

## *Casuistics*

# **A fatal accident on the football field**

**M. Varga and P. Takács**

Institute of Forensic Medicine, Debrecen Medical University, P.O. Box 25, H-4012 Debrecen, Hungary

Received November 2, 1989 / Received in revised form August 9, 1990

**Summary.** A 21-year old centre forward died after a collision with the opposing goalkeeper during a football match. The centre forward fell to the ground on his back and the goalkeeper fell on top of him, his knee hitting the centre forward hard in the chest and neck. There was no obvious foul and the referee did not award a penalty. The ambulance arrived too late to save the player's life. The medicolegal autopsy revealed a severe contusion of the larynx and rupture of thyroid cartilage, which resulted in hemorrhage and caused death by suffocation.

**Key words:** Fatal sports accident – Thyroid rupture – Laryngeal contusion

**Zusammenfassung.** Ein 21 Jahre alter Stürmer starb nach einer Kollision mit dem gegnerischen Torwart während eines Fußballspiels. Der Stürmer fiel auf den Boden auf seinen Rücken und der Torwart fiel auf ihn herauf, wobei sein Knie den Stürmer hart am Brustkorb und am Hals traf. Es gab kein offensichtliches Foul und der Schiedsrichter gab auch keinen Freistoß. Der Rettungsdienst erreichte den Unfallort zu spät, um den Stürmer noch zu retten. Die gerichtsmedizinische Obduktion deckte eine schwere Kontusion des Kehlkopfs und eine Ruptur des Schildknorpels auf, welche zu einer Blutung führte und den Tod durch Erstickung verursachte.

**Schlüsselwörter:** Tödlicher Sportunfall – Schildknorpelruptur – Kehlkopfkontusion

## **Introduction**

Injuries of the larynx and trachea may occur under various conditions. In most cases fractures of the hyoid bones or thyroid cartilage are results of throttling or strangulation

[1, 3, 5]. They generally occur as part of more extensive injuries sustained in motor vehicle accidents but may also occur due to falls [5]. Subcutaneous ruptures of the trachea caused by blunt impact have also occasionally been described [2]. Laceration and perforation of airways may be a complicating factor of resuscitation or laryngoscopy [4, 6]. It is imperative that detailed information be gathered at medicolegal autopsies and inquests regarding the method of resuscitation to differentiate iatrogenic injuries from force impact [7].

## **Case report**

In a football game the centre forward collided with the goalkeeper and fell to the ground on his back. The goalkeeper fell on top of his chest and neck with one knee. Neither the referee nor the linesmen noticed any obvious foul so play was continued. The centre forward expectorated frothy blood and was removed from the field. No resuscitation was attempted and when the ambulance arrived the player was already dead. As death was certain, neither resuscitation nor laryngoscopy was attempted.

## **Autopsy findings**

There were no visible wounds on the body surface. The nostrils and the mouth were filled with greyish-red bloody foam. Petechiae could not be found in the conjunctiva or the pleura. The mediastinal tissue contained air blisters which crackled when pressed because the respiratory tract opened into the soft tissues of neck and mediastinum. There was no pneumothorax. The upper respiratory tract and bronchioles were almost completely filled with coagulated and frothy fluid blood. Multiple blood aspiration foci varying in size from a few millimeters to 1–2 centimeters were observed throughout all lobes of



**Fig. 1.** The rupture of thyroid cartilage



**Fig. 2.** The vagal nerve enclosed in hemorrhage

the lungs. The body of the thyroid cartilage was ruptured and the surrounding connective tissues were lacerated (Fig. 1). The vagal nerve was enclosed by haemorrhage (Fig. 2). Death could not have been instantaneous because the right ventricle of the heart was found to be dilated and the brain was severely edematous. The viscera did not show characteristic lesions. The cause of death was given as suffocation caused by blood aspiration.

## Discussion

Injuries to the neck may cause sudden death without any visible signs of severe injury and are of great forensic importance. Fractures of the laryngeal structure are generally caused by throttling or strangulation or they are part of extensive injuries sustained in traffic accidents. Isolated fractures, ruptures or contusion may occur in connection with blunt forces due to a fall or a blow against the neck. Such injuries are more frequent in cases of localised force against the neck (edge-of-hand blow). Injuries of the larynx have also been reported to be a complication of resuscitation [4].

A medicolegal autopsy of a fatal football accident was carried out where a centre forward died after colliding with the opposing goalkeeper and suffered laryngeal contusion and rupture of the thyroid cartilage because the goal-keeper fell on his neck with one knee. The cause of death was found to be suffocation from laryngeal bleeding. Since no resuscitation or laryngoscopy was carried out it was not necessary to consider possible iatrogenic injuries. However, if complex resuscitation occurs in similar cases, the autopsy finding can only be properly interpreted after evaluation of detailed information regarding the circumstances of the injury and the method of resuscitation.

## References

1. Camps FE (1959) Pressure on the neck. *J Forensic Med* 6: 116–136
2. Coetzee T, van Niekerk JP de V (1965) Complete subcutaneous rupture – separation of the cervical trachea. *J Trauma* 5: 458–463
3. Gordon I, Shapiro HA, Taljaard JJP, Engelbrecht HE (1976) Aspects of the hyoid-larynx complex in forensic pathology. *Forensic Sci Int* 7: 161–170
4. Gregersen M, Vesterby A (1981) Iatrogenic fractures of the hyoid bone and the thyroid cartilage. A case report. *Forensic Sci Int* 17: 41–43
5. Polson CJ, Gee DJ, Knight B (1985) *The essentials of forensic medicine*. Pergamon Press, Oxford New York Toronto Sydney Paris Frankfurt, pp 179–180
6. Voigt GE (1974) Petechial bleedings in the larynx. *Forensic Sci Int* 3: 256–257
7. Voigt J (1979) Genoplivning og retslægelige undersøgelser. *Ugeskr Læger* 140: 726