incarceration at the site of laparoscope insertion that resulted in intestinal obstruction, and claimed that this was the first report of this complication of laparoscopy. Both patients eventually needed small bowel resection, 14 and 21 days after laparoscopy. These two patients, and the one described above, were initially well after laparoscopy and then started to vomit on the third and the sixth days after laparoscopy. Thompson and Wheelless⁴ reported that burns or traumatic injury typically present between the third and seventh post-laparoscopic day and then need urgent surgical treatment. They recorded 11 bowel injuries in a series of 3600 laparoscopic sterilisations. Thus, obstructive symptoms occurring a week or more after laparoscopy may be due to bowel incarceration at the site of laparoscope insertion.

Herniation may occur at the site of laparoscopic insertion, and Bishop and Halpin⁵ reported protrusion of omentum through an infraumbilical laparoscopy incision. This occurred on the third post-laparoscopy day after a coughing bout.

These three reports of herniation and one of protrusion at the site of laparoscope insertion were all associated with either 11 or 12 mm-diameter instruments. These rare complications might be eliminated if smaller diameter instruments, which are available, were used.

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Hepatic-cell adenoma presenting with intraperitoneal haemorrhage in the puerperium

An association between hepatic-cell adenomas and the contraceptive pill was first suggested in 1973 by Baum *et al.*¹ and since then over 100 cases have been recorded.²⁻⁵ We describe a case of fatal intraperitoneal haemorrhage due to rupture of a hepatic-cell adenoma that presented five days after caesarean section and 13 months after stopping oral contraceptives.

Case report

A 26-year-old woman presented at 15 weeks in her fourth pregnancy. After her third pregnancy she started lynestrenol and ethinyloestradiol (Minilyn) and continued for three and a half years. Her pregnancy started three months after stopping oral contraceptives and progressed normally until 38 weeks, when moderate pre-eclampsia developed and labour was induced. Fetal distress necessitated a caesarean section, and a healthy 3180 g girl was delivered through a lower segment incision. The puerperium was satisfactory until the fifth day, when the patient suddenly complained of weakness and epigastric pain. The patient rapidly became shocked.

Laparotomy disclosed massive intraperitoneal haemorrhage caused by a ruptured ill-defined yellow tumour that affected both lobes of the liver. The tumour was biopsied, and the bleeding site was packed with surgical and the capsule sutured. Histological examination showed multiple fragments of a hepatic-cell adenoma with considerable disruption of the tissue by haemorrhage. Typically, the adenoma was devoid of portal triads and consisted of hepatocytes in an almost normal trabecular arrangement with moderately numerous binucleated and multinucleated cells (see fig). There were no fibrous tissue septa. A vascular component was prominent, and there were numerous thick-walled blood vessels but no blood-filled cysts. In the sinusoids extramedullary haemopoiesis was present. The patient never regained consciousness, and despite intensive treatment and assisted respiration died seven days later.

Hepatic-cell adenoma showing a trabecular arrangement with binucleated and multinucleated hepatocytes. There is no fibrosis and portal triads are absent. (H and E $\times 77$.)

At necropsy the liver weighed 2600 g and was enlarged by a circumscribed yellow-tan tumour that had replaced most of the left lobe and extended across the hilum into the right lobe. It measured 10 $\times$ 10 $\times$ 5 cm and had ruptured through the posterior inferior surface of the liver. There was no spread of tumour beyond the liver. The histology was similar to that of the biopsy specimen and confirmed a hepatic-cell adenoma.

Comment

Hepatic-cell adenomas are usually reported in association with oral contraceptive use and appear related to the drug exposure time. Regression of the tumour probably occurs on withdrawal of medication, and diagnosis after ceasing oral contraceptives is uncommon.²

Presentation of a hepatic-cell adenoma with rupture in the puerperium 13 months after stopping oral contraceptives is an unusual sequence of events, but Fechner,⁴ in an extensive review, noted two patients with similar histories. An analysis of the first 100 cases in a registry of liver tumours⁵ started in 1973 found three hepatic-cell adenomas presenting in the puerperium, but with no history of oral contraceptive hormones. The evidence for a relationship between oral contraceptive hormones and hepatic-cell adenomas is now reasonably well established,^{2-4,6} but the association with pregnancy has been noted only in a few cases, and this is not evidence of a causal link.

Possibly, however, pregnancy could influence the outcome of an adenoma already present in the liver. By stimulating active cellular growth pregnancy may predispose to haemorrhage and rupture a tumour that might otherwise have remained symptomless and regressed once oral contraceptive hormones were stopped.

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