Fellow Column: Self-Adherent Elastic Wrap Dressing Injury in a Neonate

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Summary:

Due to delicate skin, injuries secondary to the use of peripheral intravenous (PIV) catheters are not uncommon in neonates. We present a case of hand injury secondary to the use of a tight elastic band used to secure the PIV.

Keywords: *Hand injury, elastic dressing, neonate*

Case:

The newborn male infant was born to a 19-year-old G1P1001 female at 38 weeks 6 days gestation by vaginal delivery. Apgar Scores were at 1 and 5 minutes were 8 and 9, respectively. Mother had adequate prenatal care with pregnancy complicated by anemia in the third trimester, pyelectasis, and echogenic intracardiac focus on prenatal ultrasound (resolved on subsequent ultrasounds). Mother was admitted to the Labor Unit and developed increasing temperatures approximately 7 hours prior to delivery. The maximum temperature was 101.3F, 1.5 hours before delivery. She was started on ampicillin and gentamicin. She was also given acetaminophen once prior to delivery. She was GBS negative; therefore, she did not require penicillin prophylaxis. Delivery was augmented by vacuum extraction. Skin to skin was deferred, and the baby was taken to the newborn nursery.
The baby transitioned without any significant signs of infection except an initial temperature of 102.4F that decreased to 98.7F in one hour. He remained afebrile thereafter. A septic workup was collected (complete blood count with differential, CRP, and blood culture), and intravenous antibiotics were initiated (ampicillin and gentamicin).

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Newborn Nursery Course:

While preparing for discharge after 48 hours of monitoring and antibiotics, the IV was removed from the right hand. The right hand (specifically the thumb) was noticeably swollen and blistered with what appeared to be a constriction injury from the self-adherent elastic wrap holding the IV in place (Figure- Day 1a-d). A decision was made to hold the discharge and watch the patient overnight in the nursery. Overnight, at least one of the blisters was noted to have ruptured and drained yellow fluid. The swelling worsened and became tenser; however, some of the bruising and the thumb indentation improved. A subsequent decision was made to transfer the baby to the NICU for antibiotics and further workup with labs and cultures.

NICU course:

The infant was started on IV vancomycin, which was switched to oral Clindamycin. The infant continued to tolerate oral feedings well. A gradual improvement was noted (Figure Day 2, 3, and 5). The wound service was consulted, and they concurred with the plan. The infant was discharged home on day 5 of life on oral Clindamycin with close follow up.

Discussion:

A spectrum of cases has been reported ranging from swelling, ischemia, and gangrene in association with bandage and dressings. (1-5) In our case, we noted local effects in the form of irritation and blister formation. Fortunately, we were able to decompress it in time, saving the baby from any untoward complications. Maintaining a usable IV site is a work of art. The use of self-adhesive elastic wraps has helped in securing these IV sites. Unfortunately, the proper care and surveillance of the site are critical to optimizing care and outcomes. In the nursery, IV sites are not monitored as frequently as in the NICU, which can possibly endanger the infant with potential complications.

There is plenty to learn from this unique care. Surveillance of the IV site must take priority. Protocols may need to be adjusted for site checks every four to six hours instead of twelve hours. Ac-

Figure

Day 1 (a-d): Infant in the nursery

Day 2 (a-b): Infant admitted in the NICU

Day 3: Infant is the NICU

Day 5: At discharge

Figure 1: Showing the progression and improvement over time (Day 1 to 5)

curate and thorough documentation must also take place. This is key because the patient remained stable clinically, and there were no signs of infection, distress, or instability noted in labs or vitals. Finding other ways to secure these IV sites is also of utmost importance to prevent future constriction injuries that could lead to amputation from digital ischemia.

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