

HOMICIDE OR A SUDDEN DEATH? RUPTURE OF VARICOSE VEINS – CASE REPORT

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Abstract: Introduction. Chronic venous insufficiency is a condition that occurs when the venous wall and/or valves in the leg veins are not working effectively. One possible complication is the formation of skin ulceration and its consequent rupture, which can be spontaneous or due to mild or trivial trauma. Sometimes the resulting haemorrhage is fatal. At the death scene – a large amount of blood may be present, which may lead to the hypothesis of violent death.

Case presentation. An unidentified male was found dead on the street. Around the deceased, there was a pool of blood and his trousers were soaked with blood. Due to the peculiarity of the case, the body of the deceased was sent for an autopsy with suspicions of possible homicide or traffic accident.

Discussion. Varicose veins are enlarged, thick and tortuous veins usually found in the lower limbs, associated with valvular incompetence. Ulcerations and bleeding are known complications of chronic venous disease, and they are usually considered non-lethal. When a fatal haemorrhage occurs the presence of a large amount of blood at the death scene rise suspicions of a possible crime.

Keywords: Chronic venous insufficiency, varicose veins, varices, ruptured varicose vein, autopsy, crime scene investigation.

INTRODUCTION

Chronic venous insufficiency (CVI) is a condition that occurs when the venous wall and/or valves in the leg veins are not working effectively and is related to valve reflux and incompetence, and is commonly known vascular diseases [1]. By varicose veins or varicose disease is meant a permanent pathological distention of the vein/veins associated with regressive modification of the venous walls. Varicose veins are one of the many clinical manifestations of the CVI, and can be with different localization over the human body – oesophageal, spermatic, haemorrhoidal or leg vein [2]. Most commonly they are found and described in the lower extremities. Varicose veins are enlarged, dilated, thick and tortuous veins [2-6]. Amongst the most commonly discussed risk factors associated with this health conditions are female gender, age, family history, obesity, and prolonged work activity in a standing

position [7]. In the advanced stages of varicose veins skin changes may be observed – such as hyperpigmentation and induration with eventual ulceration and severe bleeding as a complication may occur [6, 8]. Although this type of complications, are considered as non-lethal, in some situations a spontaneous rupture of the varices can occur, or one can happen following a minor trauma to the affected area due to the weakness of the skin and the vessel wall altered by the disease [1, 3].

CASE PRESENTATION

An unidentified male was found dead on the street, right next to the curb on the pavement. Around the deceased, there was a pool of blood and his trousers were soaked with blood. Due to the peculiarity of the case, the body of the deceased was sent for an autopsy with suspicions of possible homicide or eventually a traffic accident. On external examination it was found

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that the left side of his trousers was soaked with blood reaching the level of his thigh. They were carefully removed and below it was observed a soft bandage intensively soaked with blood situated around the left shank and ankle (Fig. 1). The bandage was removed, and the blood was carefully and adequately cleaned without additionally damaging the area. The corpse was in a good condition of nutrition and preservation. The lividities were scanty. The both legs were with swelling on the level of their lower third and ankles. Cyanosis and leathery-looking skin were present on both legs, more pronounced on the left one. On the anterior surface of the left shank, at the level of the removed bandage multiple irregulars in shape and size ulcerations with signs of healing were present (Fig. 2). One ulceration was with signs of present active bleeding – when a careful squeezing of the lesion was performed those resulted in leaking of some blood drops. The zone was dissected layer by layer and it was noticed



Figure 1. Soft bandage intensively soaked with blood situated around the left shank and ankle.



Figure 2. Multiple irregulars in shape and size ulcerations.

that at the bottom of the above-mentioned ulceration, there is a small defect, communicating with the lumen of a superficially situated varicose vein. No traumatic injuries were observed over the deceased body. The pathological findings during the internal examination of the body included ischemic heart disease and fatty liver disease. Marked pallor of the internal organs was noticed. Samples for toxicological analysis were taken – the results were negative for common poisons and illicit drugs. Later the deceased was identified – he was a 64 years old.

DISCUSSION

After thorough analysis of the case and mostly based on the autopsy findings the cause of death was attributed to hypovolemic shock, as a consequence of bleeding from ruptured varicose vein on the left shank. No traumatic injuries were observed over the corpse so the possibility of a crime (homicide or traffic accident) was excluded. Varicose veins are considered a common condition, with prevalence from 2 % to 56 % in men and from 1 % to 73 % in women [9] but despite this fact exsanguination due to perforation of varicose veins has been reported relatively rare as a cause of death [10]. Moreover, usually the death scene in such cases is associated with presence of great amount of blood, which could give the false perception of violent death and possible crime, as in the case presented and as in the cases reported in the literature [2-4, 7, 9, 10].

In conclusion, such cases require careful evaluation of the death scene findings, the autopsy findings, and medical history of the deceased (if present). Wrong interpretation of the situation can lead to wrong diagnosis, therefore mistaken cause and manner of death, which can have serious consequences with accusing eventually an innocent person for committing a crime. Varicose veins is an emergency condition, and even considered to be non lethal can lead to death, and people who suffer from it don't have to underestimate the bleeding.

Conflict of interest

The authors declare that they have no conflict of interest.

References

1. Manetti AC, Baronti A, Bosetti C, Costantino A, Di Paolo M, Turillazzi E, Maiese A. Bleeding varicose veins' ulcer as a cause of death: a case report and review of the current literature. Clin Ter. 2021;172(5):395-406.

2. Murty OP. Fatal hemorrhage from varicose vein after minor trauma. *Journal of Forensic Medicine and Toxicology*. 2018; 35.1: 66-69.
3. Serinelli S, Bonaccorso L, Gitto L. Fatal bleeding caused by a ruptured varicose vein. *Medico-Legal Journal*. 2020; 096853321988562.
4. Rathnaweera RHAI. A case of fatal haemorrhage due to ruptured varicose veins. *Galle Medical Journal*. 2020; 25.3.
5. Byard RW, Gilbert JD. The incidence and characteristic features of fatal hemorrhage due to ruptured varicose veins: a 10-year autopsy study. *Am J Forensic Med Pathol*. 2007;28(4):299-302.
6. Evans CJ, Fowkes FG, Ruckley CV, Lee AJ. Prevalence of varicose veins and chronic venous insufficiency in men and women in the general population: Edinburgh Vein Study. *J Epidemiol Community Health*. 1999;53(3):149-153.
7. Gentile G, Tambuzzi S, Boracchi M, Del Gobbo A, Bailo P, Zoia R. Fatal hemorrhage from peripheral varicose vein rupture. *Autops Case Rep*. 2021;11:e2021330.
8. Fragkouli K, Mitselou A, Boumba VA, Siozios G, Vougiouklakis GT, Vougiouklakis T. Unusual death due to a bleeding from a varicose vein: a case report. *BMC Res Notes*. 2012;5:488.
9. Ampanozi G, Preiss U, Hatch GM, Zech WD, Ketterer T, Bolliger S, Thali MJ, Ruder TD. Fatal lower extremity varicose vein rupture. *Leg Med (Tokyo)*. 2011;13(2):87-90.
10. Racette S, Sauvageau A. Unusual sudden death: two case reports of hemorrhage by rupture of varicose veins. *Am J Forensic Med Pathol*. 2005;26(3):294-296.