



Case Report

Greek land borders and migration fatalities – Humanitarian disaster described from the standpoint of Evros

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ABSTRACT

The area of the regional unit of Evros in northern Greece is considered the main gateway to the East and marks the end of the European territory and the beginning of the Asian continent. The natural boundary of the Evros River has been the last major obstacle to overcome before entering the Schengen area for hundreds of thousands of migrants on the eastern Mediterranean route. The river stands, however, for the main place of death for thousands of people who try to enter the country, and therefore the European Union, illegally.

The international social, political and economic conditions that prevail at times often determine the flows of migration on the eastern Mediterranean route and eastern land border of Greece into the European Union.

On the Greek side of the Greek-Turkish border, for the last nineteen years, 398 cadavers of deceased migrants have been recovered. The majority of the illegal immigrants, or asylum seekers, who pass away in the Evros region are found after several days, weeks or even months. The diagnoses of the causes of death and the determination of the time of death are questions the coroner seeks to answer. Consequently, as the majority of the deceased are in an advanced state of putrefaction, the identification and attribution of the corpses to their relatives become matters of crucial importance and a high degree of difficulty. Until today, drowning in the Evros River remains the leading cause of death among border-related death incidents.

The present article aims to depict the humanitarian disaster as it unfolds in the regional unit of Evros in northern Greece and the easternmost land border of the European Union along the Mediterranean route as well as the contribution of forensic science to the possible extent.

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1. Introduction

The Evros region in Northern Greece is a prefecture that encompasses the land borders between Greece and Turkey. The Evros River accounts for the natural boundary between Greece, Turkey and Bulgaria. Extending to a total length of 530 km, among which 204 km belong to Greece, the Evros River is the second largest river in the Balkans, after the Danube. It springs from the Rila Mountain, near Sofia in Bulgaria, running south-east, and flowing into the Thracian Sea on the east of Alexandroupolis, thus forming a large river delta within a total area of 150,000 acres.

As aforementioned, the Evros River designates the borders between Greece and Turkey along its full length (approximately 196 km), and therefore, half of the river in width belongs to Greece, while the other half belongs to Turkey. This is the case except for a

12.5 km-long part where the border is purely terrestrial and the river flows through Turkey. Along that area of 12.5 km, the land zones between the two countries have been separated with a border fence since 2012 to prevent unauthorized entry [1–10].

2. Case report

2.1. Background

The Greek land borders of Evros have been a common entry spot for undocumented migrants on their way to Europe through Turkey. Adverse conditions, however, have resulted in many human casualties that have been recorded over the years. Cadavers retrieved from the Greek half of the river as well as all border-related deaths of Eastern Macedonia and Thrace are transported to the Laboratory of Forensic Sciences of Democritus University of Thrace in Alexandroupolis for post-mortem forensic examination and autopsy, while cadavers detected on the Turkish side of the river/border are allocated to the Turkish authorities [1–5].

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2.2. Case 1

The body of a deceased male aged approximately between the second and third decade and of 165 cm height was detected in a state of advanced putrefaction immersed in the Evros River. The facial features were unrecognizable; there was neither hair due to the long duration of time in the water nor the structures of the eyes due to tissue consumption by the aquatic fauna in the river. Furthermore, in the investigation of the remaining clothing, no evidence to indicate the identity of the deceased was found. A fairly distinctive metal chain necklace had remained intact due to its material composition and hung around the decedent's neck. Drowning was considered as the most possible cause of death, while the time of death based on septic phenomena and prevalent environmental conditions was estimated to have taken place approximately 40 days previously. A biological sample for DNA testing was collected and dispatched to the forensic laboratories of the Hellenic Police Headquarters. In parallel, at about the same period, a search was in progress on behalf of the Pakistani Embassy for a male about 160–170 cm tall, who reportedly attempted unauthorized entry through the Greek land borders approximately 40 days previously and had not contacted his relatives since then. Due to the impossibility of facial recognition because of the existent alterations by decomposition, a full description of the post-mortem somatometric features was sent to the Pakistani Embassy, as well as the date and place of the decedent's detection, possible date of death, and photographic material depicting the chain necklace. The aforementioned images were sent to the relatives of the missing person, who recognized the depicted object as their child's personal object. Subsequently, a biological material (DNA) sample was collected by the mother and the results were sent via the embassy to the Hellenic forensic laboratories. A familial match was ascertained between the received results of the mother and the specimens of the unidentified body. Subsequently and with mediation of the embassy, the deceased was handed over to an undertaker's and was transferred to Pakistan (Fig. 1).

2.3. Case 2

The body of a deceased male aged approximately between 25 and 35 years of age and of 161 cm height, with black eyes and hair, was detected in an area 500 meters away from the bank of the Evros River. The cause of death was hypothermia and the time of death was estimated at approximately 24 h previously. During post-mortem examination, Turkish documents were found on the decedent, which depicted his face and recorded his details as a Pakistani citizen, a Lebanese identity card depicting him as a Lebanese citizen and a handwritten note with telephone numbers. During external examination of the body, it was observed that the deceased had an anatomical dysplasia in regard to the left ear tragus (Fig. 2). Autopsy confirmed hypothermia as the cause of death, while biological samples were obtained and dispatched for DNA testing. With the mediation of the police, data of the decedent were dispatched to the embassies of Pakistan and Lebanon, where it was discovered that the deceased was a Pakistani citizen, and that documents from Lebanon were forged. At the same time, the embassy managed to contact the relatives of the deceased through the telephone numbers that he was carrying on him in the handwritten note. The relatives were asked about the anatomical peculiarity, which they confirmed. DNA sampling from the mother of the missing followed as well as dispatch through the embassy and match, which resulted in the identification of the deceased by the Hellenic authorities. With the mediation of the embassy, the deceased was handed over to an undertaker's and was transferred to Pakistan.

2.4. Case 3

The body of a deceased male teenager aged approximately 10–15 years was detected on the banks of the Evros River. The cadaver was in a state of advanced putrefaction, with concomitant severance of the head and both upper extremities. It was impossible to locate the aforementioned missing body parts. No evidence of the individual's identity was found. Upon forensic



Fig. 1. The cadaver of case #1 as well as the personal item (neck chain) that led to the identification of the victim.



Fig. 2. The anatomical peculiarity of the left ear tragus of the decedent that led to his identification by family members.

examination, the height of the body was measured (149 ± 3.27 cm; stature estimation from femur) and drowning was hypothesized as the most possible cause of death [11]. Furthermore, biological material for DNA testing was obtained. Death was estimated to have occurred four to five months previously. The police were searching for an Iraqi citizen who had reported the disappearance of his three children five months before, when he and his family had attempted to enter Hellenic territory and while they were crossing of the river, the boat had overturned, causing his wife and three children to fall into the river. The Iraqi citizen had been subsequently arrested by the police, reported the incident and declared his children and his wife as missing. The man was transferred by the police from the detention center to the Laboratory of Forensic Sciences of Alexandroupolis, where he recognized the body from the remaining clothing as the oldest of his three children. Biological material was obtained from the alleged father of the deceased and was dispatched to the forensic laboratories of the Hellenic Police Headquarters. There was a familial DNA match confirming the identity of the deceased son, who was then rendered to the father and was buried in a Muslim cemetery in Greece due to the lack of funds to transport the remains to Iraq.

3. Discussion

Since 2000 until the present day (up to the beginning of 2019), on the Greek side of the borders, 398 border-related fatalities have been detected, retrieved and recorded. Considering that only fatal incidents which have been detected on the Greek borders with Turkey or retrieved from the Greek side of the river have been assigned to the Laboratory of Forensic Sciences in the Democritus University of Thrace, it can be reasonably assumed that a similar number of casualties have also been retrieved by the Turkish side, as official records for the Turkish border-related deaths are not available. The estimate is that the recovered cadavers, from 2000 to the present, are approximately 1000 in total on both sides of the river.

The topography of the area as well as the natural characteristics of the river (rich vegetation, muddy riverbed, accumulation of tree branches on the banks) and the Evros Delta (rich in vegetation, marshy area) constitute inhibitory factors in the detection and retrieval of a large number of border-related death victims, whose remains are plausibly never going to be disclosed due to extensive submergence of cadavers at the bottom of the river, consumption of tissue by the river aquatic fauna, decomposition and putrefaction (more decomposition in freshwater in comparison to

saltwater due to reasons including warmer temperatures, absence of salt which has preservative properties and longer postmortem intervals) [12]. There have been many fruitless attempts made by relatives of the missing individuals, who disappeared on their route through the area of Evros, from both records of the Greek and Turkish authorities, which reinforces the claim above. There have been even reports of people who were seen to perish in the river but whose bodies have never been found on the Greek river bank, especially children (with low body mass). It is estimated that since 2000, over the years more than 1500 people have died trying to enter Greece through the region of Evros [1–5,17–19].

The cause of death among border-related fatalities is affected by the migrants' crossing patterns (in regard to selection of routes and means of transportation), as well as smugglers' practices, constantly adapting in order to avoid border checks, and prevailing weather conditions [1]. In respect to the area of the Evros land borders, the principal cause of death in border-related fatal incidents has been drowning in the Evros River. Due to its specific consistency, the river is responsible for an exceedingly large number of drowning incidents. The gathering of many people in short length inflatable boats in order to cross the river, as well as the instability of this type of craft, are major causes of drowning. Furthermore, the large width of the river, the steeply unequal depth and muddy texture of the riverbed, the lack of clarity and speed of the water are factors that hinder attempts to swim across, as well as the limitation of vision during nighttime. In addition, cultural factors play an important role, as a large proportion of migrants do not know how to swim. Furthermore, due to the limited space on the inflatable boats, migrants are prohibited from carrying their personal belongings, resulting in their wearing all of them in their attempt to retain these items. Therefore, the deceased are usually found wearing many layers of clothes (pairs of trousers and shirts). Thus, these numerous layers of clothing are also a factor sadly contributing to rapid drowning in the waters of the Evros River when boats overturn [1–10,12–16,18].

Prior to the construction of the border fence, in 2012, cases of hypothermia were observed mainly among individuals of African origin. The construction of the border fence prevented migrants from passing through the 12.5 km area, but channeled the direction of their route through the icy waters of the river. Frigid conditions during winter, physical fatigue (exhaustion) after swimming and multiple soaked layers of clothing are predisposing factors to death by hypothermia. At present, hypothermia accounts for the second most common cause of death among border-related fatalities [2,5].

During the period 2000–2008, a total of 49 individuals killed by landmine explosions were assigned to the Laboratory of Forensic

Sciences of the University Hospital of Alexandroupolis. Minefield detonation injuries (dismemberment, whole-body disruption, traumatic limb amputation, and lower limb bone fractures) were detected on the cadavers. The demining process was complete in 2008 after a mutual abolition agreement in regard to landmines between Greece and Turkey (Referring to the Ottawa Treaty of 1997 on the Anti-Personnel Mine Ban), and since then, no fatalities resulting from mine detonations have been recorded. Up until 2008, however, fatalities associated to landmine detonations accounted for the second most frequent cause of death among border-related deaths and stood for one third of the migrants' fatal cases [18,20–23].

Other border-related death causes recorded over the years (from 2000 to present) have been traffic accidents, railway accidents resulting from migrants' attempts to board moving trains, pathological causes involving cases of cardiac arrest and aortic aneurysm rupture, as well as cases of homicide.

In regular routine, the cadavers floating on the river surface are usually detected by amateur fishermen, hunters, military and police authorities. By the time a cadaver of unknown ante-mortem data is found, the competent investigating authorities are notified. Before moving the cadaver, photographs are taken at the site and an investigation takes place as accurately as possible for the detection of evidence that could be indicative of the identity of the deceased. Additional information about the deceased is collected if it is possible from arrested migrants in the same border crossing groups. The deceased are then transported to the Laboratory of Forensic Sciences of the Democritus University of Thrace for post-mortem examination and autopsy. During post-mortem examination and prior to autopsy, the deceased are photographed with and without clothing, and fingerprinting is performed if possible. Skin maceration, skin detachment, and putrefaction are frequent reasons that render fingerprinting difficult or impossible. Post-mortem data detected on the decedents (anthropometric characteristics, anatomical peculiarities, circumcision, tattoos, personal belongings, and clothing) are recorded and any evidence which may be indicative of their identity (such

as passports, credit cards, mobile phone cards or phone numbers written on shoe insoles or on a piece of paper) is sought [1,18,24].

During autopsy, an attempt to distinguish between ante-mortem and post-mortem injuries as well as the determination of time and cause of death is made. In each case, the signs for an accurate determination depend on the speed of the recovery of the cadaver, especially in cases of drowning. In regard to cadavers recovered from the river, the overwhelming majority are beyond recognition in advanced putrefaction and bear post-mortem injuries. In 4.35% of the cases, the cause of death has remained undetermined due to multiple post-mortem lesions, putrefaction or skeletonization [1,18,24].

The estimation of age is performed by using the Gustafson dental method of aging. Biological material for DNA profiling is obtained from all unidentified cadavers in order to assist their potential identification, while in all identified cadavers the same procedure is performed in order to confirm their details. Biological samples for DNA testing (teeth, bone samples) are taken regardless of whether cadavers are in putrefaction or not [1,24,25].

By the end of the forensic examination, the cadavers are placed in special storage bags labeled with a unique protocol number for each one, as well as the date and area of their detection. They remain in deep freeze for at least three months and are then sent for burial, accompanied by their unique protocol number.

Water resistant items (such as jewelry, rings, neck chains, pendants, wristlets, plastic cards, and belts) are photographed and kept in the laboratory in order to be subsequently displayed to relatives searching for the missing (Fig. 3). They serve as a possible connecting link for identification, if recognized. The prohibition to create a database for post-mortem data and personal items is an inhibiting factor to the identification of the deceased. Close cooperation with police authorities, numerous state consulates and international organizations (such as the ICRC) during recent years, however, has resulted in an increase in the number of recognitions through personal items. Furthermore, biological samples for DNA profiling are obtained from all first-degree relatives in order to assist or confirm identification through the central DNA database in the police headquarters in Athens.



Fig. 3. Personal objects of unidentified decedents during the last nineteen years.

Finding and identifying the deceased is the greatest issue regarding border-related deaths and its acknowledgment is crucial in order to achieve rendition of the deceased to their relatives. In the decade between 2000–2010, Greece became a magnet for hundreds of thousands of migrants from all over the world on their way to Europe along the eastern Mediterranean route and was declared as the main entry point for migrants into Europe for the period 2005–2010. The Greek government–debt crisis from 2010 to date has not reduced the number of undocumented migrants attempting to enter Europe through Greece [18].

4. Conclusion

Migration fatalities are a major issue of global importance that poses multiple political, cultural, social, ethical and humanitarian dilemmas (which are beyond the scope of this article). From a medical approach, however, the global issue of migration is of major significance, as it relates closely to global health and mortality by involving massive deaths and results in the mobilization of health institutions, government agencies and non-governmental organizations with reference to the management of unidentified bodies as well as the identification and rendition of the deceased to their relatives [18,26,27].

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