

Introduktion

En sträckskena är indicerad vid misstänkt femurdiafysfraktur¹. Sträckskenan återställer vävnadstryck och minskar blödning som vid femurfraktur kan uppgå till 2 liter². Genom att immobilisera frakturen och kontrollera muskelspasm minskas smärtan. En sträckskena kan förebygga neurovaskulär skada och minskar risken för fettembolisering.³

I specialisttentamen

Får läkaren använda lokal sträckskena, t ex Hare Traction Splint®, FernoTrac Traction Splint®, Sagersplint® med flera alternativ. Godkänd helhetsbedömning är obligatorisk för godkänt moment.

Indikation¹

- Misstänkt eller säkerställd femurdiaphysfraktur

Kontraindikationer⁴

- bäckenfraktur, höftfraktur med stor felställning
- signifikant knäskada
- distal tibia-fibula- eller fotledsfraktur, avulsion / amputation av underben / fot

1-Förbereder patienten

- Exponerar benet⁵
- Gör distalstatus⁶
- Perfusion: bedömer pulsar i arteria dorsalis pedis eller arteria tibialis posterior
- Känsl: bedömer känsl för beröring och smärta i tårna
- Motorik: bedömer förmågan att röra tårna
- Förklarar proceduren för patienten vid medvetande⁷
- Ger smärtstillande⁸

2-Förbereder utrustning

- Skyddsutrustning (åtminstone handskar)
- Justerar sträckskenanens längd t ex med det oskadade benet⁹

3-Reponerar och fixerar

Reponerar¹⁰:

- Fast drag i benets längsriktning (hålls kontinuerligt)
- Korrigerar först grövre vinkelfelställning
- Korrigerar sedan rotationsfelställning
- Behåller draget tills extremiteten är immobiliserad

Fixerar:

- Placerar proximala sträckskenan mot tuber ischiadicum eller mot symfylen¹¹
- Sätter remmen för proximala låret¹²
- Sätter remmen för vristen¹³
- Applicerar traktion: ca 10% av kroppsvikten, max 7 kg¹⁴
- Placerar övriga remmar men inte över knäet eller frakturen¹⁵

4-Kontrollerar

- Distalstatus¹⁷
- Sträckskenanens position under traktion och att mjukdelsskador undviks (tryck, hudtraktion)

Helhetsbedömning

- Genomför färdigheten på ett patientsäkert sätt och ändamålsenligt sätt**
- Uppvisar förtrogenhet med handgreppen**

ANTECKNINGAR

1-Indikation

“Application of a lower extremity traction splint is indicated whenever a fractured femur is suspected. This should be clinically suspected if there is pain associated with shortening, angulation, crepitus, swelling, or ecchymosis of the thigh.” (Brabson 2009)

2-Blodförlust

“In the setting of a fractured femur, muscle spasm and fragment overlap may cause the thigh to lose its cylindrical shape and adopt a more spherical appearance.⁶⁹ The resultant decreased tissue pressure and increased volume may allow 1 to 2 L of blood to accumulate at the fracture site. Traction splints are designed to align fracture segments and restore the cylindrical shape of the thigh. This in turn increases tissue pressure, decreases the potential space for blood loss, and inhibits further hemorrhage.” (Brabson 2009)

“Lårbensfraktur är oftast en effekt av kraftigt våld och kombinerad med omfattande mjukdelskada (undantag kan vara rent vridvåld i trappa eller skidbacke). Utan skada på kärl kan blodförlusten i en sådan sluten fraktur uppgår till 1-1,5 liter blod inom ramen för en ganska måttlig svullnad. Manuell reposition är svårt med tanke på muskelkrafterna. Bästa immobilisering före och under transport är sträckskena” (Lennquist 2007)

3-Fördelar

“The main purpose of the traction splint is to immobilize a fractured femur. In addition, application of a traction splint helps align fracture fragments, control spasm, minimize blood loss, reduce pain, prevent further damage to neurovascular structures, and lower the incidence of clinical fat embolism.⁶⁷ The main purpose of the traction splint is to immobilize a fractured femur. In addition, application of a traction splint helps align fracture fragments, control spasm, minimize blood loss, reduce pain, prevent further damage to neurovascular structures, and lower the incidence of clinical fat embolism.” (Brabson 2009)

4-Kontraindikationer

“Traction splints should not be used in patients with pelvic fractures, hip injuries with gross displacement, any significant injury to the knee, or avulsion or amputation of the ankle and foot.⁷² There has been some controversy over whether a traction splint should be applied to an open femur fracture. Concern has been expressed that the use of traction may allow contaminated bone fragments to retract into the wound. Should this occur, it must be relayed to the receiving clinician. As an alternative, a variety of rigid splints or the PASG can be used to immobilize the bony fragments in the position of presentation. In any case, stabilization of the fracture site to prevent further hemorrhage, neurovascular damage, or soft tissue injury should take precedence over the theoretical risk of increased contamination.” (Brabson 2009)

“The use of traction splints in general is not recommended in the presence of an associated distal tibia-fibula or ankle fracture in the same extremity. In these circumstances, the amount of traction required to realign the fractured femur can distract the distal fracture site.” (Brabson 2009)

5-Exposure

“The area of injury should be exposed” (Brabson 2009)

6-Distalstatus

“the patient’s shoe and sock should be removed to assess distal neurovascular status before and after splint application” (Brabson 2009)

7-Förklarar för patienten

“When possible, the splinting procedure should be explained to the patient.” (Brabson 2009)

“the patient should be reassured that while the initial application of traction is often quite painful, stabilization of the fracture site will help reduce subsequent discomfort.” (Brabson 2009)

8-Smärtstillar

“Pain is always associated with the application of a traction splint, and every effort should be made to provide appropriate analgesia (e.g., parenteral opiates) before splint application.” (Brabson 2009)

9-Justerar längden

“If the splint has an adjustable bar, the appropriate length should be determined by measuring the uninjured leg. The splint should extend beyond the ankle by approximately 6 inches (15 cm).” (Brabson 2009)

10-Manual traction and alignment

“If the injured leg is markedly deformed, an assistant should first attempt to straighten it using manual traction and maintain that position until a splint has been applied. The amount of traction necessary to straighten a badly deformed extremity will vary, but rarely exceeds 15 pounds. If the patient strongly resists while traction is being applied, the emergency care provider should stop and splint the injured extremity in the position it was found.” (Brabson 2009)

“Principerna för grovreposition av fraktur. Arbeta långsamt och försiktigt! Under fast drag i längsriktningen elimineras först grövre vinkelfelställning, sedan rotationsfelställning. Behåll draget tills extremiteten är mobiliserad.” (Lennquist 2007)

11-Placera proximala delen mot tuberositas ischiadicus

“With the extremity slightly elevated, the traction splint (e.g., FernoTrac Traction Splint) is placed under the injured leg and brought to rest firmly against the ischial tuberosity.” (Brabson 2009)

12-Sätt remmen omkring den proximala delen av låret

“Once the splint is properly positioned, the thigh strap should be firmly secured.” (Brabson 2009)

13-Sätt remen omkring vristen

“A harness is then placed around the ankle immediately above the medial and lateral malleoli and attached to the distal end of the traction splint.” (Brabson 2009)

14-Apply traction

“FernoTrac and other similar traction splint devices use a ratchet mechanism to apply constant (static) traction to the ankle strap. For Sager-type devices, the inner shaft of the splint is gently extended until the desired amount of traction is achieved. The traction handle/scale enables providers to set and document the traction force applied. Sager Emergency Traction Splints are unique in that they provide gentle, quantifiable traction that is dynamic in nature. The dynamic function permits the traction to decrease automatically as the muscle spasm decreases and the leg length increases. Regardless of which splint is being used, traction is applied gradually to approximately 10% of body weight or a maximum of 15 pounds. Only rarely will more traction be

required.^{71,72} The goal is to stabilize the fracture and maintain proper limb alignment; the least amount of force needed to accomplish this should be used.” (Brabson 2009)

“drag kan appliceras via slingor runt vristerna (lårbensfraktur circa 10% av kroppsvikten)” (Lennquist 2007)

15-Supportive straps

“Before moving the patient, supportive straps are applied around the thigh, knee, and distal leg to vertically stabilize the extremity.” (Brabson 2009)

Not over the knee or the fracture: <http://www.youtube.com/watch?v=Z8TzlbkXsbo>

16-Fixering på backboard

“The patient and splint should be firmly secured on a backboard. Extra care should be taken while moving the patient and when closing any transport vehicle door to avoid unnecessary movement or further injury. If the splint extends beyond the dimensions of the backboard or stretcher, additional support for the splint may be needed (e.g., short spine board) to ensure the injured extremity remains elevated throughout transport.” (Brabson 2009)

17-Distalstatus

“the patient’s shoe and sock should be removed to assess distal neurovascular status before and after splint application” (Brabson 2009)

“After application of the splint, the distal neurovascular status should be rechecked.” (Brabson 2009)

“The loss of pulses with application of a traction splint requires that the position of straps and the amount of applied traction be reassessed immediately. The position of the splint and the patient’s neurovascular status should be rechecked after any patient movement.” (Brabson 2009)

Referenser

Brabson TA, Greenfield BS. Chapter 46— Prehospital Immobilization. I: Roberts J, Hedges J, editors. Roberts: Clinical Procedures in Emergency Medicine, 5th ed. Philadelphia, WB Saunders, 2009

Lennquist S. Kapitel 5--Primärt omhändertagande. I: Lennquist S, redaktör. Traumatologi, första upplagan. Stockholm, Liber, 2007