

FORENSIC INTERPRETATION OF KNOTS AND TIES USED TO RESTRAIN HANDS AND LEGS OF THE VICTIM

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ABSTRACT: There was conducted a forensic expertise of the ties found around the hands and legs of Ion Ionescu Dorina. The question was whether they could have been produced by the victim himself. We have examined the following evidences: a brown headkerchief with several ties and a sweater with the sleeves tied together. It appeared that it was impossible to establish for certain, if the examined ties was produced by the wictim or by an assailant.

KEY WORDS: Ties; Knots; Homicide; Suicide.

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THE PURPOSE OF THE EXPERTISE

The forensic expertise of the Ion Ionescu Dorina case has the task of investigating if the ties found around the hands and legs could have been produced by the victim.

EVIDENCE THAT WAS SUBMITTED

- One brown handkerchief with several ties;
- one white sweater with vertical stripes (red, blue and grey) with the sleeves tied together.

EXAMINATIONS AND RESULTS

The brown headkerchief had a series of knots and ties, and during microscopic examination several particles of mica (mineral residues) were revealed (Figure 1).

The white sweater with stripes had at the interior extremities of the sleeves, buttons on the median external side and the two sleeves were tied

Fig. 1. The brown headkerchief.

together covering 2/3 of the length. During macroscopic examination on the left sleeve, on the left chest area and on the back several superficial brown soil spots were discovered, but in very small quantity which made impossible any further analysis.

EXAMINATION OF THE KNOTS AND TIES

The headkerchief used to restrain the hands of the victim

During tool mark examination of the headkerchief from the case two knots were discovered making a loop-like tie. This tie is very complex and is meant to tie together two objects in our case the victim's hands.

The two loops were made by adding in the middle a smaller knot, called half knot. In this way the two loops can be adjustable, changing the diameter, so one can be smaller and the other bigger or *vice versa*.

On one of the loops there is an other half knot similar to the one in the middle, which is not well tied-up.

The ties described are ended with four simple half knots with the purpose of holding the object in place called holding-knots.

The half-knot in the middle was intended to hold in place one hand and then the others were produced to restrain the other hand. The holding-knots are very tied-up, restraining very well and with no possibility to escape the hand by closing in the loops.

The sweater with tied sleeves

The tie takes 2/3 out of the total length of the sleeves because it was used to restrain the victim's legs, and has a typical composed structure made out of two simple knots. The tie was very fasten and invariable, and was used to tie together two objects. The tie has only one loop, 40 centimetres long.

INTERPRETATION OF THE TIES

The headkerchief

The loops around the hands have different sizes and the instability of the middle knot allows to change the diameter from 1 cm to 18 cm. The half knot discovered on one loops had no influence on the tie.

From the photos results that the loops were placed at the joint of the hand with the fist, both palms were facing the exterior, and the final knots are directed towards the upper body. Due to lack of anthropology information we were unable to determine if the tie could slide from the elbow down as the material of the headkerchief is rather expandable.

The locking technique of the tie with four consecutive simple knots, very tied-up, indicates the intention of locking "for good" the tie and to restrain the upper limbs.

The way the palms were oriented induce the fact that the victim was tied-up by somebody else, if you don't take in consideration the flexibility and mobility of the tie. So the possibility of self restraining is not out of the question.

The sweater

From the analysis of the crime scene photos is obvious the tie is placed at the 1/3 of the leg length and initially the sleeves were twisted twice around the legs and then the tie was produced. The flexibility of the material allows the sleeves to be stretched twice around the leg and secured with two simple knots at the extremity of the sleeves.

The position of the knots towards the upper body does not indicate if these were self produced or the result of somebody else's actions.

CONCLUSIONS

We could not establish for certain if the ties and knots used on the headkerchief and on the sweater were produced by the victim, Ion Ionescu Dorina, or they were the result of an action of a second person, possibly an assailant.