Is Use Of Rubber Bullets Justified?

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Citation

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Abstract

Background: The study has been conducted with the aim to assess the severity of trauma in patients injured with rubber bullets.Methods
: This prospective study included 64 consecutive patients of rubber bullet injury who reported to the surgical department of this hospital over a period of three years. After detailed history and clinical examination, hemodynamically stable patients were subjected to investigations and unstable ones were operated. Data collected was tabulated and subjected to appropriate statistical analysis.Results: Urban male teenagers were the most common individuals injured by rubber bullets during the riots or protests in the Indian Administered Kashmir valley. The limbs were the most common and less severely injured sites (38 patients; 59.375%), while the head and neck region was least commonly and most severely injured (4 cases; 6.25%). The mortality observed was 1.563%, which was due to carotid artery injury. The colon and the small gut were the most common hollow viscera injured with 8 cases (12.5%) each and the kidneys and the liver were the most commonly injured solid viscera with 6 cases (9.375%) each.Conclusion: The use of rubber bullets is unjustified for controlling mobs or protestors and law enforcement authorities should use other less lethal means.

INTRODUCTION

Currently, mob control is enforced by trained police or military and paramilitary forces by using less lethal weapons, and the rubber bullet is one of these. Rubber bullets are rubber or rubber-coated projectiles that can be fired from either standard firearms or dedicated riot guns. They are intended to be a non-lethal alternative to metal projectiles. Like other similar projectiles made from plastic, wax, and wood, rubber bullets may be used for short range practice and animal control, but are most commonly associated with use in riot control and to disperse protestors[1-4]. Rubber projectiles have largely been replaced by other materials as rubber tends to bounce uncontrollably. Such kinetic impact munitions are meant to cause pain but not serious injury. They are expected to produce contusions, abrasions, and hematomas. However, they may also cause bone fractures, injuries to internal organs, or death. Lethal injuries are often the result of head injuries caused by misuse. When a projectile strikes a person, its kinetic energy at impact is defined by its mass and its velocity ($1/2 \times \text{mass} \times \text{velocity}^2$). Ballistic studies suggest that a projectile needs to apply a threshold energy density of greater than 0.1 J/mm^2 to skin in order to penetrate and cause internal injuries[1-4]. Manufacturers of rubber bullets modify the mass (composition), ballistic properties (velocity) and size (cross-sectional area) in order to reduce the likelihood of skin penetration. Furthermore, law-enforcement officers often have specific rules of engagement for using these types of munitions that further reduce the likelihood of penetration and serious injury; such rules include firing at distances over 40 meters and changing the point of aim to body regions where skin has increased elastic properties (lower limbs) to allow the energy to dissipate over a larger cross-sectional area[5].

PATIENTS AND METHODS

This prospective study was conducted in the Department of General Surgery, Government Medical College, Srinagar. The study included 64 consecutive patients of rubber bullet injury who reported to the surgical department of this hospital over a period of three years from 1 st June 2008 to 31 st May 2011. After detailed history and clinical examination, hemodynamically stable patients were subjected to investigations and unstable ones were operated. Operative findings were noted. Data collected was tabulated and subjected to appropriate statistical analysis.

Figure 1

Table I: Demographic profile of rubber bullet injury

Age group (years)	Number of cases	Males	Females	Urban	Rural
11 -20	34 (53.125%)	32	2	24	10
21-30	18 (28.125%)	14	4	12	6
31-40	6 (9.375%)	6	0	5	1
41-50	6 (9.375%)	6	0	5	1
Total	64	58 (90.625%)	6 (9.375%)	46 (71.875%)	18 (28.125%)

Figure 2

Table II: Pattern of rubber bullet injury

Region	Penetrating	Blunt	Total
Head and neck	4	0	4 (6.25%)
Chest	0	4	4 (6.25%)
Abdomen	14	4	18 (28.125%)
Limbs	0	38	38 (59.375%)
Total	18 (28.125%)	46 (71.875%)	64

Figure 3

Table III: Organ injury due to rubber bullet (more than one organ injury was present in one case.)

Organ injured	Number of cases	Operative procedure	Outcome
Eye	3 (4.688%)	Enucleation	Survived
Carotid artery	1 (1.563%)	-	Expired
Lungs	4 (6.25%)	Thoracostomy	Survived
Kidney	6 (9.375%)	Nephrectomy	Survived
Liver	6 (9.375%)	Hepatorraphy	Survived
Spleen	4 (6.25%)	Splenectomy	Survived
Colon	8 (12.5%)	Colostomy	Survived
Small gut	8 (12.5%)	Primary Repair	Survived

Figure 4

Figure A: Penetrating injury of the neck (left carotid artery) by rubber bullet

Figure 5

Figure B: Rubber bullet (diameter: 1.5cm; length: 3cm) retrieved from the wound

Figure 6

Figure C: Rubber bullet in the peritoneal cavity injuring transverse colon and liver

RESULTS

In our study, teenagers were most commonly injured (34; 53.125%), males (58; 90.625%) were more frequently injured than females (6; 9.375%). Males predominated in each age group. Most of the cases were from urban areas (46; 71.875%). Urban people were mostly injured in each age group (Table I). Rubber bullets caused blunt injury in 46 (71.875%) and penetrating injury in 18 (28.125%) of cases. The limbs were the most common and less severely injured sites (38; 59.375%), while the head and neck region was least commonly and most severely injured (4; 6.25%) (Table II and III). The mortality observed was 1.563%, which was due to carotid artery injury by rubber bullet (Table III and Figures A and B). The colon (Figure C) and small gut were the most common hollow viscera injured with 8 cases (12.5%) each and the kidneys and the liver (Figure C) were most commonly injured solid viscera with 6 cases (9.375%) each (Table III).

DISCUSSION

In Indian Administered Kashmir valley mass protests happened against the Indian Occupation in the years 2008, 2009 and 2010. The state police and paramilitary forces fired tear gas shells and rubber bullets to disperse the protestors and we received many injuries at the emergency department of our hospital. We received 64 rubber bullet injuries during these three years of riots. In our study we observed that urban male teenagers were often injured by rubber bullets, limbs were mostly injured, serious injuries occurred in head and neck, chest and abdomen. The mortality observed was because of great vessel injury like carotid artery. Direct-fire rubber bullets were used for the first time by the British Forces in Northern Ireland in 1970[6]. These bullets were also relatively inaccurate; many injuries and even some deaths were associated with their use[3,6,7]. Children, teenagers, and women who are of a smaller built were reported to sustain severe injuries more often than larger individuals, particularly to the skull, eyes, brain, lungs liver, and spleen[3,7-9]. The seriousness of rubber bullet injury observed in our study was probably due to closed range firing of rubber bullets and their greater rebound from roads which then caused injury of the upper part of the torso. Almost similar observations were noted by Rocke[3], Mahajna et al.[5] and Millar et al.[6] in their studies.

CONCLUSION

We concluded in our study that rubber bullets cause serious injuries which even endanger the life and hence their use is unjustified for controlling mobs or protestors.

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