Bandage for the wrist or ankle

DESCRIPTION

The present invention relates to a joint bandage for a wrist or an ankle with a strap element.

Extremity end joints, i.e. the wrist and ankle, which movably connect the zygopodium, i.e. the forearm or lower leg, to the basipodium and metapodium, i.e. the hand or foot, are susceptible to overloading and degenerative diseases, for example during sport or due to ageing, which can lead to pain. Therefore, these joints are often bandaged as a prophylactic or therapeutic measure.

A wide variety of wrist and ankle bandages are known in the state of the art. These are often based on a tubular knitted fabric, wherein a short compression strap running around the wrist can be associated to the knitted fabric, as shown in DE 20 2012 004 652 U1 or EP 2090 273 A2. These bandages often also have an associated stabilising bar to fix the flexion movement. With such bandages, there is always a discrepancy between a high degree of stabilisation and a high degree of freedom of movement at the same time. The stabilisation bars are also often perceived as a nuisance. In particular during temporary sporting activities such as volleyball or handball, but also during daily activities such as cycling or driving, such bars are a hindrance.

The present invention underlies the technical problem of providing joint bandages, in particular wrist bandages and ankle bandages, which have improved functionality and which, in particular, allow a high degree of stabilisation of the joint while at the same time ensuring a high degree of freedom of movement. The bandage should nevertheless be as simple as possible and thus also ensure good manageability, in particular when applying the bandage.

Summary

In an aspect, the present disclosure refers to a joint bandage for a wrist or an ankle, comprising a strap element with a first end and a second end, wherein the strap element has at least two elastic sections and at least one non-elastic section between the two elastic sections, wherein the second end of the strap element is fastened or reversibly fastenable to the strap element or to a tube element, characterized in that, characterized in that, the strap element successively has a first elastic section, a first non-elastic section, a second elastic section, a second non-elastic section and a third elastic section, wherein the first non-elastic section has a section in the form of a parallelogram or a curvature or a kink and wherein the second non-elastic section has a taper.

In an aspect, the present disclosure refers to a joint bandage for a wrist or an ankle according to the above aspect comprising an elastic tube element and a strap element, wherein the tube element has a first tube half with a first end and a second tube half with a second end, wherein the strap element has a first end and a second end, wherein the first end of the strap element is fastened or fastenable to the first tube half, wherein the second end of the strap element is reversibly fastenable to the strap element or to the first tube half, characterised in that, in the applied state, the first end of the strap element is fastened to the first tube half and is positioned on the zygopodium and the strap element runs from the first end distally over the extremity end joint to the basipodium, runs around the basipodium or metapodium on the inside, runs dorsally over the extremity end joint to the zygopodium and thereby crosses itself, runs around the zygopodium and is reversibly fastened to the strap element or to the first tube half with the second end in the area of the zygopodium.

The present ~~invention~~ disclosure solves the underlying technical problem by the subject matter of the ~~independent claims~~above aspects.

The present ~~invention~~disclosure relates to a joint bandage for a wrist or an ankle, comprising a strap element with a first end and a second end, wherein the strap element has at least two elastic

sections and at least one non-elastic section between the two elastic sections, wherein the second end of the strap element is fastened or reversibly fastenable to the strap element or to a tube element.

The present ~~invention~~disclosure also relates to a joint bandage for a wrist or an ankle, comprising an elastic tube element and a strap element, wherein the tube element has a first tube half with a first end and a second tube half with a second end, wherein the strap element has a first end and a second end, wherein the first end of the strap element is fastened or fastenable to the first tube half, wherein the second end of the strap element is reversibly fastenable to the strap element or to the first tube half, characterised in that, in the applied state, the first end of the strap element is fastened to the first tube half and is positioned on the zygopodium and the strap element runs from the first end distally over the extremity end joint to the basipodium, runs around the basipodium or metapodium on the inside, runs dorsally over the extremity end joint to the zygopodium and thereby crosses itself, runs around the zygopodium and is reversibly fastened to the strap element or to the first tube half with the second end in the area of the zygopodium.

The present ~~invention~~disclosure also relates to a joint bandage for extremity end joints, i.e. for wrists or ankles, comprising an elastic tube element and a strap element, wherein the tube element has a first tube half with a first end and a second tube half with a second end, wherein the strap element has a first end and a second end, wherein the first end of the strap element is fastened or fastenable to the first tube half, wherein the second end of the strap element is fastened or reversibly fastenable to the strap element or to the first tube half, characterised in that the strap element is at least 40 cm long.

It has been shown that the strap elements of the bandage according to the ~~invention~~disclosure can be applied to the wrist or ankle in such a way that an advantageous stabilisation of the joint is achieved by the strap element itself, so that a stabilising bar can be dispensed with if necessary and the strap elements allow good freedom of movement despite the stabilisation. The movement of the hand or foot into the restricted/supported areas permitted by the strap element is connected with an increasing amount of work to overcome the counterforce generated by the bandage. The strap elements of the bandage according to the ~~invention~~disclosure allow applying to the forearm/hand or to the lower leg/foot in an

advantageous course, which lead to a significantly increased stabilisation compared to a strap simply running around the joint, even without a stabilising bar.

In the context of the present ~~invention~~disclosure, an extremity end joint summarises the wrist and the ankle, also known as the foot joint. The zygopodium summarises the forearm and lower leg, the basipodium summarises carpus and tarsus and the metapodium summarises metacarpus and metatarsus. The present ~~invention~~disclosure relates to bandages for humans but also for other mammals.

The present ~~invention~~disclosure relates to both medical joint bandages and sports bandages. The present ~~invention~~disclosure relates to wrist bandages and/or ankle bandages.

The joint bandage according to the ~~invention~~disclosure may be provided with a tube element or without a tube element.

In a first ~~embodiment~~example, the joint bandage according to the ~~invention~~disclosure is provided without a tube element and preferably comprises only the strap element.

In this first ~~embodiment~~example, the ~~invention~~disclosure relates in particular to a joint bandage for a wrist or an ankle, comprising a strap element with a first end and a second end, wherein the strap element has at least two elastic sections and at least one non-elastic section between the two elastic sections, wherein the second end of the strap element is fastened or preferably reversibly fastenable to the strap element.

Preferably, the strap element has a fixation section which can run around the zygopodium, in particular the forearm or the lower leg, and the fixation section has two interconnectable areas, so that the fixation section is fixable to the zygopodium, in particular the forearm or the lower leg, by connecting the two areas. The strap element can thus be centered on itself by means of ring formation/ring bandage on the wrist and thus forms its own "anchor" for fixing the strap element to itself.

Preferably, the strap element has a first end and a second end, wherein the first end of the strap element is formed by the fixation section and is fastenable to the zygopodium, wherein the second end of the strap element is reversibly fastenable to the strap element, wherein, in the applied state, the first end of the strap element is positioned on the

zygopodium by the fixation section and the strap element runs from the first end distally over the extremity end joint to the basipodium, runs around the basipodium or metapodium on the inside, runs dorsally over the wrist or ankle to the zygopodium and thereby crosses itself, runs around the zygopodium and is reversibly fastened to the strap element with the second end in the area of the zygopodium.

In an alternative ~~embodiment~~example, a tube element is associated to the strap element. Such tube elements are known to those skilled in the art. Preferably, the tube element bridges the wrist or the ankle.

The ~~invention~~disclosure thus also relates to a joint bandage for a wrist or ankle, comprising a tube element and a strap element with a first end and a second end, wherein the strap element has at least two elastic sections and at least one non-elastic section between the two elastic sections, wherein the second end of the strap element is reversibly fastenable to the strap element or to a tube element.

The ~~invention~~disclosure thus also relates to a joint bandage comprising an elastic tube element and a strap element, wherein the tube element has a first tube half with a first end and a second tube half with a second end, wherein the strap element has a first end and a second end, wherein the first end of the strap element is fastened or fastenable to the first tube half, wherein the second end of the strap element is reversibly fastenable to the strap element or to the first tube half, and wherein the strap element is at least 40 cm long.

The ~~invention~~disclosure also relates to a joint bandage for a wrist or an ankle, comprising an elastic tube element and a strap element, wherein the tube element has a first tube half with a first end and a second tube half with a second end, wherein the strap element has a first end and a second end, wherein the first end of the strap element is fastened or fastenable to the first tube half, wherein the second end of the strap element is reversibly fastenable to the strap element or to the first tube half, characterised in that, in the applied state, the first end of the strap element is fastened to the first tube half and is positioned on the zygopodium and the strap element runs from the first end distally over the extremity end joint to the basipodium, runs around the basipodium or metapodium on the inside, runs dorsally over the extremity end joint to the zygopodium and thereby crosses itself, runs around the

zygopodium and is reversibly fastened to the strap element or to the first tube half with the second end in the area of the zygopodium.

The tube element is preferably made of neoprene, a woven fabric or knitwear, for example a knitted fabric or a knitting. Preferably, the tube element has a proximal opening. Distally, the tube element can either have a distal opening or be designed as a glove or stocking. Preferably, the tube element also has a separate opening for the thumb or the big toe.

Preferably, the joint bandage has no stabilising bar. Surprisingly, it has been shown that the joint bandage according to the ~~invention~~disclosure, in particular with a tube element, can dispense with a stabilising bar and still achieve sufficient stability thanks to the strap guiding made possible by the strap element according to the ~~invention~~disclosure. However, it may be possible to additionally provide for the possibility of inserting a stabilising bar into the joint bandage, in particular the tube element, at least temporarily, if required.

The joint bandage can have a tensioning element on the tube element. This tensioning element can be used to preform and/or tension the body of the tube element so that the tube element can be put on more easily. Even if the tensioning element can be designed as a bar, it is not a stabilising bar, as the tensioning element does not, should not and cannot assume a stabilising function of the joint due to its form and positioning on the joint bandage, but only prevents the tube element from deforming in an undesirable way, in particular from being compressed.

The tube element can be equipped with pads if required.

Preferably, the strap element is at least 40 cm long. When the joint bandage is in the put-on state, a strap element that is at least 40 cm long allows a strap course around the forearm/lower leg, hand/foot and joint located therebetween in accordance with the present ~~invention~~disclosure.

The first end of the strap element is fastened either to the tube element or to itself in the area of the zygopodium. The fastening of the first strap element can be reversible, for example via a Velcro fastener or via press studs, or the strap element can be permanently fastened with its first end to the tube element or permanently fastened to itself so that it

wherein the first non-elastic section has a section in the form of a parallelogram or a curvature or a kink and wherein the second non-elastic section has a taper.

Preferably, a non-elastic pre-section is further associated to the first elastic section.

Preferably, the strap element comprises at least two reversibly interconnectable strap part elements.

Preferably, the strap element comprises a first strap part element with the first end and a second strap part element with the second end, wherein the second strap part element is elastic.

Preferably, the first strap part element and the second strap part element are reversibly interconnectable via a third end on the first strap part element and a fourth end on the second strap part element, wherein preferably the fourth end on the second strap part element comprises a connecting element with which the second strap part element is reversibly fastenable to the tube element without the first strap part element. In this preferred ~~embodiment~~example, the second strap part element can be used without the first strap part element, for example as a cuff placed around the wrist or ankle. This allows the bandage to be advantageously adapted to the patient's rehabilitation process or the wearer's intensity of movement independently of rehabilitation, for example, by using both strap part elements as presently described in a first therapy step, then using only the second strap part element as a cuff around the wrist or ankle in a second optional therapy step and using the tube element as a compression cuff in a third optional therapy step. However, such an application and removal of the bandage with the first strap element is also advantageous in other ways, for example during sports or driving.

Of course, the strap element can also be designed as a single piece, for example if only prophylaxis or therapy with the strap course described here is desired.

A further ~~embodiment~~example of the joint bandage for a wrist or an ankle according to the ~~invention~~disclosure comprises a strap element with a first end and a second end, wherein the strap element has at least two elastic sections and at least one non-elastic section between the two elastic sections, wherein the second end of the strap element is fastened or reversibly fastenable

to the strap element. In this ~~embodiment~~example, a tube element may or may not be provided. In this ~~embodiment~~example, the strap element forms a loop which can run around the hand or foot, running between the thumb/big toe and the index finger/second toe. The elastic section of the strap is positioned on the palm of the hand or the outer surface of the hand or the inner surface of the foot or the outer surface of the foot, while the two inelastic sections are positioned on the edges of the hand or the edges of the foot, so that the position is secured and cutting is prevented. The loop is formed by connecting the second end of the strap element to a middle section of the strap element. From this connection area to the first end of the strap element, the strap element runs over the joint to the forearm or lower leg. At the forearm or lower leg, the first end of the strap element is either connected to a tube element, which can also be relatively short, or the first end of the strap element forms a fixation section as described above, with which the strap element is fastenable directly to the forearm or lower leg. The connection area of the strap can be positioned either on the upper side or the lower side of the hand or foot, depending on which direction of movement is to be limited.

The person skilled in the art can easily combine the elements described in the various ~~embodiment~~examples of the joint bandage according to the ~~invention~~disclosure.

Further preferred embodiments are shown in the examples, the figures and the sub-claims, without these being to be understood as limiting.

The movement of the hand or foot into the restricted/supported areas permitted by the strap element is connected with an increasing amount of work to overcome the counterforce generated by the bandage. The necessary force increases until the point at which no further movement in the restricted/supported direction is possible. From a certain joint position, a counterforce is generated by the strap guide, similar to a lasso, which tightens further under stress and thus fixes an object more firmly. Thus, in the embodiment shown, a stabilising bar can be dispensed with in an advantageous manner.

It shows

Figure 1 an embodiment of a wrist bandage with tube element according to the invention