

# Effective Prevention of MDRPI

## Prophylactic Measures and Examples

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After attending the inaugural Certified Nurse Training Course at the Shizuoka Cancer Center in 2009, she obtained the Wound, Ostomy, and Continence Certification in 2010. Since 2016, she has been providing lectures as a part of the Certified Nurse Training Curriculum as a lecturer in the field of Medical Device-Related Pressure Injury (MDRPI).



MDRPI stands for Medical Device Related Pressure Injury. These wounds are different from conventional pressure injury in that they result from factors other than one's weight or from external pressure that may or may not involve one's weight.

The approach to safety in modern medicine demands that patients are protected from risks in all aspects. The Japanese Society of Pressure Ulcers has regarded MDRPI as a key issue in medical safety and has conducted investigative surveys and created guidelines since 2011.

This report will cover the basic recommendations to prevent the MDRPI and how Shizuoka Cancer Center implements its MDRPI measures with actual case studies.

### General MDRPI Prevention and Management

For prevention, Patient-related factors such as skin conditions and bony prominence need to be fully assessed. Further, Device-related factors such as medical device sizes and forms need to be fully assessed as well. Care plans can then be devised to correctly apply and secure devices to minimize any injury.

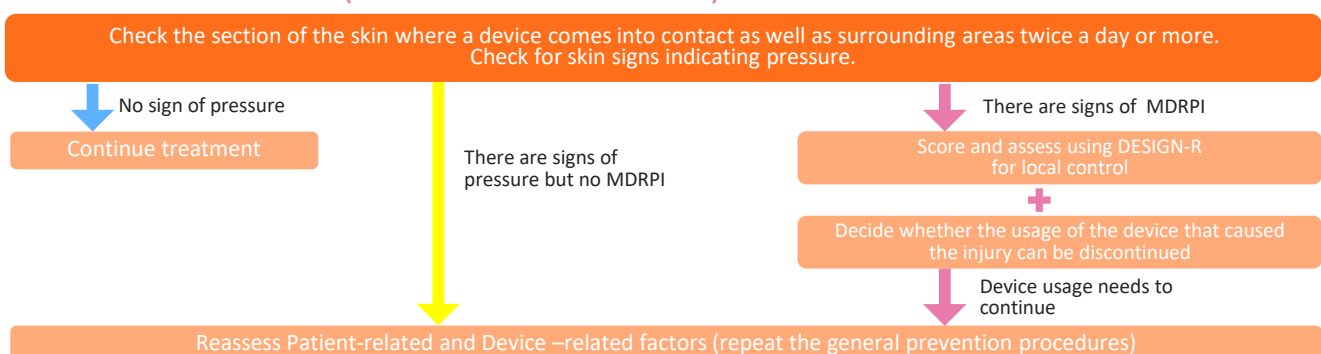
#### ● General Prevention (Before treatment)

- 1. Assess Patient-related and Device-related factors**
- 2. Gather physical measurements and other information required to select the materials/sizes of medical and other devices**
- 3. Devise and implement care plans**  
\*The care plan needs to address areas considered risk factors in Patient-related or Device-related areas, and the plan needs to remove or minimize such risks.
- 4. Correct application and securing of medical and other devices**

Even with prevention with the steps above, the subsequent constant management is essential. It is necessary to check for MDRPI after the treatment starts, and measures need to be taken if there are issues.

The following chart describes the management. If the usage of a device that caused MDRPI needs to be continued, Patient-related and Device-related factors need to be considered, such as how prone the skin is to injury and what the correct usage method of a medical device is to prevent MDRPI.

#### ● General Prevention (After start of treatment)



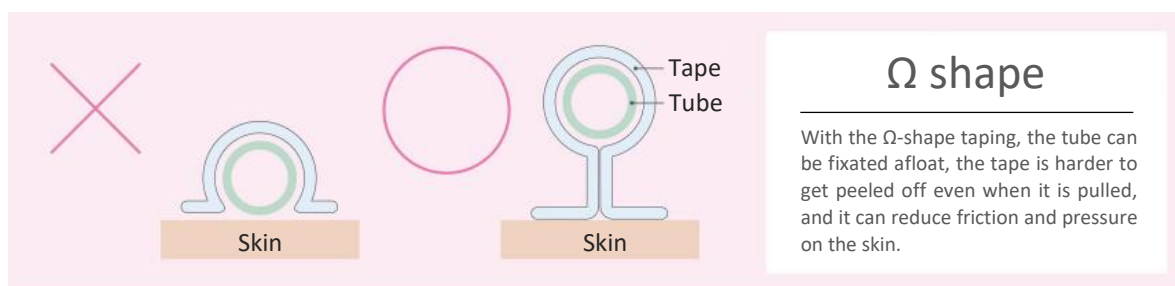
## Case Studies in Practice

### Prevention of Intravascular Catheter-related MDRPI

When inserting intravascular catheters in areas where joint movements occur, friction and moving of the catheter can occur easily. As a result, sections with especially little subcutaneous tissue such as the back of the hand or foot have much higher risks of MDRPI. MDRPI can occur when the locking nut of the catheter is pressed against the skin. Caution also needs to be exercised when firmly wrapping around the bandage to secure the catheter for delirious patients. COCOROLL for Catheters is a sterilized cushion-dressing. This COCOROLL was used in the case shown in the pictures below to put the product between the locking-nut section and the skin to avoid pressure. When there is a high risk, prophylactic measures like this can prevent MDRPI. Therefore, it is necessary to consider which areas MDRPI is most often found in and what kind of items are ideal for prevention.



While using cushioning materials is important, the tube fixation method is also crucial. A fixation method like the one shown in the bottom left illustration creates strong pressure on the part of the skin that comes in contact with the tube from the pressure of the tape at the top. As a result, the fixation gets weaker, and it is more likely to cause MDRPI. I recommend firmly taping like the illustration at the bottom right forming an "Ω" symbol shape. Taping in this manner increases the area tape is attached to the tube, thereby improving adhesion. In addition, it creates space between the tube and the skin, which reduces the pressure on the skin.



### Reducing Pressure from NPPV Masks

The picture below shows the case of an NPPV mask using the cushion-dressing COCOROLL to reduce pressure. The product was directly applied to the section where the mask and the band came in contact with the skin, attempting to reduce the pressure.

One thing to note here is that NPPV masks tend to always create a moist environment. For patients with weak skin, it may be necessary to apply the cushion-dressing on devices to avoid skin injury from tape adhesion.



### MDRPI can be Prevented with Care

The key is to first understand that any patient who comes into physical contact with medical devices for a prolonged period has a risk of suffering from MDRPI. All medical professionals need to be aware of MDRPI and work on the prevention/management of MDRPI across job spectrums. MDRPI is an injury that can be prevented. That is why my team will continue questioning whether a particular medical device is truly necessary for a patient.

● These reports are only examples of prophylactic measures and are not meant to guarantee effectiveness.