



Case report

Unattended fatal haemorrhage due to spontaneous peripheral varicose vein rupture—Two case reports

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ABSTRACT

Venous haemorrhage is a rare complication of varicose veins of the legs. Varicosis is found in 15–50% of the population. Haemorrhage from ruptured varicose veins of the legs can occur spontaneously or after a minor trauma. More frequent complications of varicosis include peripheral oedema of the ankles, skin pigmentation and skin ulcers. In case of venous haemorrhage simple possibilities of first aid can be applied, therefore fatal haemorrhage is a rarity. Two cases of fatal varicose vein rupture are presented. A 58-year-old man and a 76-year-old woman, both living alone, were found dead in the bathrooms of their apartments. Significant traces of blood were found in all rooms. Both corpses showed typical signs of death from exsanguination. No traumatic lesion was found. Cause of the haemorrhage was a small lesion of the skin of the lower legs of the victims with continuation to an underlying superficial varicose vein. Misinterpretation of life-threatening varicose haemorrhage, unconsciousness, alcohol or drug influence, old age and dementia can promote the death. In case of fatal haemorrhage the death scene can simulate crime due to massive traces of blood and may focus primarily on a non-natural death. However, police investigations and autopsy will disclose the rare cause of spontaneous natural death.

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1. Introduction

In case of fatal haemorrhage the death scene can simulate accidents, suicide or even crime due to massive traces of blood and may focus primarily on a non-natural death [2]. Varicose veins are found in 15–50% of the population in developed countries [13,15]. Fatal varicose bleeding as a sudden natural death is a very rare phenomenon and few cases of venous varicose haemorrhage in the literature have been reported (Table 1) with a wide difference of incidence. Byard et al. found in a period of 10 years 8 cases with fatal haemorrhage due to varicose vein rupture among 10,686 autopsies. Racette and Sauvageau reported only 9 cases in 30 years. Evan et al., however, reported on 23 cases of fatal haemorrhage in just 1 year (1971). In an investigation of about 30,000 autopsies 12 cases of fatal haemorrhage were found [18]. Weyrich reports of an incidence of 0.7 per mille cases.

Two cases of fatal varicose vein rupture are reported here with a review of literature.

2. Case reports

2.1. Case 1

A 78-year-old woman was found dead by her daughter lying in the bathroom of her apartment (Fig. 1). In the kitchen was a large pool of blood (Fig. 2). On the kitchen floor a long strip of plaster was found. Bloody footprints from victim's steps were found in the hall (Fig. 2). They indicated the way into the bathroom where the woman was lying. In the bathroom was blood on the floor, in and around the toilet bowl. On the left heel a blood-soaked plaster had been applied. According to the treating family physician, the woman had not taken any antithrombotic medication. High blood pressure, a slight depressive syndrome and also slight varicosity were known but therefore medical treatment was not indicated.

The external examination showed a body with a weight of 57.4 kg and a body length of 153 cm with sparsely developed livores and pale skin. The external examination revealed a small 1–2 mm lesion of the superficial skin on the left heel (Figs. 1 and 3) connected with a superficial varix (Fig. 4). Some visible varicose veins of the legs, particularly on the lower thigh, on the right and left dorsum of the foot and the left heel were found. No traumatic lesions were revealed.

The internal examination revealed bloodless organs, subendocardial haemorrhage, shock kidneys, pulmonary emphysema, fatty

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Table 1

Cases of spontaneous fatal haemorrhage from varicose vein rupture in the literature.

Year	Author(s)	Cases
2009	P. Hejna [11]	43-year-old man found near his house. Extensive blood pools and traces. 5 cm × 3.5 cm ulcer of the right lower leg, atrophic and discolored skin of the lower extremities, varicosities. Blood alcohol level of 1.1 g/kg. Urine alcohol level 1.19 g/kg
2008	F. Cittadini et al. [7]	82-year-old man found at home. Pool of blood. 5 mm ulcer of the left medial ankle, trophic changes of the skin with varicosities, teleangiectasias, chronic venous disease.
2008	D.M. Cocker, I.K. Nyamekye [8]	85-year-old man found dead in his bath with the bath full of blood. Haemorrhage from varicose veins of the right leg. Varicosities.
2007	R.W. Byard et al. [6]	<p>8 cases of fatal haemorrhage:</p> <ul style="list-style-type: none"> • 4 cases of an acute perforative type with lesion from 1 to 3 mm around the ankles and lower legs. Specified: <ul style="list-style-type: none"> 86-year-old woman found dead in her home. Blood in the bathroom. 3 mm lesion of the skin (ruptured varicose vein) of the right lower leg. Signs of hypothermia. 74-year-old woman found dead at home. Extensive blood loss. 2 mm ruptured varicose vein of the right ankle. Blood alcohol level 0.14%, therapeutic level of alprazolam. • 2 cases of a chronic ulcerative type with ulcers from 10 to 20 mm, surrounded by normal skin • 2 cases with the evidence of a previous trauma, lacerations from 10 to 25 mm, pigmented skin, indurated tissue.
2007	A. Sauvageau et al. [20]	84-year-old man found in his bathroom surrounded by blood. 5 mm cutaneous lesion of a superficial vein of the left foot arch, superficial varicose veins.
2005	S. Racette, A. Sauvageau [19]	84-year-old man (see Sauvageau et al. [20]) 61-year-old man found in his country home. 1 cm ulcer of a chronic varicose vein, varicosities. Alcohol level of 135 mg/10 ml.
2004	K. Püschel [18]	12 cases of fatal haemorrhage
1994	P.L. Morrow et al. [14]	75-year-old man found dead at home. Blood pool with an estimated volume of 2–2.5 L. 5 mm ulcer of the skin with communication to a superficial varicose vein of the left ankle, swollen ankles, atrophic discolored skin. 69-year old women found dead in her bath. Extended blood traces. 5 mm defect of the skin of the left ankle, atrophic skin of the lower extremities with varicose veins, swollen ankles. 75-year-old woman found unconscious in her home. Blood pool. She died on the way to the hospital. 0.5 cm ulcer of a varicose vein on the medial right ankle, atrophic skin of the lower extremities with tortuous varicosities
1991	R. Vock, P. Betz [21]	62-year-old man found dead at home. Blood traces in the apartment. Few millimetres measuring ulcer of the skin of the medial ankle. 55-year old women found dead at home. Blood traces. Small lesion of the skin of an ankle. 85-year-old woman found dead in her bed. Blood pool and traces. Small ulcer of a varicose vein of an ankle.
1988	R.L. Wigle, G.V. Anderson [23]	48-year-old woman was brought to hospital with haemorrhage from a max. 5 mm lesion of the right lateral ankle. Bilateral varicosities, no signs of varicose stasis. She died of haemorrhagic shock despite immediate resuscitation.
1973	G.A. Evans et al. [9]	<ul style="list-style-type: none"> • Not specified 20 deaths of fatal haemorrhage in 1971, half of the haemorrhages from small acute venous ulcers without any sign of varicosity. • 3 specified cases: <ul style="list-style-type: none"> 54-year-old women found dead in her bed, evidence of blood loss. Varicose eczema, scarring, discolored skin of the left medial ankle. 2 mm ulcer on normal skin of the medial right ankle. 83-year-old woman found dead in her bed. Evidence of much blood loss. Bandage of both legs with varicose eczema. 4 mm ulcer of the left ankle. 51-year-old woman found dead in her bed. 2 cm ulcer of the left ankle.
1958	W.W. Woodward [24]	About 7-month pregnant young woman with a 2.5 mm lesion of the left lateral ankle. Varicosities of both legs.
1932	G. Weyrich [22]	31-year old man and 52-year old woman



Fig. 1. Case 1. Death scene. 76-year-old women was found dead lying in the bathroom. The left foot surrounded by a moderate quantity of blood.

liver, porcelain gallbladder, pancreatic fibrosis, slight general atherosclerotic disease with 50% stenosis of the internal carotid arteries, stiffness of the aortic valve and fibrosis of the anterior papillary muscle of the left ventricle. Histological investigations of the macroscopic normal and inconspicuous skin were not performed.

The histological examination showed pulmonary emphysema and pulmonary interstitial oedema and an old scar of the anterior papillary muscle. The toxicological analysis was negative. Cause of death was fatal haemorrhage from rupture of a varicose vein of the lower leg.

2.2. Case 2

A 56-year-old man was found dead in his apartment, sitting on the toilet bowl (Fig. 5), after he had been missed a while. The right foot was placed in a bowl filled with blood. Throughout the apartment were abundant traces of blood (Fig. 6).

The external examination showed a body with a weight of 94.4 kg and a body length of 173 cm. The body was with sparsely developed livores and pale skin.

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