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Executive Brief

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Oleoresin Capsicum

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Introduction

Recent increases in violent police encounters coupled with court-imposed limitations on the use of deadly force have resulted in an almost universal demand for a safe and effective less-than-lethal (LTL) force alternative. Increased civil liability and injury-related costs have further necessitated the development of a viable force option. Oleoresin Capsicum (OC) has generated sizable interest and has subsequently become a popular LTL option for many law enforcement agencies. OC is a naturally occurring agent found in cayenne peppers. Purportedly safe, effective, and relatively inexpensive, OC may reduce the potential for excessive force complaints, civil litigation and injury-related expenditures.

Despite extensive field application, few formal evaluative studies of OC have been conducted. Moreover, there exists no forum in which relevant information may be disseminated or policy concerns may be addressed. This paper unifies existing information into a general review that law enforcement administrators may use to guide policy decisions. Further, this paper examines specific concerns often voiced by the law enforcement community regarding OC adoption and utilization. Such issues include product safety and efficacy, agent selection, training protocols, and liability considerations.

Irritant Versus Inflammatory

Traditional chemical agents such as Chloroacetophenone (CN) and Ortho/Chlorobenzal-Malononitrile (CS) have been used by law enforcement officers for many years. These chemical irritants are tearing agents that rapidly induce profuse watering and involuntary closing of the eyes upon application. While still considered effective for tactical use, CS/CN have recently fallen into some disfavor for patrol officer use. Agent side effects include possible burning and/or depigmentation of the exposed skin. Problems associated with decontamination also exist. Due to the microparticulate nature of chemical irritants, they tend to persist in exposed areas. Cross-contamination of officers and the environment (e.g. patrol cars, booking areas, holding cells, etc.) is also common. Chemical agents are not optimally effective on certain persons including those with a high threshold for pain, those who are under the influence of drugs and/or alcohol, and those who are mentally ill or extremely agitated. Acting on the central nervous system, chemical irritants induce pain by activating receptor cells via neural transmitters within the brain. Consequently, any interruption of this process (e.g. by drugs or endorphins) may result in diminished registered pain levels.

Unlike traditional chemical irritants, OC is a naturally occurring inflammatory agent. Also, the mechanism of action differs substantially: OC works by inflammation

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whereas CN and CS work by irritation. An organic oily resin derived from the pepper plant, OC is currently used for pharmacologic (e.g. as a topical analgesic) and food spicing purposes. No special decontamination procedures are required for OC because it is biodegradable and, unlike chemical irritants, it will not persist in clothing or affected areas. Ensuring proper ventilation and access to water and removing any contact lenses are the suggested decontamination procedures.

As an inflammatory agent, OC causes an almost immediate swelling of the eyes and breathing passages. Additionally, there is an intense burning sensation of the eyes, throat, and sprayed areas of the skin. When the agent is inhaled, the respiratory tract is inflamed and breathing is restricted, being limited to short and shallow breaths. Physical effects may include involuntary closing of the eyes, coughing, choking, lack of upper body strength and coordination, and nausea. Psychological effects such as disorientation and fear may also occur. When properly used, OC is purportedly quite effective on both humans and animals. Furthermore, the cumulative physical and psychological effects of OC render the agent serviceable for use on intoxicated or agitated individuals (Nowicki, 25). DuVernay notes that the resultant effects of OC application (i.e. labored and restricted breathing) do not support high levels of physical activity such as fighting with police officers (DuVernay, 15).

Because of its effectiveness on animals, many postal and utility workers carry the agent for animal control. Domestic dogs of various breeds have been successfully controlled, without injury to the animal, by the application of the OC agent (Public Safety Academy, 18). However, Nowicki notes that attack-trained dogs may not be stopped by OC. In addition, sprayed dogs may become more aggressive upon recovery. Standard decontamination procedures, including access to water and proper ventilation, should be employed when OC is used on dogs (Nowicki, 25).

Legal and Medical Issues

Currently, OC is not regulated by the Food and Drug Administration, the Environmental Protection Agency, or the Consumer Product Safety Council. However, OC has been examined by non-regulatory government and private research organizations. A two-year study conducted by the FBI Firearms Training Unit in cooperation with the U.S. Army Chemical Research and Development Center (CRDEC), revealed no long-term health risks associated with the use of OC. The FBI reported that no ill effects or adverse reactions were experienced by 899 subjects who were exposed to OC agents (Weaver and Jett, 6). The CRDEC further reported that neither mutagenic nor carcinogenic effects were found on laboratory animals exposed to OC via gastrointestinal doses, subcutaneous injections, droplets to the eyes, and skin patch tests (Weaver and Jett, 2).

Regarding OC use on persons with pre-existing respiratory conditions, Fuller, Dixon, and Barnes found no significant difference in either the magnitude or duration of bronchoconstriction between normal, smoking, or asthmatic subjects (Fuller, Dixon, and Barnes, 1080-1084). A private research facility, Occupational Health Services, Inc., contracted by the Kansas City, Missouri, Police Department, reports that the use of OC on persons with respiratory problems could, in rare instances, cause death. However, they contend that such an occurrence is statistically improbable, noting that none of the 899 FBI subjects (a percentage of whom probably had, like the general population, pre-existing respiratory ailments) reported any adverse reactions (Bowers, 3).

Presently, there is no known litigation resulting from the use of OC. The FBI Firearms Training Unit reported that they are unaware of any lawsuits filed as a result of OC application (Weaver and Jett, 2). Moreover, various courts have upheld the use of traditional chemical irritants when properly utilized (Baltimore County, Maryland, Police Department, 12). It may thus be logically inferred that any subsequent OC-related litigation will be similarly resolved.

Existing Assessments

Anecdotal reports of agent effectiveness are favorable. Officers from the Sarasota County, Florida, Sheriff's Department (Hoffmeister, April 1992) and the Fairfax County, Virginia, Police Department report immediate benefits upon completion of training (Sines, April 28, 1993). Significant reductions in officer and arrestee injuries have been reported. After 360 documented uses, occurring over a two-and-a-half year period, the New Britain, Connecticut, Police Department reports that OC was effective 95% of the time with no injuries to officers or subjects (Nowicki, 25). Similarly, the Springfield, Missouri, Police Department experienced a 30% decrease in subject injury complaints within one year of OC adoption (Ijmes, April 28, 1993). No official complaints have been lodged against the Kansas City, Missouri, Police Department after 409 documented OC uses (Mitchell, October 1, 1992). The Sarasota County, Florida, Sheriff's Department likewise notes that during the first six months of OC field use, no complaints were filed (Hoffmeister, April 1992). Regarding product effectiveness on inebriated/agitated persons, the Alaska State Troopers report that OC agents received an "effective" rating nine out of ten times when used on intoxicated individuals (Stockard, April 28, 1993).

Product Selection

Once an administrator has decided to adopt OC as a force alternative, several product selection choices must be made. Currently, a variety of vendors market OC products, which differ on several dimensions. Chief J.P. Morgan of the Goldsboro, North Carolina, Police Department notes that the main difference between the various OC products is the delivery or carrier system, which may utilize either flammable or nonflammable carrier agents (Morgan, 22). Flammable delivery systems use isopropyl alcohol, which although not readily combustible, is ignitable. Nonflammable carrier systems, using Freon, Dymel or methylene chloride are also available. However, some of these are either ozone depleting,

toxic, or carcinogenic (Pilant, 50). To address these concerns both water-based carrier systems and environmentally friendly propellants, such as nitrogen and carbon dioxide, are being more commonly used. Other product considerations include price, range, trigger mechanism (mist, fog, or stream), concentration, and strength of the active pepper ingredient (Pilant, 50).

To decide which product is appropriate and serviceable, managers must first determine in what types of incidents and in what manner the spray will be used. For example, Chief Morgan determined that since the primary departmental use of OC would be for routine patrol, rather than crowd dispersement, isopropyl alcohol would be an acceptable carrier. Conversely, a nonflammable carrier was selected for rare, tactical/SWAT-type incidents where saturation might be necessary (Morgan, 22). Determination of product appropriateness should occur after a careful pre-use evaluation including other municipal officials (e.g. fire and rescue personnel), attorneys and departmental insurance carriers.

Operational Considerations

There is a consensus among law enforcement officers regarding the position of OC on the use-of-force continuum. Because there are no verified long-term physical effects or health risks associated with OC use, it is usually ranked just above hands-on pain compliance and immediately below the use of impact weapons.

Standard operating procedures generally mandate that OC is appropriate for use with actively hostile individuals who have resisted verbal commands, when physical control techniques are warranted, or when officer injury is possible and/or anticipated. However, current departmental policies concerning the application and escalation of force should not be altered with the adoption of OC. Officers must be provided with the discretion to quickly and safely apply the appropriate level of force to meet situations involving arrest or officer self-defense. Policy guidelines regarding OC use must be developed and clearly defined. At a minimum, guidelines should consider issues related to the following: appropriateness of agent use, necessity of warnings prior to application, decontamination procedures, incident documentation, and possible sanctions for indiscriminate use.

Thorough training in the use of OC is critical because it enhances product effectiveness, protects the officer and the agency during litigation, and ensures both officer and suspect safety. DuVernay holds that proper training should be comprehensive, going beyond the technical aspects of the munition (such as the symptomatic effects, first-aid and decontamination protocols). Legal and tactical issues must also be examined. Tactical issues include application techniques, verbal commands, and proper physical positioning. Product manufacturers and private companies offer user and instructor training (DuVernay, 15).

Caveats should also be considered as part of the formal training. Trainers (e.g., Nowicki, 27) report that because of OC's high level of effectiveness and low potential for long-lasting physical injury, a tactical over-reliance on the product may occur. Some chiefs have been tempted to forego other less-than-lethal alternatives in lieu of the "cop in a can" (Pilant, 51). A false sense of psychological security may also be engendered by the product. Morgan reports that a patrol officer, in response to an offer for backup, confidently commented that "I don't need one, I got my OC" (Morgan, 26). Trainers and vendors emphasize that no device, including OC, is universally effective. Consequently, OC should supplement rather than replace other tactics and control techniques.

Conclusion

Reports indicate that use of OC may result in reduced use-of-force complaints, civil litigation, and injury to officers and subjects. Furthermore, field tests suggest that the agent is reasonably effective on dogs and intoxicated/agitated persons. Because of the agent's natural product origin, various operational, legal, and medical issues are mitigated: agent application and decontamination protocols are basic; courts are expected to uphold OC use; and the potential for permanent or long-lasting physical injury is improbable. While not a panacea, OC is currently considered an effective and reliable less-than-lethal force alternative.

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