Research article

THEORY OF A PROTOCOL FOR THE PREVENTION OF INJURIES FROM CASTS AND BRACE: SURVEILLANCE AND HEALTH EDUCATION FOR PATIENTS CARRIERS CASTS

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Abstract

The plaster immobilization or perioperative surgical treatment of fractures is a common option in Orthopedics and Traumatology. Very often the incorrect management of the cast or guardian brings patients to have troublesome complications for the patient or that endanger the survival of the limb or the life of the patient. In this work we make a possible protocol to provide the patient discharge from the emergency department or department of orthopedics and traumatology, for the proper management and adoption of the cast in order to bring down the number of possible complications.

Keywords: Brace, Cast, Surveillance, Health Care, Prevent Complication, Protocol, Lower Limb, Upper Limb

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Introduction

The plaster cast is a system that is often used in orthopedics to maintain firm the bones in place while healing [1-4]. Gypsum, plaster showers or guardians serve and are used to support and protect the bones and soft tissues that have been injured. When you break a bone, your doctor will put away the broken pieces together and will maintain them still in the correct position to do so "may fuse", heal [5-7]. It will also help to reduce pain, swelling and muscle spasms that usually are generated as a result of trauma. In some cases, splints and casts are packaged and applied even after surgery [8-11]. Guardians or "showers plaster" that means plaster, provide less support than they can do chalks complete. However, the cast’s showers can be adjusted and so can be used to treat limbs particularly swollen. Your doctor will decide which type of media is most appropriate for you [12-14]. The plasters are custom made in the form of casts which then solidify. They must properly fit the shape of your injured limb to provide the best possible support. The casts can be made of plaster or fiberglass, a plastic material that can be molded [15-20].

There are several ways to pack a plaster cast [1-20]:

- Chalk closed or "whole" that is totally fascinating, in this way will provide greater stability to the limb can only allowing micro-movements of possible fracture fragments inside. E’ chalk of choice for the treatment of fractures when possible.

- Chalk open also called "plaster splint": that is, the hard surface made of plaster wrap only half the limb injured. This type of immobilization Utilize only in case the limb is particularly swollen or there are skin wounds to be controlled and therefore cannot be closed in the plaster for a long period. Typically the plaster splint is only temporary, and was then replaced with a plaster closed because it leaves too much freedom of movement at the fracture fragments.

- Plaster load: it is a way to pack a plaster for the lower limb when you want the patient to walk on the plaster. In these cases it reinforces the sole even with the use of a "heel" of plastic or wood (see figure below).

The backing layer of a hard plaster cast can be made of glass fiber or is a plaster mold. The glass fiber is lighter, it may lead longer, and "breathe" better than the gypsum. The plaster cast, instead is heavier, less breathable but in addition to being less expensive than the glass fiber, for some uses is better Fiberglass this because it is softer and is more malleable. For example it is more indicated when you must reduce fractures during the packaging phase of the cast as often happens in the wrist fracture, or after a surgery when it is expected an excessive swelling of the limb. In these cases the plaster is recommended compared to fiberglass, because being softer, fits better to the variations of the internal volume [1-20].

The purpose of the Protocol

The purpose of this Protocol for the prevention of injuries from plaster is:

- Prevent iatrogenic injury
- Keep patient comfort.
- Monitor vascularization, sensitivity and traction device.
- Restraint District fractured.
- Prevention of skeletal deformities
- Preventing spoiled attitudes of the body.

These rules should be applied during the stages of construction of a plaster cast of a patient treated at the orthopedic emergency room of various hospitals. The procedures set out the advice that every patient should be on care in the cast’s management.

SURVEILLANCE:

A) Instant:
- The part is immobilized in a cast in respect of the axis of the anatomical district.
- Keep the limb raised to prevent the formation of edema.
- Use of the devices (pillows, braces, etc.) that allow the maintenance limb in the position prescribed.
- Use a headband to keep raised the covers.
- Monitor the central and peripheral pain
- Monitor the vascularization and perfusion device
- Monitor the sensitivity and mobility of the limbs

B) The following days:
Check the appearance of a possible pressure ulcer (presence of pain, itching and odor).
Check the function of the peripheral circulation, preventing venous stasis whose symptoms are:
increased pain, peripheral cyanosis and increased temperature.

THE CURE [1-20]:

Plaster cast and resin unit

When the patient washes must wrap the cast in a plastic bag and seal well end with a rubber band or tape. The waterproof membrane commercially available are convenient and more reliable to use.

- If the plaster is wet, the padding below can retain moisture. In such a case, the plaster must be replaced to prevent maceration of the skin.
- Never push a sharp or pointed object inside the cast (for example: To scrape the skin).
- Every day, the skin around the unit pinstripe and apply a soothing lotion on areas reddened and / or inflamed.
- Regularly the limb in the exhaust to reduce edema.
- Do not apply the load or pressure on the device pinstripe.
- Contact a doctor immediately if the plaster due to persistent pain or excessive constraint.
- Pressure ulcers or swelling unexpected may require urgent removal of plaster.
- The patient that because of the cast can not meet their needs require integrated home care.
- Use as the home to the new needs of the patient (lifts, furniture adequate, walker, bed joint, anti-decubitus mattress, toilet, wheelchair etc.).
- Avoid rubbing with the bedding, the excessive weight of sheets and blankets, using a bow.

The patient must prevent muscle atrophy by performing isometric exercises and kinesis active districts as current assets if required by medical advice (regularly contracting thigh muscles / arm where possible, to prevent atrophy due to prolonged immobilization).

SURVEILLANCE AND HEALTH EDUCATION FOR PATIENTS CARRIERS OF PLASTER CAST LOWER LIMB [1-20]

After the packaging of a plaster cast, you may feel a sense of constriction of the lower limb; this is due to edema and swelling at the interior of the injured part.

It is therefore necessary:
- Keep the limb in the exhaust leg resting on a pillow when you are in bed or on a chair if you are sitting.
  Do not stand for a long time standing.
- Encourage the circulation of the toes with a constant movement of the same.
- Do not press down on the device pinstripe resting his foot on the ground or on the same walking.
- Do not wet or wet plaster.
- During the period of immobilization use of crutches or walker for travel.
- Do not insert objects into the chalk (knitting needles, baby powder, etc.).
- Do not tamper with chalk with pliers, etc.
- In bed you can turn sideways, placing a pillow between your legs.
- Do not use nail polish that prevents the proper assessment of peripheral perfusion.

In the presence of any of the following signs it is advisable to inform the nurses and the doctor of the Operative Unit:
• Toes swollen and cold
• Cyanosis of fingers
• Numbness and tingling
• Broken or malformations of chalk (sharp edges, annoying)
• Fever (even after several days).

SURVEILLANCE AND HEALTH EDUCATION FOR PATIENTS CARRIERS OF PLASTER CAST UPPER LIMB [1-20]

After the packaging of a plaster cast, you may feel a sense of constriction of the upper limb; this is due to edema and swelling at the interior of the injured part. It is therefore necessary:

• Supporting the limb with the aid of a scarf, a scarf or an orthopedic brace, keeping the hand at the same height of the elbow.
• Do not wet or wet plaster.
• To keep the bed raised position of the limb with cushions.
• Do not insert objects into the chalk (knitting needles, baby powder, etc.).
• Encourage circulation by opening and closing the fingers of the hand in one motion.
• Do not tamper with chalk with pliers, etc.
• In bed you can turn sideways, placing a pillow under the arm / forearm
• Take care of chalk.
• Do not use nail polish that prevents the proper assessment of peripheral perfusion

In the presence of any of the following signs it is advisable to inform the nurses and the doctor of the Operative Unit:

• Toes swollen and cold
• Cyanosis of fingers
• Numbness and tingling
• Broken or malformations of chalk (sharp edges, annoying)
• Fever (even after several days)

CONCLUSIONS

Upstream of all that is described in the article it was considered appropriate to create an information package to be given to the patient with casts or braces for proper management of it, and to prevent potential iatrogenic injury. The nurses or doctors structured turn to be found in the plaster room, after wrapping of the cast or bandage, must deliver the brochure and make sure that the patient understands the recommendations before discharge (See Appendix).

References


Appendix

Knowledge and illustrative papers (2 pages)
Tips in case of immobilization of a limb with a plaster cast

It should be known that:
- Chalk and resin dry completely in a long time so you may, in the first 6 hours, to support the limb in plaster on soft floors to avoid deformations that may cause discomfort to the district or ruin the plaster.
- You should never wet the bandage or plaster cast.
- The skin should be washed with adjacent free soap and water without wetting the plaster or bandage; in case of difficulty you can use a cleansing foam.
- To lessen the pain and the risk of circulatory complications is necessary to keep the limb immobilized raised especially for the first few days;
- To prevent the swelling of the fingers (edema) and to favor its disappearance assume positions suggested in the attached images.
- It has banned the use of talcum powder, creams, ointments or powders typically inside the cast.
  
If not itch scratch with wire, crochet hooks, pens or other.
- The risk that these maneuvers is to damage the skin, creating sores infected with development of bacteria or fungi.

Then remember that you must:
- Place a pillow folded on the bed, making sure to place it so that the elbow rests on the floor of the bed and the pulse on the highest part of the cushion.
- Positioning pillows under your leg at the calf so that the foot than the buttock is raised to at least 10 cm.
- Use other aids such as bearings and rolled towel placed at the height of the heel so that the foot bandaged limb in plaster or not rotate.
- Stand as little as possible.
- Place in a chair the leg bandaged or in a cast when you are in a sitting position.

Always check that your fingers maintain temperature, color, sensitivity and mobility of those of the contralateral limb.
Warning: The fracture causes a loss of blood under the skin that in the days following trauma is evident in the form of hematoma, which migrates by gravity to the end of the injured limb.

This coloration of the skin is considered normal; it is not an excessive swelling and above the bluish color of the nails. To avoid this we need to apply the polish on your nails when you are wearing a plaster cast.
- Immediately notify a physician or go to the orthopedic emergency, if the hand or foot appear cold or callous, if you feel tingling in the fingers or fingernails appear bluish, if you feel intense pain and if for any reason the device pinstripe found to be broken or the asset to appear too wide or too narrow.
- Mobilize the limb inside the bandage or device gassed to prevent muscle atrophy and circulatory disorders by performing repeatedly during the day exercises of flexion-extension of the fingers, muscle contraction, lifting the limb.

Address and PHONE OF Orthopaedic Emergency ROOM
In posizione supina:
stivaletti

In posizione supina:
ginecchiere

In posizione supina:

In posizione seduta

In posizione eretta

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