J Forensic Sci, Nov. 2002, Vol. 47, No. 6
Paper ID JFS2002168_476
Available online at: www.astm.org

CASE REPORT

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Fatal Accidental Hanging from a Lanyard Key Chain in a 10- Year-Old Boy*

ABSTRACT: Lanyard chains are commonly worn around the neck to hold keys and identification badges. A ten-year-old Black male child was home alone jumping and swinging of the raised crossbars on his mother's four-poster bed. He commonly did this. He also wore a lanyard around his neck with his house key, which he used to let himself in after school. His mother found him hanging on the corner of the bedpost by the lanyard when she returned from work. The death scene showed that he was jumping on the bed and the lanyard hooked over the top of the corner bedpost, causing first and second cervical vertebrae dislocation of an abrupt "drop-type" hanging with neck abrasion marks. Lanyards, or any loose rope material around the neck, are inherently dangerous due to their strength and ability to catch fixed or moving objects. Safety modifications to the lanyards are easily made with "breakaway" Velcro-type or plastic clip fasteners. This is the first reported case of an accidental hanging after review of the medical literature and files of the U.S. Consumer Products Safety Commission.

KEYWORDS: forensic science, lanyard, hanging, accidental

The popularity of lanyard key chains has exploded in recent year, especially after the events of September 11, 2001 and the need for heightened security. Lanyards are used to hold keys or identification badges at work, school, and home. The lanyards are made of strong woven cloth or nylon material around the neck hanging to the mid-chest with a plastic clasp. The lanyard can be secured to itself at this point by the clasp or sewn to itself. The lanyard chains are also commonly imprinted with the institution name or company advertising slogan. The danger is that these popular lanyard chains are extremely strong and may not break or separate if they become entangled on an object. We present a brief report of the first reported lanyard-associated fatal accident and recommend the use of either a safety lanyard or safety lanyard modifications.

Case Report

A 10-year-old Black male child was found hanging and suspended in his mother's bedroom from an elevated bedpost of a four-poster bed by a lanyard key chain around his neck. His mother found him when she returned home from work late in the evening. He was "home alone" during the day while she worked and was not in school due to a note-writing incident the day before. He received a one-day suspension for the incident and was not depressed or angry, according to relatives. The boy usually let himself in after school and a relative uncle would check on him near dinnertime. The mother gave her son a lanyard that held a house key and one of her rings at the central fastener. His mother found him hanging when she returned from work and lowered him from the bedpost, laid him on the bed, and called the police. Resuscitation was unsuccessful and his body with the lanyard was brought to the medical examiner's office for examination. Examination showed a well-developed and well-nourished ten-year-old–appearing child with a sharply backward and upwards slanting abraded ligature impression mark consistent with the lanyard around his neck. His neck externally showed mark hyper mobility in addition to the abrasion and internally showed marked dislocation of the 1st and 2nd cervical vertebrae bodies with marked posterior neck hemorrhage, consistent with an abrupt drop-type hanging (1). There were no petechiae.

Scene investigation and interviews were conducted the next morning to determine the nature and circumstances of the hanging. The boy commonly wore the lanyard chain outside his clothing at all times during the day. His mother stated he was continually being reprimanded for jumping up and down on her bed and swinging from the crossbars that connected the raised four bedposts. The crossbars were bent downward due to his swinging. The four corners of the raised metal bedposts were of sufficient strength and configuration to support his weight and catch the lanyard if he was jumping up and down. The lanyard could easily support his weight without breaking. Upon examination, the lanyard was sewn to itself with thick thread before it continued on to the metal fastener that held the key and ring. There was no evidence of an intentional hanging. The uncle had knocked on the door at 5 p.m. to check on the boy, but left when no one answered, believing the boy was at another relative's home for the day. The death was ruled as an accidental hanging after completion of the autopsy and further investigation. Review of the medical literature and records of the U.S. Consumer Product Safety Commission failed to reveal any similar incidents involving lanyards. This is the first reported case of a lanyard hanging death in the United States.

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* Originally presented at the annual meeting of the American Academy of Forensic Sciences, February 15, 2002, Atlanta, GA.

Received 11 May 2002; accepted 9 June 2002; published 2 Oct. 2002.

Items around the neck are inherently dangerous, especially if they become entangled in moving objects such as machinery or caught on a fixed object while the person is moving. The Consumer Products Safety Commission issued advisories in 1994 and 2001 to cut all drawstrings from hooded sweatshirts involved in twelve deaths and not place strings and cords attached to toys around babies' and childrens' necks, preventing such accidental hangings and strangulations (2,3). Instead of banning lanyard usage, methods are available to prevent accidental lanyard hangings. A simple do-it-yourself method involves cutting the ends of the lanyard chain in the back and affixing commercially available adhesive Velcro-type materials and re-fastening the ends. This prevents the lanyard from supporting body weight or allowing enough force to the neck to cause injury, but still holds the keys or badge securely. Another method is that the manufacturer use a center "break-away" fastener where the two lanyard cloth ends meet at the clip that releases before serious force is generated.

Conclusion

The use of lanyard key chains has markedly increased, and, as with any item around the neck, there is a danger in its use. Fortunately, means are available to prevent this type of injury from reoccurring while still preserving the lanyard's useful function.

Acknowledgment

The author wishes to thank Mr. Bob Okaski at the U.S. Consumer Product Safety Commission, and Ms. Kathy Anne Donahue for her help in preparing this report.

References

1. Reay DT, Cohen W, Ames S. Injuries produced by judicial hanging. A case report. Am J Forensic Med Pathol 1994 Sept;15(3):183–6.
2. U.S. Consumer Product Safety Commission bulletin, July 12, 1994.
3. U.S. Consumer Product Safety Commission Publications 5100 and 5095, January 2001.

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