Quick Guide: Looking after a Child with a Femoral Shaft Fracture in a Thomas Splint

TARGET AUDIENCE	Orthopaedic Resident Doctors / Trauma Liaison Nurses
PATIENT GROUP	Paediatric inpatients in UHW with femoral shaft fractures

Clinical Guidelines Summary

- All children over the age of 18 months and over 12 kg with a femoral shaft fracture should be managed in a Thomas splint.
- The Thomas splint should be applied before leaving the Emergency Department with adequate analgesia.
- Suspended traction should be applied within 4 hours of arrival on Ward 20.
- Adequate analgesia and diazepam should be prescribed.
- DVT prophylaxis should be considered.
- Guidance is available to support all steps of this process.

Looking after a Child with a Femoral Shaft Fracture

All children over the age of 18 months and over 12 kg with a diaphyseal femoral fracture should be initially managed in a Thomas Splint. The Thomas Splint is a device that provides traction to a long bone fracture. In some cases this will be the definitive management of the child and often will be in situ for a few days or weeks until a different management technique is used. If the child is less than 18 months or weighs less than 12 kg then Gallows traction is required.

Please note that many departments have / had the Ossur splint. This came in a paediatric and adult size and was adjustable to the length of the leg. These splints are no longer manufactured and the Kinetec splint is now being used. It is a non-adjustable splint in 4 lengths. There is a step-by-step guide available for both the Ossur and the Kinetec splint available on the R drive.

Before Leaving ED

- Thomas splint should be applied. Do not be tempted to leave on any pre-hospital splints e.g. the black Kendrick splint. This results in pressure ulceration and is designed for pre-hospital only.
- Adequate analgesia. Ideally, all children with a femoral fracture should have a femoral nerve block in ED prior to the application of the splint.
- Contact Ward 20. The traction bed is required and is helpful to give ward 20 as much notice as possible.

After Arriving on the Ward

- Application of suspended traction. This is required and not optional. It is your responsibility to do this in a timely fashion, ideally within 4 hours and no longer than 12 hours. There is a step by step guide entitled “How to Apply Suspended Traction to a Thomas Splint” available on the orthopaedic R drive, and also the Ward 19&20 shared folders. With the splint applied in ED all you need is traction cord, the pulley and the weights. **The pulley is kept in the Charge Nurse’s Office in Ward 20** (always accessible)**.**
- There are separate black rings to attach to the splint to allow suspended traction. **Trauma Liaison have ordered these and will store them in the hub.**

- Should the traction bed not be available then the alternative is to apply longitudinal traction using the swan neck. A trough or a pillow is needed to ensure the heel is off the bed. A step by step guide "How to Apply Longitudinal Traction to a Thomas Splint" is also available if required. The Swan neck is available in the trauma hub and should be signed out when used.
- The appropriate weight can vary depending on the size of the child. If you are unsure then a 1lb or 0.5 kg should be applied and can be reviewed on the ward round. The bed should also have a head down tilt which helps prevent the child sliding down the bed.
- **Adequate Analgesia prescribed**. Please ensure that the patient is prescribed simple analgesia as well as something stronger e.g. oral morphine solution for more severe pain.
- **Diazepam**. Small doses of diazepam are often required in the first 24-48 hours for spasm. This should be prescribed at a dose of 0.1mg / kg 6 – 8 hourly (as per RHC Pain Protocol).
- **DVT prophylaxis.** This should be considered in an adolescent with any other risk factor. These include BMI > 30, co-morbidities, oral contraceptive use, and family history. It is not routine for all children but should be considered.

Resources:

- If you are unsure/require advice or help please ask your senior.
- R:/Clinical/Orthopaedics/PAN LANARKSHIRE ORTHPODS/Paediatric Orthopaedics/Paediatric Femoral Folder
- There are also printed copies in the hub, ward 20 and ED.

- "Immediate Management of Femoral Fractures in UWH" - overview of management
- "How to Apply A Thomas Splint and Balanced Traction " – step by step guide to application
- "How To Apply Balanced Traction to a Thomas Splint" – step by step guide
- "How to Apply Longitudinal Traction to a Thomas Splint" – step by step guide

- "Guide to Thomas Splints for Orthopaedic Junior Staff" – written guide for medical staff
- "Guide to Thomas Splint for Nursing Staff" – written guide for nursing staff

Some of these resources are also available here:
https://www.childrensorthopaedicsglasgow.com/information-for-trainees

Appendices

1. Governance information for Guidance document

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CONSULTATION AND DISTRIBUTION RECORD	
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		.	4
			5