



# Deadly Stampede at Yaounde's Olembe Stadium: Forensic Implications

Ngongang GFO<sup>1\*</sup>, Ndoye EO<sup>2</sup>, Diallo AM<sup>3</sup>, Conde M<sup>3</sup>, Mogue T<sup>4</sup>, Zoa Otou<sup>4</sup>, Bigot C<sup>5</sup> and Nseme E<sup>1</sup>

<sup>1</sup>Department of Morphological Sciences and Pathological Anatomy-Faculty of Medicine and Biomedical Sciences – University of Yaounde I

<sup>2</sup>Faculty of Medicine, Pharmacy and Odontostomatology. Cheikh Anta Diop University (Dakar - Senegal)

<sup>3</sup>Forensic Unit - Ignace Deen Hospital - Conakry Guinée

<sup>4</sup>Yaounde Central Hospitals

<sup>5</sup>Legal Medicine Unit, Faculty of Health Sciences -UAC (Cotonou – Benin)

**\*Corresponding author:** Ngongang Gilbert Frank Olivier, Department of Morphological Sciences and Pathological Anatomy, Faculty of Medicine and Biomedical Sciences UYI, Cameroun, Africa Email: gilbert.ngongang@fmsb-uy1.cm

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## Abstract

**Background:** Sports events in general allow a massive influx of spectators. The 33rd edition of the African Cup of Nations football which took place in Cameroon from 09 January to 06 February 2022 was marked by a tragic event on 24 January 2022.

**Objective:** To describe the thanatological aspects of the victims of the fatal stampede at the Olembe stadium in Yaounde.

**Method:** At the request of the National Gendarmerie, a panel of 4 forensic doctors was appointed to conduct medico-legal autopsies in order to determine the causes of death and establish the medico-legal form.

8 victims (5 men and 3 women) were identified. The lesions were mostly located in the cephalic and thoracoabdominal stages. The autopsy found extradural hematomas associated or not with fractures of the arch or base of the skull; signs of mechanical asphyxiation, chest bruises with or without uni or pluricostal fractures. Accidental violent death was the preferred forensic form.

**Conclusion:** Deaths related to stampede are relatively common. The victims have a varied lesional typology. The medico-legal autopsy is essential to establish the medico-legal form of death.

**Keywords:** Stampede; Death; Forensic Autopsy; Cameroon

**Abbreviations:** YCH: Yaounde Central Hospital

## Introduction

Human stampedes are relatively common around the world. According to Yu- Hsiang, 215 human stampedes occurred between 1980 and 2007, resulting in, 069 deaths and 14,070 injuries [1]. They are very often related to large crowd gatherings. They are thus a cause of collective violent deaths. Sporting events in general allow for a massive influx of spectators. The 33rd edition of the Africa Cup of Nations

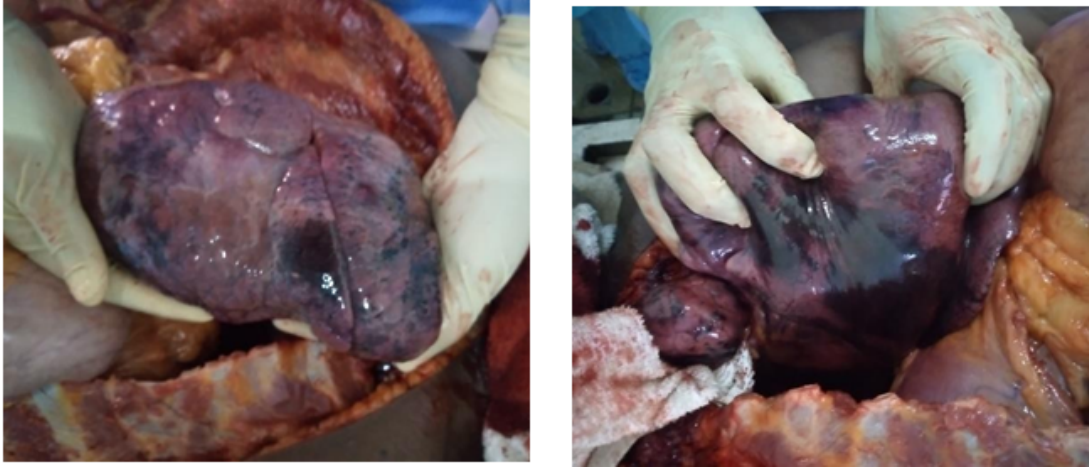
held in Cameroon from January 09 to February 06, 2022 was marked by a tragic event on January 24, 2022. The objective of the present work was to describe the thanatological aspects of the victims of the fatal deadly stampede at the Olembe Stadium in Yaounde.

## Materials and Method

This was a descriptive and qualitative study conducted from January 2022 to February 2022 at the Yaounde Central Hospital (YCH) morgue. Included were: deceased victims

received at the HCY morgue. 8 victims were recorded. At the request of the National Gendarmerie, a panel of 4 forensic doctors was appointed to carry out medico-legal autopsies.

Their mission was to determine the causes of death and the medico-legal form of death. The variables studied were age, sex, type of injury, medicolegal form of death.



**Figures 1 & 2:** Subpleural haemorrhagic infiltrates.



**Figure 3:** Rib fractures, Thoracic vertebrae fractures T5 – T10.



**Figure 4:** Cyanosis of the extremities.



**Figure 5:** Extradural hematoma.

## Results

We performed forensic autopsies on 8 victims whose ages ranged from 6 to 65 years. Male predominance was effective (5 men/3 women). This population was made up of state

employees and students. The lesions were located at the cephalic and thoraco-abdominal levels. Death was due in the majority of cases to traumatic asphyxia by chest compression. Table I shows the distribution of post-mortem data.

Cases	Age	Sex	Injuries	Cause of death
Case 1	29	M	Extradural hematoma, Chest contusion with rib fractures, Thoracic vertebrae fractures	Polytrauma (Asphyxia and Extradural Hematoma)
Case 2	6	M	Cerebral edema, subpleural petechiae, cyanosis of the extremities, Chest contusion	Asphyxia
Case 3	22	F	Extradural hematoma, Chest contusion with rib fractures, Thoracic vertebrae fractures	Polytrauma (Asphyxia and Extradural Hematoma)
Case 4	41	F	Cyanosis of the extremities, pulmonary contusion with rib fracture, subconjunctival hemorrhages	Asphyxia
Case 5	31	M	Subpleural haemorrhagic infiltrates, rib fractures, haemothorax of medium abundance	Asphyxia
Case 6	65	M	Chest contusion with rib fractures, haemothorax of medium abundance	Asphyxia
Case 7	32	F	Subconjunctival haemorrhages, pulmonary contusion with rib fractures, cyanosis of the extremities	Asphyxia
Case 8	14	M	Extradural hematoma, subpleural haemorrhagic infiltrates, rib fractures, haemothorax of medium abundance	Polytrauma (Asphyxia and Extradural Hematoma)

**Table 1:** Post Mortem Data.

## Discussion

Human stampedes are a relatively unique type of disaster that, due to their scale, cannot leave the media indifferent. Few scientific studies have been conducted on the issue; However, a systematic review published in 2009 [2] reviews the events described. Since 1970, only 8 human stampedes have been detailed in the literature reviewed by some authors, the majority of which took place in the United Kingdom or the United States (5 out of 8) More than half of the reported stampedes (5 out of 8) occurred at sporting events, including soccer matches. Other mass gatherings, such as concerts and religious or political events, have been associated with the other stampedes [2]. Among the circumstances and mechanisms of occurrence, the unidirectional movement of a crowd at the entrance of a narrow gate could explain this observation [3]. This hypothesis has been evoked for the stampede in Olembe; Spectators rushed to the stadium as a gate was recklessly opened.

Pathophysiologically, the vast majority of deceased victims present with traumatic asphyxia caused by external compression of the thorax and/or upper abdomen, resulting in complete or partial cessation of breathing. [4-10]. Forces of up to several thousand kilograms have been described. High intrathoracic pressure prevents venous return resulting in high venous pressures that cause petechiae hemorrhages [11]. In our series, the lesions were located at the thoracic and cephalic levels. This observation is similar to that of Madzimbamuto F, et al. [12] in Zimbabwe, who preferentially found the thoracic seat. With the association of other lesions, we recorded 3 polytrauma patients. We owe

to Ollivier one of the first descriptions of the condition he called "ecchymotic mask" in the autopsy of the victims of riot stampedes in Paris in 1837 [13]. Some authors [2] propose the following logarithmic stampede scale to encompass the entire observed casualty range: class I (mild): injuries, 0 deaths; class II (moderate): 1 to 10 deaths; class III (severe): 11 to 100 deaths; class IV (devastating): 101 to 1000 deaths; class V (catastrophic): up than1000 deaths. This scale could be used during operational response to readily convey the estimated magnitude of an event and mobilize necessary resources. The stampede at the Olembe stadium was Class II.

## Conclusion

Stampede-related deaths are relatively common. Victims present with a lesional typology where traumatic asphyxia by chest compression predominates. The forensic autopsy is essential to establish the forensic form of death that is violent.

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