

# CERVICAL TRAUMATISMS – MEDICAL AND FORENSIC ISSUES.

## RETROSPECTIVE STUDY BETWEEN 2008 AND 2017

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**Abstract:** Cervical trauma and deaths associated to them are an important issue affecting all sectors of society. Materials and methods: We conducted a retrospective longitudinal study over a period of 10 years, on a total of 13 cases, from the casuistry of the Sibiu County Forensic Service. We followed the epidemiological distribution by age groups, sex, background, distribution of cases according to production circumstances, production mechanism and death-generating syndromes of cervical trauma. Results: The study revealed that more than 2% of all deaths following mechanical traumatic injuries were due to cervical trauma. Three quarters of these deaths occur in men and people in rural areas. Also, over two-thirds of these traumas occurred as a result of aggressions by striking with a blunt object.

### INTRODUCTION

Traumatic cervical lesions can have serious consequences (1,2,3) due to the important anatomical formations that are located at this level.(4,5,6)

Cervical contusion traumas can cause death by inhibition mechanism, and obviously the most severe lesions are cervical wounds.(7,8)

The treatment of such a patient should primarily address the cessation of hemorrhage (6,9), requiring specialized investigations to diagnose the injured vessel / vessels.(10,11)

### PURPOSE

The paper aims at performing a retrospective epidemiological study on the deaths caused as a result of cervical trauma in Sibiu County for a period of 10 years in the period 2008-2017, in order to quantify the phenomenon, the production circumstances, and at identifying the population groups at risk and not last but not least, at developing a prevention strategy.

### MATERIALS AND METHODS

The material taken into study is represented by the infobiographic and medical data available in the archives of the Sibiu County Forensic Medicine Service, as well as the Sibiu County Emergency Clinical Hospital.

The method used is the retrospective longitudinal survey, with full study of the study material.

### RESULTS AND DISCUSSIONS

During the period 2008-2017, in the casuistry of the Sibiu County Forensic Service, there were 13 deaths secondary to cervical trauma

Of the total deaths from cervical trauma, 84.61% were males and only 15.38% were females (table no. 1).

Regarding the distribution of cases according to the origin environment of the deceased person following a cervical trauma, 46.15% came from the urban area and 53.84% from the rural area (table no. 2, figure no. 1).

**Table no. 1 Distribution of deaths due to cervical traumas according to gender**

Gender	No.	%
Men	11	84,61
Women	2	15,38
<b>Total</b>	<b>13</b>	<b>100</b>

**Table no. 2 Distribution of deaths due to cervical traumas according to the origin environment of the deceased person**

Origin environment	No.	%
Urban	6	46,15
Rural	7	53,84
<b>Total</b>	<b>13</b>	<b>100</b>

The highest share of deaths from cervical trauma was recorded in the sixth decade of age (38.46%). Equal weights were found in the 20-29 age range, 30-39 years, 40-49 years, and 70-79 years (1 case), respectively. Two deaths were recorded in the 1<sup>st</sup> and 7<sup>th</sup> decade (15.38%) (table no. 3).

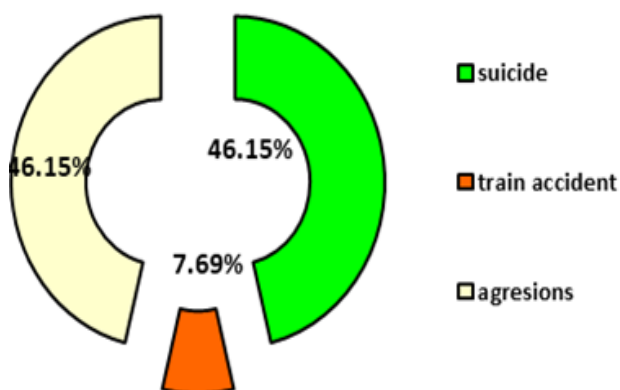
Out of the total deaths resulting from cervical trauma, 46.15% of cases were self-inflicted (suicide). 7.69% of them were secondary to a railway accident and the remaining 46.15% were secondary to aggression (figure no. 2).

**Table no. 3. Distribution of deaths due to cervical traumas according to victim's age**

Age (years)	No.	%
0-9	2	15,38
10-19	0	0
20-29	1	7,69
30-39	1	7,69
40-49	1	7,69
50-59	5	38,46
60-69	2	15,38
70-79	1	7,69
Over 80	0	0
<b>Total</b>	<b>13</b>	<b>100</b>

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**Figure no. 1 Distribution of deaths due to cervical traumas regarding the producing circumstances.**



Following the distribution of deaths due to cervical trauma according to the production mechanism, most of them were produced by the hitting from a blunt object (10 cases). One death occurred by hitting from a blunt object, from a punch-cutter object, respectively by hitting (in a railway accident).

**Table no. 4. Distribution of deaths secondary to cervical traumas according to the production mechanism**

Production mechanism	Nr.	%
Hitting from a blunt object	10	76,92
Hitting from a cutting-punching object	1	7,69
Hitting from a cutting-splintering object	1	7,69
Hitting (railway accident)	1	7,69
<b>Total</b>	<b>13</b>	<b>100</b>

Regarding the cervical trauma, the death-generating syndromes encountered were: external haemorrhage (61.53%), external and internal haemorrhage (15.38%), pulmonary aspiration (15.38%) and haemorrhagic shock (7.69%) (table no. 5, figure no. 3).

**Table no. 5. Repartition of deaths according to death-generating syndrome of cervical traumas**

Death-generating syndrome	No.	%
External haemorrhage	8	61,53
External and internal haemorrhage	2	15,38
Hemorrhagic shock	1	7,69
Pulmonary blood aspiration	2	15,38
<b>Total</b>	<b>13</b>	<b>100</b>

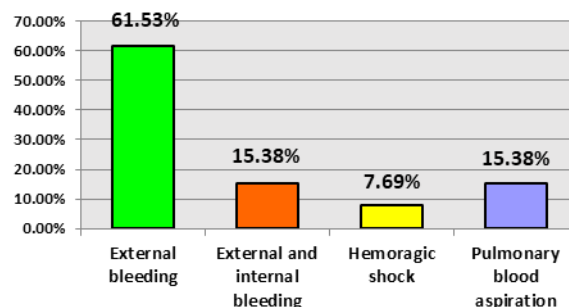
External haemorrhage (secondary to cervical trauma) occurred in 75% of the cases (6 deaths) by hitting from a blunt object in 12.50% of the cases (1 death), respectively by being hit by a rail vehicle in a railway accident (1 death, 12.50%) (table no. 6).

Regarding the external and internal haemorrhage (consecutive to cervical trauma), there were two cases of aggression, having as a mechanism of production, the hit from a cutting object.

Hemorrhagic shock (secondary to cervical trauma)

was found in a suicide, the traumatic lesion being produced by hitting from a blunt object.

**Figure no. 2. Repartition of deaths according to death-generating syndrome of cervical traumas**



**Table no. 6. Repartition of deaths due to external bleeding regarding the production mechanism**

Production mechanism	Nr.	%
Hitting from a blunt object	6	75
Hitting from a cutting-splintering object	1	12,50
Hitting (railway accident)	1	12,50
<b>Total</b>	<b>8</b>	<b>100</b>

The circumstances of deaths by pulmonary aspiration (consecutive to cervical trauma) were represented by one case of suicide and aggression (50%). These traumas were caused by striking with a cutting object, or by a cutting-punching object.

## CONCLUSIONS

Three quarters of consecutive deaths from cervical traumatic injuries occurred in males.

There was an approximately equal distribution of residence areas, with the predominance of the rural environment.

The highest death rate was recorded in the 6th decade of age.

Almost half of all cervical lesions were found in aggressions, by hitting from blunt objects.

The most common death-generating syndrome was the external haemorrhage.

Deaths following the haemorrhagic shock, secondary to cervical lesions, were found in self-injuries (suicide) by hitting from a cutting object.

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