Japan Council for Quality Health Care

Project to Collect Medical Near-Miss/ Adverse Event Information

Medical Safety Information

No.192, November 2022

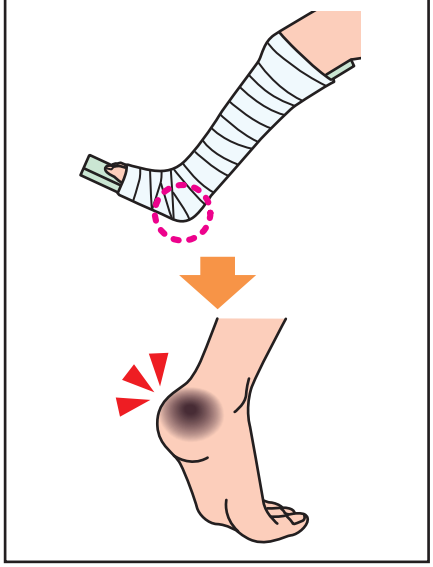
Pressure Ulcers Caused by Medical Devices

Eighty cases have been reported in which patients developed medical device-related pressure ulcers (MDRPU) (information collection period: from January 1, 2018 to September 30, 2022). This information was compiled on the basis of the content featured in the Analysis Themes section of the 67th Quarterly Report.

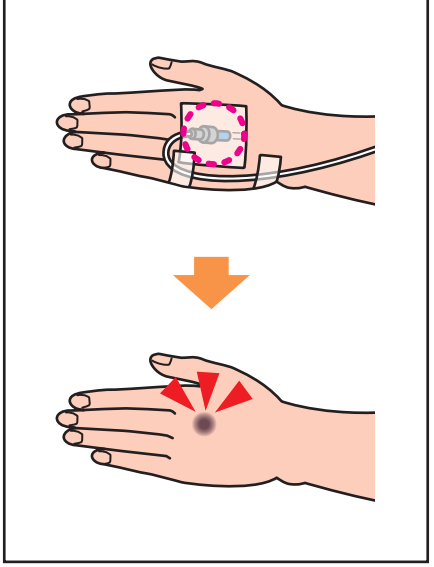
Cases have been reported in which pressure on the skin from a medical device caused ulceration at the site concerned.

Main devices involved in pressure ulcer development and number of cases

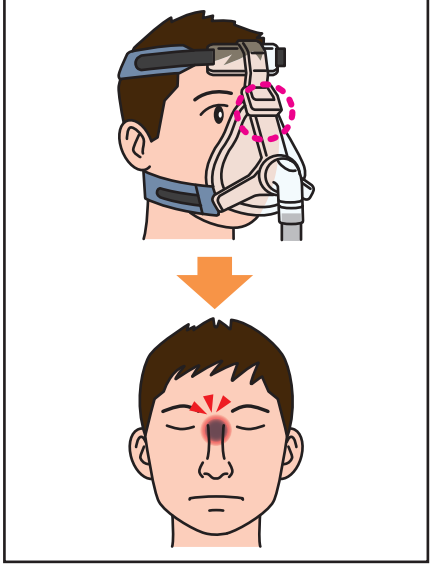
Fixation splint 12 cases



Indwelling needle 12 cases



NPPV mask 10 cases



- Among the other reports were 6 cases involving tracheostomy tubes (including strings used to fix them in place), 5 cases involving gastric/ileus tubes, 4 cases each involving elastic stockings and mittens, and 3 cases involving devices used to hold surgical positions.
- In this context, the term “medical device” also includes articles and instruments, etc. beyond the legal definition of medical device.

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Case 1

The patient had suffered a supracondylar femur fracture and was hospitalized after a splint was used to fix the limb from the femoral to the calcaneal region. As splints are only removed when a physician is providing treatment, the nurse was unable to observe the skin regularly. Upon removing the splint for surgery on the fifth day of admission, the physician discovered an ulcer on the right calcaneal region and protected it with a dressing. After surgery, the patient was found to have exudate, blackening, and necrosis at the right calcaneal region.

Case 2

When the nurse fitted the patient with a mask to provide noninvasive positive pressure ventilation (NPPV) at the time of admission, they attached a dressing to the nasal dorsum and both cheeks. The nurse fixed the mask tightly to the patient's face, to ensure there were no leaks. When providing oral care on the fourth day of admission, the nurse removed the dressing and found redness on the nasal dorsum. They changed the dressing and continued to use the mask on the patient. On the sixth day of admission, the patient was found to have exudate extending from the nasal dorsum to the right cheek, and skin necrosis had occurred.

Preventive measures taken at the medical institutions in which the events occurred

- **Inform staff that fitting or fixing in place devices such as fixation splints and NPPV masks can potentially cause MDRPU.**
- **Ascertain whether specific symptoms are present and regularly observe skin at sites where medical devices might be causing pressure.**
- **Assess the risk of MDRPU and, if necessary, seek advice from a dermatologist or certified nurse in wound, ostomy and continence nursing.**

The measures above are examples. Please consider initiatives suitable for your own facility.

* As part of the Project to Collect Medical Near-Miss/Adverse Event Information (a Ministry of Health, Labour and Welfare grant project), this medical safety information was prepared based on the cases collected in the Project as well as on opinions of the "Comprehensive Evaluation Panel" to prevent the occurrence and recurrence of medical adverse events. See the Project website for details.
https://www.med-safe.jp/

* Accuracy of information was ensured at the time of preparation but cannot be guaranteed in the future.

* This information is intended neither to limit the discretion of healthcare providers nor to impose certain obligations or responsibilities on them.

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