

CASE REPORT**CRIMINALISTICS**

Graham Williams,¹ M.Sc. and Imran Haider,² B.Sc.

Differentiating Between Genuine Damage and Falsified Damage to a Garment Following an Alleged Sexual Assault*

ABSTRACT: An allegation of sexual assault was made in which a bra was torn off by the assailant causing extensive damage; however, it was observed that the hook and eye fastening was still intact. It was felt that it was not possible for a garment to receive such damage without damage to the hook and eye fastening, thus indicating that the complainant caused the damage to the bra herself to support a false allegation. Reconstruction experiments were conducted in which the conditions of the allegation were simulated utilizing a range of similar bras. Following the infliction of damage, the hook and eye fastenings were examined. In eight of nine experiments, the hook and eye fastening were intact, despite the application of enough force to cause separation of the bra cups in five of the experiments. This shows that bras may suffer extensive damage without damage to the hook and eye fastening.

KEYWORDS: forensic science, clothing damage, sexual offense, bra damage, false allegation, reconstruction study

In a sexual assault, damage can be caused to clothing, which can provide the clothing damage analyst with information regarding the alleged assault. If the damage is done to an undergarment such as a bra, then this evidence can be more closely linked with the sexual element of the assault (1–3).

Daly et al. (3) reported on a couple of case studies where the damage to the bra was useful in progressing the case. This report also provided an overview of the fundamental structure of the bra. Namely that it consists of a number of components; such as the band, the cups, over the shoulder straps and the bridge between the two cups.

This study looks at further bra damage in an effort to distinguish between damage genuinely caused as a result of sexual assault and falsified damage to support a fake claim of sexual assault.

Case Study

An allegation was made in which the suspect forcibly removed the complainant's bra by grabbing hold of the front of the garment and pulling it off. The alleged offense then continued with the complainant's trousers being removed along with her underwear before being subjected to nonconsensual vaginal intercourse.

Both the suspect and complainant have stated that they had previous consensual unprotected intercourse the night before the alleged incident, thus negating the value of any semen evidence.

¹West Yorkshire Forensic Services, University of Huddersfield, Queensgate, Huddersfield, HD1 3DH, U.K.

²Department of Chemical and Biological Sciences, University of Huddersfield, Queensgate, Huddersfield, HD1 3DH, U.K.

*Funded internally by the University of Huddersfield.

Received 7 Mar. 2011; and in revised form 3 Aug. 2011; accepted 11 Sept. 2011.

The suspect stated that he had consensual intercourse with the complainant at the time of the alleged incident during which the complainant removed her own trousers before the defendant removed her top and bra.

Damage to the Bra

There was no information about the brand of the garment because of the removal of the manufacturer's tag. This garment was also of a generic structure and therefore could be the same brand as developed by a number of manufacturers. The material of the cups and back straps also appeared to be predominantly polyester and elastane (spandex), although it was not possible to determine the proportions other than that the polyester was the major component of the fabric. The hook and eye fastening was metal rather than plastic.

The bra in this case was a size 38B (estimated) underwire bra, which had received extensive damage, resulting in a separation of the two cups as a result of an approximately 6 cm vertical tear down the left cup seam, causing damage to the fabric. There was also extensive damage to the right back strap with a 7.5 cm vertical tear to the fabric near the seam between the right back strap and the right cup. There was also intermittent separation of the trims to the upper and lower aspect of the right and left back strap and to the lower aspect of both cups (Fig. 1).

However, the hook and eye fastening to the back straps were intact. It was felt that it should not be possible for a garment to receive such damage to the front of the bra without causing any damage to the hook and eye fastening. Therefore, a hypothesis was proposed in that the complainant had caused the damage to the bra herself in order to support a false claim of sexual assault.

Consequently, the aim of this study was to determine whether or not it was possible to cause similar damage to the bra using the actions as alleged without causing damage to the hook and eye fastening.

Materials and Methods

Nine bras of varying brands were purchased from a local clothing supplier. These bras were then placed upon a number of volunteers. These bras were predominantly the same size as the original bra (38B) with a couple of variations for completeness.

Each of the volunteers wore the bra while sitting down, lying down, or while standing. Attempts were then made to remove the bra forcefully by grabbing the front of the bra and pulling as alleged. Once the attempts were successful, each of the bras underwent examination and analysis of any damage present.

Results

Out of the nine bras, successful separation of the cups was achieved five times. Damage to the hook and eye fastening was only achieved once. On this occasion, there was no separation of the cups (Table 1).

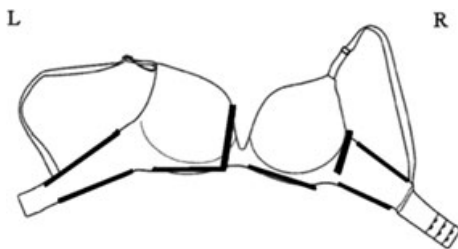


FIG. 1—An illustrative diagram showing the areas of damage to the bras as indicated by the bold lines. This image is not to actual scale and is provided as a visual aid. Images of the actual garment are not available for publication.

This study also investigated the effect of the orientation of the garment wearer upon the damage inflicted upon the garment, by having the volunteers standing, sitting down, or lying down. The damage caused appeared to be independent of the orientation of the garment wearer as separation of the cups, and no damage to the hook and eye fastening occurred in all positions. The same applied to whether the garment wearer struggled or not.

The same brand of bra as the one that received damage to the hook and eye fastening then underwent a similar action to the one used on the garment wearer, but this time without being worn. No separation of the cups could be achieved, but nor was there any damage to the hook and eye fastening. In light of the case scenario, the result from this bra alone does appear to support the counter allegation of a false claim; however, the overall results do not.

In relation to the case, the defense team felt that it was not possible to receive such damage to a bra without receiving damage to the hook and eye fastening. This study clearly contradicts this and highlights the need for clothing damage expert involvement in such cases as well as for the need for reconstruction experiments.

It also demonstrates that the brand and type of fabric used in the manufacture of the bra needs to be identified, so that reliable reconstruction studies can be carried out. This is not always possible as any such identifying information may be removed from the garment by the wearer for reasons of comfort; however, it may be possible for a fibers/textiles specialist to identify the fabric type.

The authors agree with Daly et al. (3) and Taupin et al. (4) that there is a need for more clothing damage case studies to be published.

References

1. Taupin JM. Clothing damage analysis and the phenomenon of the false sexual assault. *J Forensic Sci* 2000;45(3):568–72.
2. Boland CA, McDermott SD, Ryan J. Clothing damage analysis in alleged sexual assaults—the need for a systematic approach. *Forensic Sci Int* 2007;3:110–5.

TABLE 1—The variety of bras used in the reconstruction study.

Brand and Size	Material	Dimensions of Bridge (cm)	Separation of Bridge?	Damage to Hook and Eye Fastening?
C&A Elbrina (38B)	None listed	1.7 × 6.2	Yes	No
Passionate (38B)	97% polyester	1.3 × 2.5	Yes	No
Biattes Intimate (36B)	90% nylon 10% spandex	3.9 × 5.0	Yes	No
C&A Elbrina (34A)	64% nylon 23% polyester 13% elastane	3.0 × 5.0	No	No
Gossard (32DD)	51% cotton 28% polyurethane 17% polyamide 4% elastane	6.2 × 6.0	No	No
Lady Q (34B)	90% polyamide 10% spandex (lining:65% polyester 35% cotton)	5.0 × 8.0	No	Yes
Essentials by ABS (36B)	90% polyester 10% spandex	3.8 × 5.0	Yes	No
Maidenform (36B)*	86% polyamide 14% elastane	4.0 × 5.6	Yes	No
Lady Q (38B)†	90% polyamide 10% spandex (lining:65% polyester 35% cotton)	6.3 × 10.0	No (partial tear)	No

*Strapless bra.

†Damage caused to bra without it being worn.

3. Daly D, Lee-Gorman M, Ryan J. Distinguishing between damage to clothing as a result of normal wear and tear or as a result of deliberate damage: a sexual assault case study. *J Forensic Sci* 2009;54(2):400–3.
4. Taupin JM. Testing conflicting scenarios—a role for simulation experiments in damage analysis of clothing. *J Forensic Sci* 1998; 43(4):891–6.

Additional information and reprint requests:
Graham Williams, M.Sc.
Senior Lecturer in Forensic Science
School of Applied Sciences
University of Huddersfield
Queensgate
Huddersfield HD1 3DH
U.K.
E-mail: graham.williams@hud.ac.uk