A 35-year-old woman with no clinically significant medical history besides the use of oral contraceptives, presented with acute upper abdominal pain. On physical examination the right upper abdomen was tender without any signs of peritonitis. She had a blood pressure of 110/70 mmHg and a pulse of 110 beats/min. Laboratory results showed a haemoglobin level of 8.2 mmol/l (range 7.5-10) and elevated aspartate aminotransferase level of 100 U/l (range 2-40 U/l), alanine aminotransferase level of 72 U/l (range 2-40 U/l), and lactate dehydrogenase level of 599 U/l (range 0-450 U/l). Within a few hours her condition deteriorated. She was clammy and had a pulse of 125 beats/min with a blood pressure of 95/65. She was transferred to the intensive care unit where an ultrasound was performed followed by contrast-enhanced multiphasic CT scan showing on the no contrast phase (Figure 1) a) a large inhomogeneous mass (7 by 15cm) in the liver with hypodense (Figure 2, asterix), and hyperdense areas within the mass, becoming highly attenuated on the arterial (Figure 2, arrow) and extending on the venous phase (Figure 3, arrow) suggesting contrast leakage.

The patient suffered an acute haemorrhage due to rupture of a hepatocellular adenoma associated with prolonged contraceptive use. While establishing the diagnosis there was a significant fall in the haemoglobin level to 6.1mmol/l, requiring blood transfusion. She underwent successful selective arterial embolization of the right hepatic artery. Symptoms resolved immediately after embolization.

Hepatic adenomas are usually solitary lesions composed of large adenoma cells and are associated with the use of oral contraceptives or the use of androgens. This benign tumour is seen mostly in women between the ages of 20 to 50 years with an estimated incidence of 3-4 per 100,000 women per year [1]. Adenomas vary in size from a few millimetres to more than 20 centimetres [2]. The patient usually complains of abdominal pain localized in the right upper quadrant, which can also be a sign that bleeding has occurred. The risk of bleeding is unknown, however, if ruptured with manifest hypotension mortality can be up to 20% [3]. Adenomas can also transform into malignant hepatocellular carcinoma. Teeuwen et al describe an incidence of 4 to 16% of malignant foci in adenomas but exact data found in the literature concerning the risk of malignant transformation are lacking. Both computed tomography and magnetic resonance imaging with intravenous contrast can be used to establish the diagnosis and for follow-up [1]. On computed tomography, hepatic adenomas are usually well demarcated and have a heterogeneous appearance due to necrosis or haemorrhage. Hepatocellular carcinoma or focal nodular hyperplasia can be difficult to distinguish from adenomas on imaging studies alone, putting the clinician in a dilemma due to the tendency of bleeding after biopsy and the risk of developing metastases when aspirating from a malignant liver tumour [4].

If a hepatic adenoma is suspected, oral contraceptives or anabolic steroids should be discontinued. However, there is no consensus on if and when an adenoma should be resected [1,5,6].

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Tumours that are symptomatic, fast growing, or larger than 5cm are usually surgically resected. Over recent years even in large adenomas there has been a tendency towards conservative treatment for the following reasons. First mortality after elective resection is 1% increasing to 5-8% if acute surgery is performed [2,7]. Secondly, adenomas can regress after stopping oral contraceptives or after embolization of the hepatic artery. Selective embolization seems promising not only in treating bleeding adenomas but also for tumour mass reduction [8].

Our patient was advised to avoid the use of oral contraceptives in the future. Follow-up showed signs of regression of the adenoma therefore no further surgery was needed.

**Figure 2.** Arterial phase of the contrast enhanced abdominal CT-scan showing hypodense (asterix) and hyperdense areas within the mass. These areas are due to fibrosis or necrosis within the adenoma. Some areas become highly attenuated (arrow).

**Figure 3.** Venous phase showing further enlargement of the hyperdense lesion (arrow) suggesting contrast leakage.

**Reference**