- (7) Is there adequate capacity and mobility within the vagina?
 (8) Is there appreciable anterior vaginal wall prolapse? If vaginal capacity is adequate colposuspension is my preferred procedure for the combination of stress incontinence and anterior wall prolapse; some clinicians, however, prefer a vaginal repair where prolapse is present and otherwise use the Marshall-Marchetti-Krantz cystourethropepy.

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Lesson of the Week

Curable metastatic cancer in young women

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Disseminated cancer is rare in young women and the prognosis usually poor. Gestational choriocarcinoma is an exception, being potentially curable; it should be considered if there is a history of hydatidiform mole. Most patients with hydatidiform mole are followed up by the United Kingdom's registration scheme and treated at an early stage when necessary.¹ Choriocarcinoma also arises from about one in 40 000 non-molar pregnancies and, although the symptoms may develop within weeks of delivery or miscarriage, there may be a delay of months or years. In about one quarter of these cases the presentation is non-gynaecological.² We report three cases that indicate the importance of considering this diagnosis in any woman with a possible history of pregnancy and clinical features suggestive of metastatic malignancy. The diagnosis can be confirmed by the results of assay of the urine or blood for human chorionic gonadotrophin.³

Case 1

A 30 year old woman was admitted to hospital with severe upper abdominal pain in March 1986. A mass was found in the upper right quadrant of the abdomen. Two months earlier she had suffered from a short episode of weakness of the right arm and leg and dysphasia. A computed tomogram of the brain was normal, and a transient ischaemic attack was diagnosed. Her obstetric history was of three normal pregnancies with the last delivery in June 1985; menstruation had resumed after she had stopped breast feeding.

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A diagnosis of gestational choriocarcinoma should be considered in a young woman with metastatic cancer

Laparotomy showed a large retroperitoneal haemorrhagic tumour of the right kidney. A right nephrectomy was performed, and choriocarcinoma was diagnosed histologically. Her serum human chorionic gonadotrophin concentration was 33 200 IU/l, and enhanced computed tomography and magnetic resonance imaging of the brain showed a deposit in the left occipital lobe and haemorrhage in the thalamus.

She was treated with a course of etoposide, high dose systemic methotrexate and regular intrathecal methotrexate, actinomycin D, cyclophosphamide, and vincristine (the EMA/CO protocol).⁴ The human chorionic gonadotrophin concentration fell to normal and the metastases resolved. She completed treatment in August and remained symptom free.

Case 2

A 45 year old woman presented with anaemia and signs of pneumonia in May 1986. Bilateral cannonball pulmonary metastases were seen in a chest radiograph. There was a suprapubic mass that on ultrasonography was partially cystic and thought to be either a uterine or ovarian tumour. She was premenopausal and was not using contraception. She had three children, and the last known pregnancy had been seven years earlier.

Because she was too ill for general anaesthesia daily cyclophosphamide was started. She became severely anaemic and was found to have a bloodstained vaginal discharge. Treatment with prednisolone and progestogens was started, and a diagnostic uterine curettage was performed. Tumour was found in the curettings, which was immunocytochemically positive for human chorionic gonadotrophin. The serum human chorionic gonadotrophin concentration was 465 000 IU/l.

She received combination chemotherapy (EMA/CO) for six months. The human chorionic gonadotrophin concentration became normal, and the tumour masses regressed completely. She was well six months after completing treatment.

Case 3

A 31 year old woman had irregular vaginal bleeding after a normal delivery in October 1985. This was not improved by hormonal treatment, which was started in February 1986. In March she was admitted with acute abdominal pain. The only abnormal finding was a large haematoma surrounding the right kidney, and a nephrectomy was performed. Histological examination did not show any definite disease. She was readmitted eight weeks later with diarrhoea and abdominal pain; on examination there was a large abdominal mass extending from the pelvis to the umbilicus. She had atrial fibrillation; the urea concentration was 42 mmol/l and creatinine concentration 507 μ mol/l. A pregnancy test gave a positive result.

A choriocarcinoma was diagnosed provisionally and chemotherapy started immediately. The serum human chorionic gonadotrophin concentration was 999 872 IU/l. Her condition deteriorated, and she died six days later. A necropsy confirmed the diagnosis and showed metastases in the right lung, jejunum, liver, and left kidney. There was intraperitoneal bleeding and pulmonary oedema.

Discussion

These three patients were among the 19 referred to this hospital from other hospitals in the United Kingdom between September 1984 and September 1986 with gestational trophoblastic tumours who were at high risk⁵ of developing resistance to cytotoxic drugs; this affects about one quarter of all women who require chemotherapy for gestational trophoblastic tumours.⁶ Most of these patients had no history of a molar pregnancy, and six of the 19 presented with non-gynaecological symptoms (table).

This centre has treated more than 1200 patients with trophoblastic tumours since 1958 and has a 93% rate of cure in previously untreated patients in this high risk group.⁴ Although curettage is sometimes useful diagnostically, attempts to obtain a diagnosis by liver or lung biopsy can be lethal as these tumours are extremely vascular. Delayed diagnosis or inappropriate treatment may result in irreversible complications or contribute to late drug resistance. The practice in the United Kingdom of referring patients to one of the two centres for specialist treatment (in Sheffield and London) has contributed greatly to the successful treatment of this disease.

The human chorionic gonadotrophin concentration is easily

Presentation of patients with high risk gestational choriocarcinoma over two years ending September 1986

Clinical presentation	No of patients
Gynaecological symptoms:	
Bleeding	12
Non-gynaecological symptoms:	
Headache and hemiparesis	2
Transient ischaemic attack	1
Haematuria	1
Hepatomegaly	1
Pneumonia or haemoptysis	2
	19

measured. Although it may be raised in the presence of germ cell tumours of the ovary and some non-trophoblastic tumours,⁷ a raised concentration in a young woman with evidence of metastatic malignancy or prolonged vaginal bleeding post partum should alert the doctor to the possibility of choriocarcinoma.

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DOCTORS IN SCIENCE AND SOCIETY

John Hunter

Hunter lived in London after the Treaty of Paris brought an end to the Seven Years' War in 1763, devoting himself to the practice of surgery, teaching and dissecting at the anatomy school, and amassing and developing the extraordinarily rich collections that are preserved at the Royal College of Surgeons in London. He interested himself in an immense variety of activities in biological science, ranging from the transplantation of teeth to the Gillaroo trout and "Observations on the Fossil Bones presented to the Royal Society by the Margrave of Anspach." No man of his time did so much in so wide an area of biology. Committed to earning his "damned guinea," as he put it, as a surgeon, he brought science to an essentially pragmatic area of medical treatment. The experiments that led him to ligate the popliteal artery for aneurysm, together with his constantly thoughtful approach to surgical problems, earned him the largest surgical practice in London and the posthumous reputation of being the founder of scientific surgery.

Yet his contributions to the practice of surgery formed a relatively minor part of his scientific achievements. He is one of the very select band of surgeons who have been awarded the Copley medal of the Royal Society. That body, ever aware of the significance of scientific contribution, made their award not for his surgical work but for his three papers—"On the Ovaria," "On the Identity of the Dog, Wolf and Jackal," and "On the Anatomy of Whales"—which were published in the *Philosophical Transactions* in 1787. It can perhaps be argued that John Hunter's major contribution to those who practise surgery was the demonstration that a surgeon, unversed in the ancients, could be one of the foremost biological

scientists of his age. As one of his contemporaries put it, "he alone made us gentlemen."—CHRISTOPHER BOOTH.

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Clay tennis courts if not adequately watered and rolled will produce dust that gets on to players' clothes and is inhaled. Are there any dangers from inhalation?

This, and similar questions, may be approached in two ways. On the one hand, what is the composition of the dust, its particle size, and the duration of exposure (hours a week on the court), and, on the other, what information is available about occupational chest disease among people exposed to such dust, especially those with heavy exposure? In the United Kingdom so called "clay" courts are usually covered with a layer of red brick dust. This is generally medium or fine, the former having only 12% of particles less than 75 μ m diameter and the latter up to 20% of particles in that size range. (Does the fact that smaller sizes have not been categorised suggest that there has been no cause to do so? Perhaps no cases have been reported.) Red brick dust, unlike refractory brick dust, contains practically no silica. The average exposure on a tennis court is probably a few hours a week, while even professional players are unlikely to be on clay courts 40 hours a week for 50 weeks a year. The dust from red bricks is considered not to harm workers engaged in the manufacture, use, or destruction of bricks. We have seen no cases and know of no published reports of chest disease among other users, such as tennis players.—W R LEE, professor and A R SCOTT, lecturer in occupational health, Manchester.