



Atypical Stab Injury with a Rubber Tapping Knife ('Kiri-Pihiya')

Case Report

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Some stab injuries are atypical. However, the careful examination of the injuries provides valuable information which may lead to the identification of the profile of the weapon. The following discussion is based on a fatal atypical stab injury with an unusual knife. An adult male from a rubber cultivation area had an argument with another from the same locality. He was stabbed once on his shoulder and the suspect escaped with the knife. He was rushed to the hospital but was dead on admission. At the autopsy, the shirt worn by the deceased had a patterned cut injury, an inverted 'Flat bottomed U-shaped' cut, 2.5 cm x 0.5cm. Underlying gaping stab injury on the right shoulder was 2cm x 1.5cm. The front margin was 2cm and was sharp and taut. Inner and outer ends were 0.5cm each and were perpendicular to the front margin. The rear margin was sharp but lax. On dissection, the track had parallel margins up to the distal end and the width was 2.5cm. It ran forwards and downwards severing the right subclavian artery. The cause of death was haemorrhagic shock due to stab injury. A rubber tapping knife was produced after 3 days. The blade was 9cm x 2.5cm, thin, with a 'flat-bottomed U-shaped' cross-section. The edges were parallel with 0.5cm thickness. The distal end was V-shaped. Features of the atypical stab injury were compatible with the rubber tapping knife allegedly used for stabbing. Photographic documentation and familiarity with the injuries caused by atypical weapons that are available in the locality will be helpful in injury interpretation.

Keywords: Atypical stab, Rubber tapping knife, Familiarity

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Funding: None,


Competing interests: None

Received: 17 April 2018

Accepted revised version: 01 May 2018

Published: 30 June 2018

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Cite this article as: Gunathilake KMTB, Dissanayake HDMSK, Vidanapathirana M. Atypical stab injury with a Rubber tapping knife ('Kiri-Pihiya'). Medico-Legal Journal of Sri Lanka, 2018;6(1): 39-42.

DOI: <http://dx.doi.org/10.4038/mlj.v6i1.7372>

Introduction

Stab is an injury caused by a pointed weapon where the depth is greater than its surface length.^[1] Investigations of cases with stab injuries are a routine in forensic practice. Stab injuries could be caused by a wide range of pointed weapons.

Some stab injuries are atypical. The careful examination gives valuable information and may be able to reconstruct the weapon. If the data of the real weapon is available, those can be compared with the profile of the weapon assumed to have been used in the crime. However, most of the time, the weapon is absent at the scene. The following discussion is based on a fatal atypical stab injury with an unusual knife.

Case report

A 39-year-old male, from a rubber cultivation area, had an argument with another person over a land dispute. He was stabbed once on his shoulder and the suspect escaped with the knife. The victim was rushed to the hospital but was dead on admission.

At the autopsy, the shirt had an inverted ‘Flat bottom U-shaped’ pattern cut, 2.5cm x 0.5cm (Fig. 01). Underlying gaping stab injury was 2cm x 1.5cm, on the right shoulder (Fig. 02). The front margin was 2cm and was sharp and taut. Inner and outer ends were 0.5cm each and were perpendicular to the front margin. The rear margin was sharp but lax (Fig. 03). When the margins were approximated, the stab showed inverted ‘Flat bottom U-shaped’ and the length of the stab was almost 2.5cm.



Figure 02: Single stab on the right shoulder



Figure 03: Stab injury on the shoulder (close-up)



Figure 01: Inverted flat bottom U-shaped cut.

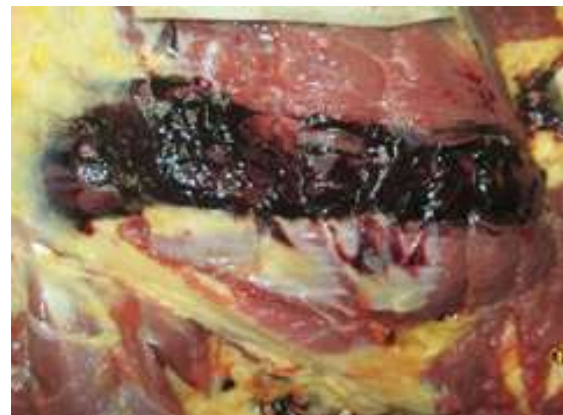


Figure 04: Tract with parallel margins

On dissection, the track of the injury had parallel margins up to the distal end and the width was 2.5cm and the track was uniform in its width (Fig. 04). It ran forwards and downwards severing the right subclavian artery with massive haemorrhage into the surrounding tissues. The cause of death was haemorrhagic shock due to stab injury.

The alleged weapon, a rubber tapping knife (Kiri-Pihiya) was produced to the forensic practitioner by the investigating police officer after 3 days. It is used to peel off the bark of the rubber tree to extract 'latex' and the process is called 'rubber tapping'. The blade was 9cm x 2.5cm, thin and the cross-section was 'flat bottom U-shaped'. The edges were parallel with 0.5cm thickness. The distal end was V-shaped (Fig. 05 and 06).



Figure 05: The blade had parallel edges.



Figure 06: The distal end was V-shaped and the cross-section was 'Flat bottom U-shaped'.

Discussion

Clinical or postmortem investigation of stab injuries is a part of the routine practice of a forensic pathologist. Even a single stab injury is sufficient to cause death as found in this case. Single stab injury has caused death in one third to two-thirds of all homicidal stabbing cases.^[2,3] The forensic practitioners have to give evidence and formulate opinions on such stab injuries

and to reconstruct the causative weapons for legal purposes.

If clothes are available, part of the assessment of stab wounds must include the examination of the clothing.^[4] In this case, as shown in Fig. 01, the blood-soaked shirt provided valuable information regarding the cross-section of the causative weapon. The cut mark found on the shoulder area of the clothing was an 'inverted flat bottom U'. This could be due to the folding of the clothing when the stab was inflicted or cross-section of the weapon could be 'flat bottom U-shaped'. The appearance of the cut in the shirt was compatible with the cross-section of the alleged weapon.

Stab wounds encountered in medico-legal autopsies are usually caused by sharp pointed weapons.^[5] However, in this case, the track of the injury had equal width throughout its length and it was about 2.5cm. It indicated that the offending weapon is not a pointed or tapering weapon but should be a blade with a uniform width. Therefore, the weapon should be a non-tapering atypical weapon. Finally, the uniform width of the injury was compatible with the width of the blade of alleged weapon shown in Fig. 05 and 06.

Atypical stab wounds may also result from the elasticity of the skin, relative movement of the victim or the offending weapon or both.^[6] However, in this case, such possibilities could be excluded due to the presence of a patterned cut on the garment, peculiar entry and the uniform track.

The stab injury found in this case was gaping. Most gaping stab wounds are found if the blade has penetrated the skin perpendicular to Langer's lines.^[7] Though the width of the alleged knife was 2.5cm, the length of the stab was 2cm. Such reduction of the length of a stab wound could be explained by gaping of the wound.^[8] Effects of gaping could be overcome by approximating the margins and in this case, when the edges were approximated, the length of the stab became almost 2.5cm.

Moreover, the front and rear margins of the stab injury were cuts devoid of any abrasions or contusions and were consistent with cuts caused by a knife with a thin blade.^[8] In this case, the alleged weapon had a thin blade.

If the forensic pathologist is familiar with the injury pattern caused by the weapons available in the locality, he will be able to identify the profile of causative weapon and formulate opinions when reporting to the courts. Otherwise, it may be difficult to interpret the

injuries in a case of an unwitnessed stab injury when the causative weapon is absent.

Though there was only single stab injury without defence injuries, the evidence of non-pulling of the clothing aside, the inaccessible direction of the track, the absence of hesitant injuries, and the absence of the weapon at the scene were suggestive of a homicidal stab.^[9]

Such unusual stab injuries should be documented with photographs as in this case and it will be helpful to recollect the findings for future references, for review, as photographic evidence to court as well as for academic purposes.

Conclusions

Features of the atypical stab injury were compatible with the alleged rubber tapping knife. It may be difficult to interpret atypical stab injuries in the absence of such alleged causative weapons. Photographic documentation and the familiarity with the injuries caused by atypical weapons that are available in the locality will be helpful in the injury interpretation.

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