

A Caliber-persistent Artery of the Gastric Wall Resulting in Fatal Haemorrhage

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Summary. A 12-year-old girl was admitted to hospital with haematemesis. Her family suffered from histidinaemia. Due to her numerous injuries the police suspected a crime. After a short period of clinical treatment she died. Autopsy showed the left ureter to be narrowed and a consecutive abscedens pyelonephritis. Pyloric ulcer caused erosion of a caliber-persistent artery which led to death with haemorrhage. The death had nothing to do with violence. Adequate surgical treatment could have saved the patient's life.

Key words: Caliber-persistent artery, fatal haemorrhage – Pyloric ulcer, erosion of a caliber-persistent artery

Zusammenfassung. Es wird über eine tödliche Blutung durch Arrosion einer caliber-persistenten Arterie in einem im Pylorus gelegenen Ulcus berichtet. Caliber-persistente Arterien sind solche, die über einen längeren Abschnitt das Kaliber beibehalten. Sie verlaufen in der Submukosa des Magens, kommen im Pylorus-Bereich aber selten vor. Demnach handelt es sich – von der Lokalisation her – um eine Anomalie. Bei dem 12 Jahre alt gewordenen Mädchen lag eine Histidinämie, d. h. ein seltenes, wahrscheinlich autosomal-rezessiv vererbtes Syndrom mit Mangel des das Histidin abbauenden Fermentes, vor. Das Syndrom geht mit Minderwuchs, Sprachstörungen und emotionaler Unausgeglichenheit einher. Die bei der wegen Bluterbrechens erfolgte Einweisung im Krankenhaus festgestellten zahlreichen oberflächlichen Verletzungen, die zunächst auf Mißhandlung zurückgeführt wurden, konnten durch Verhaltensstörungen des Kindes erklärt werden.

Schlüsselwörter: Magenulcus – Blutung aus caliber-persistenter Arterie – Histidinämie

Introduction

Fatal haemorrhage from caliber-persistent or aberrant arteries of the submucosa may occur at every age.

This malformation is rather infrequent though, considering these possibilities, surgical treatment carried out in time can be life-saving.

Case Report

A 12-year-old girl was admitted to hospital with haematemesis. The child came from a family of ten children. They had suffered from histidinaemia and had been mentally retarded. When she was first examined she was thought not to have been cared for sufficiently. A great number of injuries was found on her body. Her body was covered with ecchymosis and many incision-like crusted wounds were found on the scalp. Frost-like injuries were to be seen on the fingers and toes. The patient was under observation in the hospital of pediatrics and was not administered any drugs. Twelve hours after her admission she suddenly collapsed and died. Due to her injuries crime was suspected. A similar case of a 6-year-old child from the same family had been recorded some years earlier. According to the parents' information both children had often fallen, had hit each other or their heads against the wall and had been skating barefoot on the ice.

Necropsy Findings

Autopsy showed a normally developed, slim, 128-cm tall girl. Numerous injuries of different stages were seen on the body. We found 32 injuries on the scalp, many of them were cicatrized, and six of them were superficial injuries. The skin of her back was healed with superficial cicatrices, and recent contusions were observed as well. There was a cerebral oedema. The pleura smelled of urine and was scattered with petechiae. The right ventricle was moderately dilated. The spleen was septic. The main alteration was observed in the stomach. The stomach was filled with a 500-g blood clot. An ulcer measuring 1 cm in diameter and 2–4 mm in depth was observed in the pylorus. Its edge was firm to touch. After removing the sanguineous mucus from the basis of the ulcer, the lumen of a blood vessel was seen. The left kidney was small, measuring 4 × 2 cm in size. Rough, scarred, 3–5 mm in diameter, greyish-red circumscribed melted areas, were seen on the surface. They were homogeneous on the cut surface, and greyish-white stripes were seen in the adjacent cortex. The left pyelon was large, the transition and the initial part of the ureter were significantly narrowed.

Histological Findings

Histologically, a chronic peptic ulcer was found in the pylorus. The pylorus showed the usual picture of chronic peptic ulcers. The base of the ulcer was filled with mononuclear cells and granulation tissue. There was a caliber-persistent artery in the submucosa on the ulcer area. The diameter of the vessel was



Fig.1. The caliber-persistent artery in the submucosa of the gastric wall

abnormal for this location. The artery was ruptured and embedded in a clot. Another thrombotized arteriole was seen next to it (Fig. 1).

Discussion

The term “caliber-persistent artery” was first used by Voth [8] to report gastric arteries without ramification and without reduction of their caliber. This lesion has already been mentioned in the earlier surgical pathology [1]. This vascular anomaly was assumed to be a congenital malformation [2, 3]. It is generally asymptomatic, but it may cause fatal haemorrhage. In the area of malformations, the stomach wall is occasionally eroded because the submucous layer over this large vessel becomes ischaemic. The multiple occurrence of this anomaly was reported as well [7]. Caliber-persistent arteries have also been observed in the jejunum [4, 6] and in the lower lip where it simulated cancer [1].

We described a fatal haemorrhage in a 12-year-old girl. She had a few hours' history of haematemesis. The cause of haematemesis as a stress ulcer was supposed. After her sudden death the autopsy showed an arterial malformation

called “caliber-persistent artery” in the base of her pyloric ulcer. The cause of death was haemorrhage. Although it is difficult to localize the origin of bleeding the surgical intervention is the only way to solve this dangerous alteration. The case was originally thought to be a battered child syndrome.

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