

IMPACT OF FIXATION AND DRESSING MATERIAL ON CATHETERS' INTEGRITY AND ACCIDENTAL REMOVAL OF TUNNELED CUFFED CATHETERS IN A PEDIATRIC SETTING

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INTRODUCTION

For the past 28 years, pediatric nurses in our hospital have used a self-developed method to protect the insertion site of a sternally positioned tunneled cuffed catheter and the catheter itself. Compresses were folded over the curled-up catheter and were held in place by adhesive dressings (picture a, b & c), in order to protect the catheter from grabbing hands and other external factors. Dressing change was performed at least twice a week, to check the catheter insertion site.

AIM

To investigate whether a transparent, weekly changed, iv-dressing on the insertion site of a curled dangling catheter would likely increase accidental removals or catheter integrity problems in comparison to our self-developed dressing method.

Depending on the age of the child, the catheter insertion site was positioned infraclavicular to avoid visible scarring. The first 8 weeks the catheter was fixed with a Statlock®.

In both group 1 ('packed catheter') and group 2 ('dangling catheter'), the catheter was sutured at the insertion site to the skin. When the suture did not create difficulties, it was kept in place. When irritation or skin traction occurred, the suture was removed.

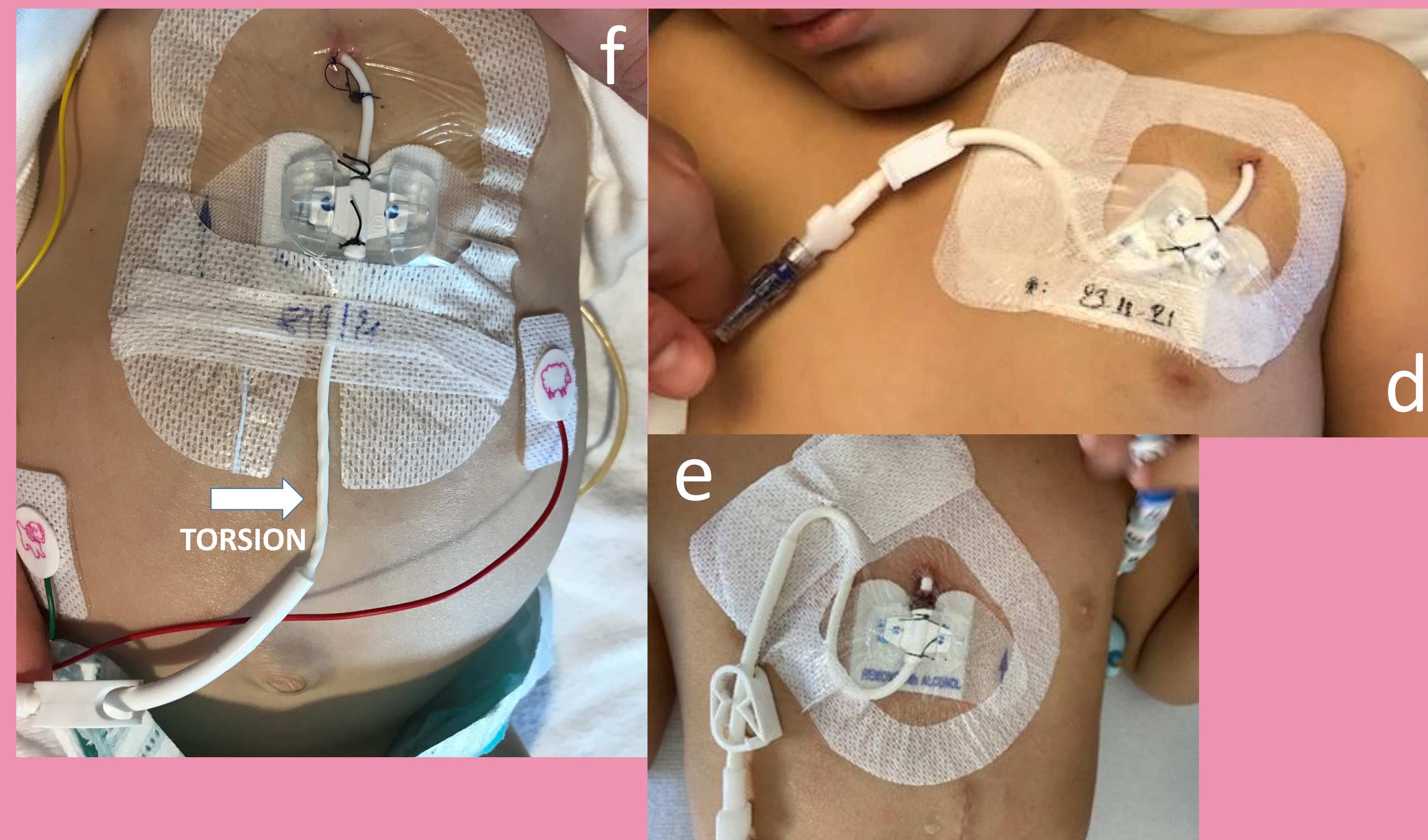
RESULTS

From September 2019 to September 2020, 47 catheters were placed in 44 children (group 1). One year later, 44 catheters were placed in 36 children (group 2).

There was 1 accidental removal and 1 ruptured catheter in group 1 ('packed catheter') versus 3 accidental removals and 1 ruptured catheter in group 2 ('dangling catheter').

All accidental removals occurred in children under 3 years of age. In group 2, two accidental removals were caused by a downward force on the catheter (e.g. a parent standing on the extension line), causing the silicone to thin and slide out of the Statlock®.

Experience showed that, by changing the direction of the split of the dressing (picture d & e), downward force can be avoided. An additional advantage is that the part most vulnerable to torsion (picture f) is protected by the dressing.



METHOD

Data of children between 0 and 16 years of age, who received a cuffed tunneled catheter were studied. We compared the number of accidental removals and integrity problems between children with a 'packed catheter' (2019-2020, group 1) and those with a 'dangling catheter' (2020-2021, group 2). Age and oncological status of the child were considered as influencing factors.

DISCUSSION & CONCLUSION

Despite an increased number of accidental removals, the 'packed catheter' was not reintroduced. After all, it turned out to be an overall advantage to reduce the number of dressing changes to once a week and to be able to see the insertion site at all times, as stipulated by international guidelines.

Despite their learning curve, pediatric nurses continued to describe the application of a Statlock® in young children as "challenging". Thus, in 2022 our policy was changed again:

1: From day 1 after catheter placement, strips are placed in a certain order: upon and under the curl (picture g). They prevent the curled catheter from changing position by whatever means it is pulled.

2: The split of the dressing is always between 10 and 2 o'clock for that same reason (picture h & i).

3: Catheters insertion site is always presternal in children under 2 years of age, so the big dressing can be placed without folds on a small chest. In older children, the insertion site is discussed with parents and physicians.

