

Treatment of closed, stable volar plate injuries to the Proximal Interphalangeal (PIP) joint

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This guideline is intended for use with all patients who are diagnosed with a closed, stable volar plate injuries to the PIP joint, attending therapy departments in Worcestershire Acute Trust.

This guideline is for use by the following staff groups :

- Therapists who have undertaken a period of supervised practice in this field within the previous two years.
- Junior therapists who have undertaken basic training in hand therapy should be supervised by an experienced therapist who has held a caseload in this area within the previous 2 years.

Lead Clinician(s)

An Van Hyfte Clinical specialist Occupational Therapist

Approved by Hand Therapy Clinical Governance on: 06^h June 2024

Approved by Therapies Clinical Governance group 6th June 2027

Key amendments to this guideline

Date	Amendment	Approved by:
29 th June 2021	New document approved	Therapies Clinical Governance group
06 th June 2024	Document reviewed and approved	Clinical governance group for hand therapy

Introduction

The PIP joint is a synovial hinge joint, allowing flexion and extension. The volar plate helps maintain stability of the PIP joint in the anteroposterior plane and prevents hyper extension. (Pattni *et al* 2016). Forced, sudden hyper extension and occasionally crush injuries can result in partial or complete volar plate rupture. This can occur with an avulsion fracture (Pattni *et al* 2016). Injuries that involve less than 30% of the articular surface are stable and tend to be treated conservatively (Lee *et al* 2020).

Details of Guideline

Timeframe:	Treatment:
Straight after injury (0-4 weeks)	<p><u>Splinting:</u> Use of a Bedford splint or buddy strapping allowing the injured finger to move while using the non-injured digit for support.</p> <p><u>Advice:</u> Oedema management – keep the hand elevated to reduce swelling. Use of ice as appropriate. Demonstrate retrograde massage.</p> <p>Activity modification</p> <p><u>Exercises:</u> Active flexion/extension of the PIP and DIP joints.</p>
Considerations	<p>Joint stability can be difficult to assess in a swollen and painful joint and oedema can be masking instability. Therefore if the digit is very painful and swollen a dorsal blocking splint with PIP in neutral should be fabricated. The splint should be worn continuously, however can be removed for hygiene needs. The patient is advised to carry out active flexion exercises within the splint to prevent stiffness.</p> <p>Once oedema and pain have reduced the stability of joint should be reviewed. If stable, the splint can be replaced with buddy strapping. Unstable joints should continue treatment in the splint.</p> <p>Consider use of cohesive bandage to treat oedema in the affected digit.</p> <p><u>Exercises within the dorsal blocking splint:</u> Isolated Distal Interphalangeal joint (DIPj) flexion/extension within the limits of the splint. Isolated PIPj flexion/extension within the limits of the splint. Maintain range of movement in the MetacarpoPhalangeal joint</p>

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	Oedema management as above.
Week 4 onwards	Discontinue splinting/ buddy strapping. Exercises: If full flexion has not yet been achieved initiate tendon glide exercises and passive flexion. Measure and monitor active extension of the PIP joint
Week 6 onwards:	If there are any contractures or full extension has not been achieved, introduce passive extension and consider night extension splint.

Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: <i>(Responsible for also ensuring actions are developed to address any areas of non-compliance)</i>	Frequency of reporting:
	WHAT?	HOW?	WHEN?	WHO?	WHERE?	WHEN?
	<ul style="list-style-type: none"> • Time frame of treatment • General adherence of guideline • Outcome • Any deviation clarified 	Audit	Yearly as part of the notes audit	Senior therapists	Results to be discussed in the clinical governance group for hand therapy	Yearly

References

Aldi M., Hidalgo Diaz J.J. , Salazar Botero S., Prunières G., Vernet P., Facca S., Liverneux P. (2017), 'Results of conservative Treatment of volar plate sprains of the proximal interphalangeal joint with and without avulsion fracture' Hand Surgery and Rehabilitation, 36, pp.44-47.

Leclère M., Mathys L., Juon B., Vogelin E. (2017), 'The role of dynamic ultrasound in the immediate conservative treatment of volar plate injuries of the PIP joint: a series of 78 patients' Plastic surgery 25(3), pp151-156

Lee S., Jang S., Jeon S., (2020), 'Factors related to failure of conservative treatment in volar plate avulsion fractures of the PIP joint' Clinics in orthopaedic surgery, 12, pp 379-385.

Paschos N., Abuhemoud K, Gantsos A., Mitsionis G., Georgoulis A., (2014), 'Management of proximal interphalangeal joint hyperextension injuries: a randomised controlled trial', Journal of hand surgery, 39, pp 449-454

Pattni, Jones M., Gujral S., (2016), 'Volar plate avulsion injury, interesting case', Department of Plastic Surgery, Royal Devon and Exeter Hospital, www.eplasty.com

British Association of Hand Therapist – Trauma standards 2022, <https://www.hand-therapy.co.uk>

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation	
Miss Henning	Orthopaedic consultant Worcestershire Acute Trust
Mr Simon	Orthopaedic consultant Worcestershire Acute Trust
Mr Knox	Orthopaedic consultant Worcestershire Acute Trust
Mr McKenna	Orthopaedic consultant Worcestershire Acute Trust
Mr Craig	Orthopaedic consultant Worcestershire Acute Trust
Mr Mehra	Orthopaedic consultant Worcestershire Acute Trust
Mr Munjal	Orthopaedic consultant Worcestershire Acute Trust
Mr Luscombe	Orthopaedic consultant Worcestershire Acute Trust
Mr Docker	Orthopaedic consultant Worcestershire Acute Trust
Mr Shahid	Orthopaedic consultant Worcestershire Acute Trust
Mr Aslam	Orthopaedic consultant Worcestershire Acute Trust
Mr Issac	Orthopaedic consultant Worcestershire Acute Trust
Mr Mahmood	Orthopaedic consultant Worcestershire Acute Trust
Mr Malik	Orthopaedic consultant Worcestershire Acute Trust
Mr Pearse	Orthopaedic consultant Worcestershire Acute Trust

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;



Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	V	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	An Van Hyfte
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Details of individuals completing this assessment	Name	Job title	e-mail contact
	An Van Hyfte	Clinical specialist OT	a.vanhifte@nhs.net
Date assessment completed	10/07/24		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	<u>Title:</u> Treatment of closed, stable volar plate injuries to the PIP joint
What is the aim, purpose and/or intended outcomes of this Activity?	This is an evidence based guideline for the rehabilitation of patients who have had a stable volar plate injury to the PIP joint
Who will be affected by the development & implementation of this activity?	<input type="checkbox"/> Service User <input type="checkbox"/> Staff <input type="checkbox"/> Patient <input type="checkbox"/> Communities <input type="checkbox"/> Carers <input type="checkbox"/> Other _____ <input type="checkbox"/> Visitors V N/A
Is this:	<input type="checkbox"/> New activity <input type="checkbox"/> Planning to withdraw or reduce a service, activity or presence? V Review of an existing activity
What information and evidence have you reviewed to help	

inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	We have reviewed exciting literature and recent published Trauma standards on the British Association of Hand therapy website.
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	The guideline was circulated for comments to the referring consultants. It was discussed in the clinical governance meetings for hand therapy held on 06 th June 24
Summary of relevant findings	Guideline is in line with the latest research

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale.**

Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential <u>positive</u> impact	Potential <u>neutral</u> impact	Potential <u>negative</u> impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age	✓			
Disability	✓			
Gender Reassignment	✓			
Marriage & Civil Partnerships	✓			
Pregnancy & Maternity	✓			
Race including Traveling Communities	✓			
Religion & Belief	✓			
Sex	✓			
Sexual Orientation	✓			
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)	✓			

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)	V			

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
	N/A			
How will you monitor these actions?	By regular audit of notes, observed practice (please see monitoring section of the document)			
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	June 2027			


Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer’s etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	An Van Hyfte 
Date signed	10/07/24
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	



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Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	No

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.