Hepatic pseudolipoma

PEKKA J KARHUNEN

From the Department of Forensic Medicine, University of Helsinki, Helsinki

SUMMARY Pseudolipoma of the liver is a rare condition which may be confused with metastatic tumours, primary tumours, or other lesions of the liver. This study presents three hepatic pseudolipomas that occurred in men aged 33, 38, and 42 years. The prevalence of hepatic pseudolipoma was 0.2% in a series of 1300 consecutive necropsies. The histological elements of pseudolipoma are identical with those of twisted peritoneal fat nodules (epiploic appendix) or peritoneal loose bodies, four cases of which were also found in the same material. The size of the migrating loose body may be the critical factor for entry into the space between the diaphragm and the liver. The nutrition of one pseudolipoma seemed to have been obtained from the liver capsule. There was no significant correlation with previous abdominal surgery or obesity.

Pseudolipoma of the liver is a rarely reported lesion that lies on the surface of the liver and can easily be confused with carcinoma metastasis, benign tumours, abscesses, or tuberculous nodule.²⁻⁴ Only 13 cases have been reported.¹⁻⁶ Pseudolipoma has been assumed to stem either from detached fat pouches (epiploic appendixes) of the large bowel⁴⁻⁶ or from degenerating hepatic lipoma,³ and to be associated with previous abdominal surgery.^{2,4} This study presents three more cases of hepatic pseudolipoma and shows their morphological similarity to peritoneal fat nodules and peritoneal loose bodies.

Material and methods

The material for the study comprised three hepatic pseudolipomas found in 1300 consecutive medico-legal necropsies over eight months in 1982-3.

CASE 1

A 33 year old unemployed man had hanged himself. At necropsy a hard nodule, 1.0 cm in diameter, was found at the diaphragmatic surface of the right lobe of the liver. The nutrition of the nodule seemed to have been obtained from the vessels of the liver capsule. The patient had a history of alcoholism and had undergone appendectomy.

CASE 2

A 38 year old alcoholic man was found dead in his apartment. Necropsy showed that he had choked on vomit. The alcohol concentration in his blood was

3.97 mg/100 ml and in his urine 5.02 mg/100 ml. A toxic amount of metoprolol was also found in the blood. A firm yellowish nodule, 2 cm in diameter, was detected partly embedded at the surface of the liver (Fig. 1a). He had no history of surgery but was overweight (86 kg).

CASE 3

A 42 year old man had hanged himself. A flat calcified tumour, 0.9 cm in diameter, was found at the surface of the right lobe on the liver (Fig. 1a). The cut surface appeared to be necrotic. He had no history of surgery.

Strangulated epiploic appendixes and peritoneal loose bodies

In the same necropsy series four other morphologically similar nodules, which were not attached to the liver, were detected in the abdominal cavity. Two of the nodules were found along the tenia of the large bowel: one was a strangulated fat pouch (epiploic appendix) 1.5 cm in diameter on the serosa of the sigmoid colon in a 61 year old woman (Fig. 1b); the other was a similar, whitish and hard nodule, 2.0 cm in diameter, at the transverse part of the colon. Two nodules, 2.0 cm and 2.5 cm in diameter, were found as loose bodies in the peritoneal cavity, one in a 54 year old man and the other in an 87 year old woman (Fig. 1b). Two of these four patients had undergone appendectomy and one was overweight (110 kg).

Some of the specimens were photographed before being fixed in 10% buffered formalin and embedded in paraffin. Sections of tissue were stained for fibrous tissue. For comparison, a history of or scars

Fig. 1a Hepatic pseudolipoma showing tight fibrotic adhesions at margins and macroscopic similarity to metastasis. Note typical marginal groove. $\times 7$. (Right.) Hepatic pseudolipoma composed of fibrous tissue and adult fat tissue situated in dimple on surface of right lobe of liver. (Left.)

from abdominal surgery were recorded in 100 consecutive necropsies.

Results

In three of the seven cases in this study (42%) abdominal surgery had been undertaken, but this was equally true (39%) of the normal necropsy material. The mean weight (73.3 (SD 21.7) kg) was not significantly higher (two tailed *t* test) than that in the consecutive necropsy material (70.8 (17.2) kg).

Morphologically, all three pseudolipomas and the

four other nodules comprised identical histological elements, with variation in the thickness and calcification of the fibrous capsule and in the amount of necrotic material in the fatty tissue inside the nodules. It is likely, therefore, that they all represented various stages and locations of strangulated fat nodules of the large bowel.

Discussion

Pseudolipoma of Glisson's capsule is usually firm, roundish, and partly embedded at the diaphragmatic

Fig. 1b Strangulated fat pouch (epiploic appendix) on serosa of sigmoid colon in 61 year old woman. (Left.) Histological elements of strangulated fat pouch, and free peritoneal body (peritoneal "mouse") are the same. $\times 31$. (Right.)

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surface of the right lobe of the liver with a typical marginal groove. Macroscopically, the lesions in this study resembled metastases. The typical structure comprised a fibrous partly hyalinised or calcified capsule surrounding mature, partly degenerating adipose tissue with fine fibrous septa.^{2,4,5} The colour usually varies from white to yellow or grey, depending on the extent of calcification. This lesion, which is like a tumour, lies completely outside the liver in a dimple of Glisson's capsule and can sometimes be extracted. Hepatic pseudolipoma must be distinguished from true lipoma of the liver, which is also rare but situated deep in the parenchyma of the liver. Lipoma has irregular margins and is not encapsulated.⁴

The aetiology of this peculiar condition seems to have little to do with the liver. It may stem from the epiploic appendixes of the peritoneal cavity. The epiploic appendixes are fat tags covered with peritoneum, 2–10 cm long, attached in rows along the tenia of the colon. Sometimes an abnormally long or fat appendage may become twisted or gradually lose its blood supply. This process may induce abdominal pain, simulating appendicitis when on the right side and acute diverticulitis when on the left side.⁷ This partially necrotic body may then become detached, giving rise to a free body (peritoneal loose body or "mouse"),⁷ which is occasionally encountered at necropsy.

The free body may then move in the peritoneal cavity, and for some unknown reason, lodge itself between the diaphragm and the liver, becoming trapped on the surface of the liver. Although an "outsider," its nutrition seems to be obtained from the circulation of the liver, as noted by Fievez and Courtoy.⁶ The connection to the blood supply of the liver may have been acquired through an inflammatory process caused by local mechanical damage or pressure to the liver capsule. The peripheral part of the free bodies may obtain some nutrition by diffusion from the peritoneal fluid as do free tumour cells and cartilage fragments in joints.

The fate of hepatic pseudolipoma remains obscure. With sufficient nutrition the lesions can probably survive. Shepherd and Lee described solitary necrotic nodules that were composed of a necrotic core surrounded by a dense collar of hyalinised collagen and situated on the anterior aspect of the liver.⁹ Some of these nodules might originate in degenerating hepatic pseudolipomas. The size of the reported pseudolipomas ranged from 0.4 cm to 2.0 cm: the size of the migrating loose body may be critical for entry into the space between the diaphragm and the liver as free bodies of various sizes, ranging from that of a pea to a hen's egg, have been found in the peritoneal cavity.⁷

The pseudolipomas found in this necropsy series most probably represented the various forms of strangulated fat nodules of the large bowel. Strangulation of a lipoma, the most common benign tumour of the mesentery,⁸ should also be considered in the aetiology. Ishak mentioned that in one of his cases of pseudolipoma a nodule similar to one in the liver was found in the serosa of the greater curvature of the stomach.²

The prevalence of pseudolipoma in this study was higher than the previous reports have indicated, the occurrence being 0.2% (three out of 1300 consecutive autopsies). The mean age (60.5 years) of the patients reported on previously, however, was considerably higher than in the present study (37.7 years).

The fact that the prevalence of previous abdominal operations and mean weight were not significantly different between this study and previous reports indicates that these factors may not be causative or contributory factors.⁴

The abuse of alcohol in two of the cases in this study and in one described by Fievez and Courtoy⁶ might have contributed to the accumulation of fat in the mesentery. In addition, multiple lipomas have been found in chronic alcoholics.¹⁰

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Requests for reprints to: Dr Pekka J Karhunen, Department of Forensic Medicine, University of Helsinki, Kytösuntie 11, 00280 Helsinki, SF-Finland.