to assess the neurovascular status distal to any injury and compare it with above the injury.

- Check the radial pulse
- Assess sensation and movement in the digits
- Assess capillary refill in the digits

6. Investigations

Imaging

- Patients' with bony tenderness over the distal radius or ulna styloid will require AP and lateral views on x-ray imaging.
- Patients with anatomical snuff box tenderness or pain on telescoping will require scaphoid views.
- If there is a fracture of the ulna shaft, it is important to assess the radial head for evidence of a Monteggia fracture dislocation. An Elbow x-ray maybe required.

Other tests

- If there is suspicion of infection, blood tests may be required for infection and inflammatory markers.

7. Treatment pathways

All patients attending ED or MIUs with a painful wrist should receive adequate analgesia. To administer adequate pain relief follow Trust guidelines for acute pain. Depending on severity of symptoms, over the counter medications and prescription medications can be used in conjunction. Practitioners in MIUs should administer analgesia in accordance with Patient Group Directions (PGDs).

Paediatric fractures

Torus (buckle) fracture

These patients require:

- Refer to buckle fracture protocol on BOB (Emergency Department)
- Adequate analgesia
- Condition specific leaflet

- Same day referral to the Fracture Clinic for a soft cast (Monday to Friday in hours)
- Out of hours/weekends ED reception to email discharge summary to fracture clinic. ED to apply POP below elbow.

Greenstick fracture

The bone is fractured but the periosteum remains intact. Due to the immaturity of the bone structure they are more likely to bend or splinter than fracture.

Minimally or non-displaced fractures require:

- Plaster of Paris below elbow backslab.
- Broad arm sling.
- Adequate analgesia.
- Fracture clinic follow up.

If there is dorsal angulation, discuss with orthopaedics to see if reduction is necessary.

Salter Harris type Fracture

These are paediatric specific fractures involving the physeal aspect of bones. These are also referred to as growth plate fractures. There are 5 main classifications. These patients will require:

- Plaster of Paris below elbow backslab
- Broad arm sling
- Adequate analgesia
- Fracture clinic follow up

Where there is tenderness over the growth plate of the distal radius, with no apparent fracture, patients may be treated for fracture.

Distal Radius and/or Ulna fractures

Transverse non-displaced

Minimally or non-displaced fractures require:

- Plaster of Paris below elbow backslab or appropriate wrist splint
- Broad arm sling
- Adequate analgesia
- Fracture clinic follow up

Any fracture involving the intra-articular surface.

- Plaster of Paris below elbow backslab
- Broad arm sling
- Adequate analgesia
- Fracture clinic follow up

Any fracture that is impacted or largely displaced.

- Plaster of Paris below elbow backslab or wrist splint for comfort during transfer
- Broad arm sling
- Adequate analgesia
- Referral to emergency department for closed reduction and casting

Distal radius shaft fracture with radio-ulna displacement

Known as a Galezzi fracture. Highly unstable.

- Plaster of Paris below elbow backslab or wrist splint for comfort during transfer
- Broad arm sling
- Adequate analgesia
- Referral to orthopaedics

Colles fracture

Fracture of the distal radial metaphyseal region with dorsal angulation +/- impaction. No involvement of the articular surface. Associated ulnar styloid fracture is present in up to 50% of cases.

- Plaster of Paris below elbow backslab or wrist splint for comfort during transfer
- Broad arm sling
- Adequate analgesia
- Referral to emergency department for closed reduction and casting

Smith fracture

Fracture of the distal radial metaphyseal region with volar angulation +/- impaction. No involvement of the articular surface. Highly unstable fracture normally requiring open reduction internal fixation (ORIF)

- Plaster of Paris below elbow backslab or wrist splint for comfort during transfer
- Broad arm sling
- Adequate analgesia
- Referral to orthopaedics

Barton fracture

Barton fractures extend through the dorsal aspect to the articular surface but not to the volar aspect. There is usually associated dorsal subluxation/dislocation of the radiocarpal joint. Highly unstable.

- Plaster of Paris below elbow backslab or wrist splint for comfort during transfer
- Broad arm sling
- Adequate analgesia
- Referral to orthopaedics

Scaphoid fracture

Anatomical snuffbox tenderness or clinical suspicion of a scaphoid fracture should be treated with:

- Wrist splint with thumb extension
- Adequate analgesia
- Referral to ED clinic at 10-14 days for review

Fractures across the waist or proximal pole may compromise blood flow to the proximal fragment. High risk of non-union or avascular necrosis if not treated correctly.

- Colles back slab plaster of paris (POP)
- Broad arm sling
- Adequate analgesia
- Referral to fracture clinic

Soft Tissue injuries

Wrist sprain, tendonitis and tenosynovitis

This diagnosis should only be considered after excluding a bony injury to wrist or scaphoid.

- Wrist splints for severe pain. Advised for 5/7 days and then discard
- Can offer broad arm sling if swelling present
- Analgesia
- Rest, ice and elevation for 2/7. Followed by movements and exercises.

Carpal bone fractures

Avulsion

- Below Elbow POP for severe symptoms
- Wrist splints for minimal symptoms
- Can offer broad arm sling if swelling present
- Adequate analgesia.
- Referral to Fracture clinic

Body fracture or dislocation

- Below elbow POP backslab for severe symptoms
- Wrist splints for minimal symptoms
- Broad arm sling
- Discuss with hand plastics or ED advice line.
- Referral to fracture clinic or plastics.
- Adequate analgesia

8. Discharge pathway

Analgesia

Pain scores must be assessed and recorded prior to discharge. Home analgesia should be discussed with the patient, parent or carer. Appropriate analgesia should be prescribed and dispensed or advice given about over the counter (OTC) medication.

Transfer for acute intervention

All immediate treatment, including analgesia, must be administered prior to transfer to a different facility. Accurate documentation of all clinical assessment and treatment must be sent with the patient as described below. Ensure that patients who are being transferred to a different unit have appropriate transport.

Discharge advice

Prior to discharge, ensure that:

- The patient demonstrates understanding of the explanations and advice given during the consultation.
- The patient demonstrates an understanding of how to manage any subsequent problems.
- The patient understands that if their condition deteriorates or they have other concerns, they should seek further advice. The patient is given advice on any specific conditions where they should return to the ED or MIU.
- The patient is issued with appropriate written advice leaflet (if available) to remind them of advice given during the consultation.

Documentation and referral

The clinical treatment record must be completed in line with Trust documentation & record keeping policies.

- A copy of the clinical treatment record must always be sent to the patient's GP surgery.
- If a patient is advised to see their GP within 24 hours of attendance, they must be given a copy of the clinical treatment record to take with them, in addition to the copy sent directly to the surgery.
- If a patient is referred to secondary care (including fracture clinic), from an MIU, they must be given a copy of the clinical treatment record to take with them.
- If a patient is referred to secondary care (including fracture clinic), from the ED, a copy of the clinical treatment record must be sent directly to the clinic.

9. References

Bellis, F. (2014) Buckle fractures of the wrist in children: pathway

Al-Nahhas, S. (2011) Do wrist splints need to have a thumb extension when immobilising suspected scaphoid fractures?

O'White, T. (2014) McRae's Orthopaedic Trauma and Emergency Fracture Management

Purcell, D (2010) Minor Injuries: A Clinical Guide.

Raby, N., Berman, L & de Lacey, G. (2014) Accident and Emergency Radiology: A Survival Guide.

APPENDIX A: Essential Documentation for All Patients Attending Unit or Centre

Adults Consent

Gain consent to be seen by a nurse practitioner

Gain consent for treatment and sharing information and document.

Clinical Presentation If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Document a full set of observations including neurological observations including Glasgow coma score if applicable.

Record EWS: if 7 or above arrange immediate transfer to secondary care.

Document pain score using numeric rating scale.

For cognitively impaired patients document any signs of pain (e.g. grimaces or distress).

Safeguarding;

- Assess for mental capacity and if person is a vulnerable adult.
- Assess for learning disability and whether patient has a hospital passport in place.
- Assess for risk of domestic abuse.
- Assess falls risk. Complete falls referral if applicable.
- Document names of persons accompanying patient.

APPENDIX B: Essential Documentation for All Patients Attending Unit or Centre

Child and Young Persons under 18 Years Old Consent

Gain consent to be seen by a nurse practitioner

Gain consent for treatment and sharing information

Assess and document Gillick competency according to Fraser guideline if applicable.

Document name of person's accompanying patient

Clinical Presentation If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Record PEWS: if any one parameter is triggered transfer to secondary care or seek advice from medical practitioner.

Use guideline Traffic Light System (NICE) 2013 if applicable.

Use guideline Feverish Illness (NICE) 2013 if applicable.

Document pain score using FLACC, Wong Baker Faces or numeric rating scale.

Safeguarding

- Assess safeguarding
- Assess for domestic abuse in the home
- Assess for learning disability

DOCUMENT ALL FINDINGS IN THE CLINICAL TREATMENT RECORD AND ACT ON THEM FOLLOWING NDHCT GUIDELINES.

