JOURNAL OF FORENSIC SCIENCES

J Forensic Sci, January 2012, Vol. 57, No. 1
doi: 10.1111/j.1556-4029.2011.01902.x
Available online at: onlinelibrary.wiley.com

CASE REPORT

PATHOLOGY/BIOLOGY

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Littre Hernia—A Rare Cause of Unexpected Death in the Elderly

ABSTRACT: A rare case of sudden and unexpected death is reported in an 87-year-old woman who was found dead at her home. At autopsy, the most striking finding was of a right-sided direct inguinal hernia containing a 20 mm infarcted Meckel diverticulum, with proximal small intestinal obstruction. Significant stenosing atherosclerosis was present in all three major epicardial coronary arteries, but with no histological evidence of acute or chronic ischemic myocardial damage. Death was attributed to small intestinal obstruction due to direct inguinal herniation (and infarction) of a Meckel diverticulum (a Littre hernia), complicating ischemic heart disease. Although Littre hernias are not a reported cause of sudden death in the elderly, congenital gastrointestinal anomalies may rarely play a significant role in terminal episodes well beyond childhood years. The autopsy assessment of sudden death at any age involves detailed examination of the entire length of the intestinal tract.

KEYWORDS: forensic science, unexpected death, elderly, gastrointestinal, Littre hernia, Meckel diverticulum

Meckel diverticulum is the most common congenital malformation of the small intestine. It is usually asymptomatic although inflammation may mimic acute appendicitis. Very rarely Meckel diverticulum may be associated with sudden and unexpected death. This involves intestinal herniation under a mesodiverticular band that runs from the tip of the diverticulum to the base of the mesentry and is an event that mainly occurs in childhood (1,2). The following case is reported to demonstrate a rare event that of unexpected death associated with a Meckel diverticulum in an elderly woman that was not because of mesodiverticular band herniation.

Case Report

An 87-year-old woman was found unexpectedly dead on the lounge room floor at her home. She had a past history of hyperlipidemia and dementia, but had been clinically stable. At autopsy, the most striking finding was of a right-sided direct inguinal hernia containing a 20 mm infarcted Meckel diverticulum, with proximal small intestinal obstruction. The neck of the hernial sac measured approximately 8 mm (Fig. 1). The peritoneal cavity contained approximately 50 mL of serosanguinous fluid. The diverticulum was plum-colored suggesting ischemic necrosis, which was later confirmed on histology. There was no perforation. The proximal small intestine was dilated and filled with a large amount of brown fluid, while the small intestine distal to the hernia was of normal caliber and empty. Significant stenosing atherosclerosis was present in all three major epicardial coronary arteries with no histological evidence of acute or chronic ischemic myocardial damage. The brain showed bilateral symmetrical ventricular dilatation with gyral atrophy in keeping with the history of dementia. Death was attributed to small intestinal obstruction because of direct inguinal herniation and infarction of a Meckel diverticulum (a Littre hernia), complicating ischemic heart disease.

Discussion

Meckel diverticulum is a remnant of the embryonic yolk sac and occurs in approximately 2–3% of the population (3). Prior to the establishment of the placenta, the yolk sac connects to the gut by the vitelline or omphalomesenteric duct providing nutrients to the developing fetus. It involutes between the fifth and the seventh weeks of gestation. Partial or complete failure of involution results in a diverticulum. A typical Meckel diverticulum is situated 50–90 cm from the ileo-cecal valve on the antimesenteric boarder of the small intestine. It usually measures approximately 50 mm in length and may contain heterotopic gastric mucosa or pancreatic tissue (1,3).

Most Meckel diverticulae (>95%) are clinically silent, being found incidentally during barium studies, laprotomies, or at autopsy. If manifestations occur, they most commonly develop in the first 2 years of life and include gastrointestinal hemorrhage, obstruction, and inflammation (2). Hemorrhage is caused by ulceration because of acid secretion from the heterotopic gastric mucosa or by intussusception (4). Obstruction can also result from intussusception or from herniation through a defect caused by a fibrous mesodiverticular band (3).

Littre hernia is the term used for protrusion of a Meckel diverticulum through any hernial orifice (5,6). These hernias are generally innocuous and classically have minimal clinical manifestations, as the ileal lumen remains patent with no impediment to the flow of intestinal contents. The only positive findings may be a mass and tenderness if the diverticulum becomes incarcerated. The usual sites

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Received 7 Aug. 2010; accepted 17 Nov. 2010.

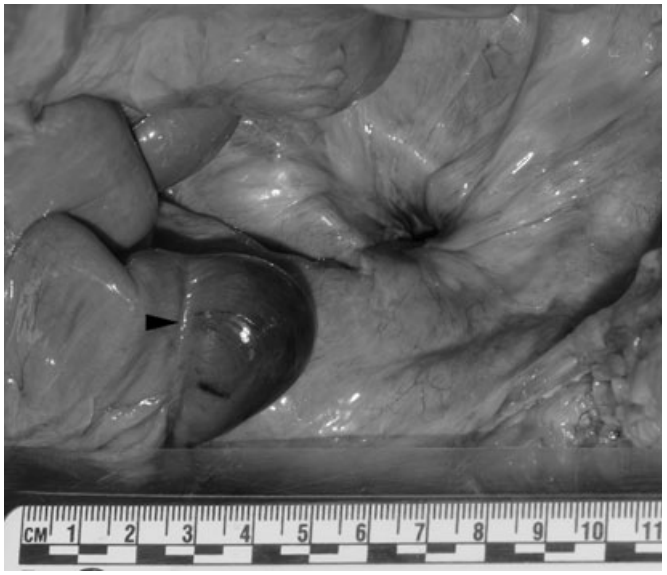

FIG. 1—*A Littre hernia because of protrusion of a Meckel diverticulum through a right inguinal defect. The diverticulum showed evidence of ischemic necrosis but was not perforated. A groove can be seen at the base of the diverticulum (arrowhead) where compression from the narrowed neck of the sac had occurred.*

are inguinal (50%), femoral (20%), umbilical (20%), and elsewhere (10%) (5,6).

Unexpected death is only rarely associated with Meckel diverticulum and has been most often reported in children where there has been herniation beneath a fibrous mesodiverticular band (1). Very occasionally such deaths have been reported in adults. Death results from intestinal obstruction with dehydration and circulatory collapse (2). Similar deaths may occur with internal intestinal herniation through mesenteric defects (7).

Littre hernias are uncommon, with <50 cases reported in the 20th century and are usually clinically silent (5,6). Thus, in the reported case, death resulting from a Littre hernia with infarction and proximal small intestinal obstruction was an exceedingly rare occurrence. A variety of uncommon gastrointestinal causes of sudden death may occur in the elderly including herniation of small intestine through defects caused by greater omentum adherent to inflamed small intestinal diverticulae, or to intestinal obstruction due direct inguinal herniation of the appendix (8). It is of note that these events may occur with minimal or no apparent symptoms and signs. Underlying dementia, as in the reported case, may also dull a patient's perception of pain and/or discomfort.

This case shows yet another rare intraperitoneal cause of unexpected death in the elderly and demonstrates that congenital anomalies may play a significant role in terminal episodes well beyond childhood years. Coincident underlying diseases such as dementia may mask the clinic presentation, and ischemic heart disease may contribute to lethal outcomes (9). Careful examination of the full length of the intestine is an important part of the autopsy assessment of sudden death at any age.

Acknowledgment

We would like to thank the South Australian State Coroner, Mr. M. Johns, for permission to publish selected details of this case.

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