PROTECTIVE SLEEVE FOR ELBOW OR HEEL

Lois Sotherlin, 607 W. 5th St., San Bernardino, Calif. 92410
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The present invention relates to a new and useful protective sleeve that is adapted to be worn on the elbow or heel to provide a pad to protect and cushion the skin on the corner of the elbow or at the back of the heel, so that it will not become tender and painfully sensitive from constant pressure and frictional contact with the bedding.

Patients who are confined to bed for extended periods of time during illness or convalescence frequently develop bed sores on the elbows and heels owing to pressure of the elbows and heels against the bottom sheet on the bed, and to frictional rubbing of the sheet against these parts each time the body is moved. A similar condition occurs frequently in wheel-chair patients, who must sit for long periods of time with elbows resting on the arm rests. In either case, the condition sometimes becomes extremely painful, and is a source of much discomfort and distress to the patient.

Therefore, it has sometimes been necessary to bandage the elbows of bedridden patients to protect them from the bedding, but this is not a satisfactory solution to the problem, as a bandage that is thick enough to cushion the elbow properly is too bulky for comfort, and tends to restrict movement of the arm. Also, a bandage that is wrapped too snugly around the arm may constrict circulation somewhat, causing discomfort. Moreover, it is time-consuming and troublesome to remove or replace bandages.

The primary object of the invention is to provide a protective sleeve for cushioning and protecting the elbow or heel, which can be pulled onto the arm or foot as quickly and as easily as a mitten or a sock might be pulled on.

Another object of the invention is to provide a protective sleeve that affords a maximum of cushion directly over the point of the elbow or at the back of the heel, where it is needed, and a minimum of bulk elsewhere, so that there is no objectionable restraint of movement, or uncomfortable constriction.

A further object of the invention is to provide a protective sleeve for the elbow or heel, that is highly absorbent so that it will absorb perspiration, and readily washable so that it can be kept sanitary at all times.

These and other objects and advantages of the present invention will become apparent to those skilled in the art upon consideration of the following detailed description of the preferred embodiment thereof, reference being had to the accompanying drawings, wherein:

FIGURE 1 is a perspective view of a protective sleeve embodying the principles of the invention, showing how it is worn on the elbow;

FIGURE 2 is a cross-sectional view of the same, taken at 2—2 in FIGURE 1;

FIGURE 3 is a somewhat enlarged, fragmentary sectional view taken at 3—3 in FIGURE 2;

FIGURE 4 is a fragmentary sectional view, taken at 4—4 in FIGURE 2;

FIGURE 5 is a perspective view, showing how the sleeve of the invention is worn on the foot to protect the heel.

In the drawings, the protective sleeve of the invention is seen to comprise a tubular knit sleeve 10 of cotton or other absorbent fiber, which may be flat knit (or stockinet knit) for the greater portion of its length, with elastic ribbed cuffs 11 and 12 at the ends thereof. Preferably, the knit tube 10 is turned in on itself from one end to form a double thickness sleeve, having an outer layer 13 and an inner layer 14. At the other end of the tube, the ends of the outer and inner layers 13 and 14 are folded inwardly on themselves and stitched together at 15, as best shown in FIGURE 4.

On one side of the tube 10 about midway between its ends, the uniform stockinet knit is interrupted by a wedge-shaped insert portion 16. This insert is formed to give an outwardly protruding bulge, similar to the heel on a sock. Enclosed between the outer layer 13 and inner layer 14, in the area of the insert portion 16, is a round, slightly cupped, foam rubber pad 18, the edges of which are tapered down to a feather edge. The pad 18 is preferably adhered to the outer layer 13 of the tube by a spot of cement 20 applied to the convex outer surface of the pad at the center thereof. In this way, the pad is held in place, and is prevented from slipping with respect to the knit tubing.

The outwardly bulged insert portion 16 and the slightly cupped foam rubber pad 18, with its tapered edges, give a contoured sleeve that smoothly fits the normally slightly bent elbow, and accommodates itself to any movement of the arm. While the dimensions of the invention are not critical, and might vary with the size of the patient, I have found that for the average adult, a sleeve that is about 7 inches long and about 4½ inches wide when lying flat and relaxed, is about right. The contoured foam rubber pad 18 should be about 3½ to 4 inches in diameter and about ¼ to ½ inch thick at its center.

If desired, the knit tubing 10 might be made in a single thickness of material except for a partial lining covering the inner surface of the foam rubber pad 18. Either the full lining shown in the drawing (i.e., inner layer 14) or the partial lining mentioned above could be knit to provide a reinforced heel area directly over the point of the elbow, similar to the insert portion 16, if desired for longer wear.

If it is desired to use the invention to protect and cushion the heel, the knit sleeve 10 is pulled onto the foot as shown in FIGURE 5, with the insert portion 16 and cushion pad 18 at the back of the heel. When worn in this manner, the sleeve of the invention provides fully cushioned protection for the heel.

While I have shown and described in considerable detail what I believe to be the preferred form of my invention, it will be understood by those skilled in the art that various changes may be made without departing from the principles of the invention as set forth in the following claim:

I claim:

A protective sleeve for use by a patient confined to wheel chair or bed, for the purpose of cushioning the elbow or heel, comprising:

a tubular knit sleeve of a size to fit snugly over the arm or foot of the patient, said sleeve being stretchable in either direction and being knit of a moisture-absorbent yarn;

said sleeve being formed with a double thickness and having an inner layer and an outer layer;

the ends of said sleeve being formed with rib-knit cuffs for maximum stretchability and snug fit;

at least the outer layer of said sleeve being knit to provide an outwardly bulged generally spherically curved portion on one side thereof corresponding to the heel of a sock, said outwardly bulged portion being formed approximately midway between the ends of said sleeve;

a generally round, slightly cupped pad of foam rubber disposed within said sleeve between said inner and
outer layers thereof, and positioned with the convex side of the pad facing outwardly and contacting the inner surface of said outwardly bulged portion of said sleeve, said convex side having substantially the same spherical curvature as said outwardly bulged portion; the concave side of said pad being inwardly faced to receive the point of the patient's elbow or heel, and the edges of said pad tapering to feather edges; and cement means securing said pad to said outer layer only of said sleeve, whereby said pad is prevented from a slipping or shifting out of place and said inner layer of said sleeve may move relative to said pad.