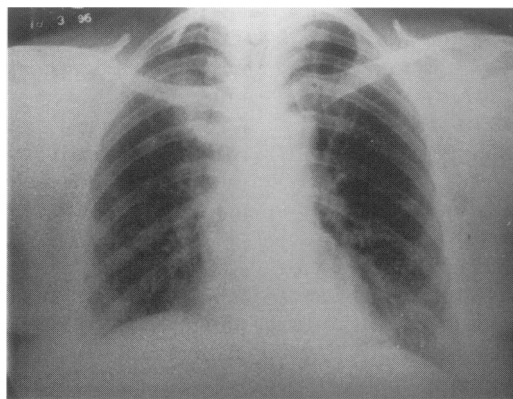


## Abnormal chest X-ray in a patient with carcinoma of the cervix

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A 57-year-old woman presented with complaints of dry cough and dyspnoea on exertion, class III, of one-month duration. She did not have any haemoptysis, chest pain, fever, loss of appetite, loss of weight, haematuria, discharge from vagina, bone pains or jaundice. She had a history of carcinoma of the cervix diagnosed five years earlier and had been treated at another hospital with panhysterectomy followed by radiotherapy to the pelvic area. The tumour had been reported as adenocarcinoma on histopathology. She remained symptom-free for the next five years.

Systemic examination, including a gynaecologic evaluation, was unremarkable except for the presence of a few coarse crepitations at the right infrascapular area. The chest X-ray is shown in the figure.



### Questions

- 1 What two abnormalities are shown on the chest X-ray?
- 2 What is the most probable diagnosis?

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**Figure** Chest X-ray, postero-anterior view

## Answers

### QUESTION 1

The chest X-ray shows reticulonodular shadows in the bilateral lung fields, and right paratracheal lymphadenopathy. A number of diseases can produce bilateral reticulonodular infiltrates on a chest X-ray (box 1).

### QUESTION 2

A biopsy specimen of the lung showed obstruction of pulmonary lymphatics with cells from an adenocarcinoma; the histology was identical to that of a biopsy from carcinoma of the cervix. A final diagnosis of adenocarcinoma of the cervix with pulmonary carcinomatosis lymphangitis was made.

## Discussion

Carcinoma of the cervix remains one of the most common tumours in gynaecological practice. Due to improved methods of screening, the mortality rate from this tumour has declined in the past few decades. It spreads characteristically to adjacent structures by contiguous spread and to the para-aortic lymph nodes by lymphatics.

### METASTASIS IN CERVICAL CARCINOMA

On long-term follow-up of patients with carcinoma of the cervix, the incidence of distant metastases has been reported to be 26.5% (322 of 1211 patients).<sup>1</sup> The most frequent sites of first metastasis included lungs (21%), lymph nodes (21%), bones (16%), abdominal cavity (11%), gastrointestinal tract (7%), and liver (4%).

Lungs are the most frequent sites of distant metastasis from cervical carcinoma with various reports indicating an incidence between 2% to 21% depending upon the stage of carcinoma.<sup>1,2</sup> The median time from cervical cancer diagnosis to lung metastasis in patients without initial lung metastasis has been reported to be 1.2 years.<sup>3</sup> The common symptoms reported in these patients with pulmonary metastases were cough (31.3%), dyspnoea

(16.7%), and chest pain, fever and sputum (8.3% each).

The pulmonary involvement is varied. Different patterns include multiple nodules, pleural effusion,<sup>2,4</sup> solitary pulmonary nodule,<sup>5</sup> endobronchial metastasis,<sup>6</sup> cavitary lesion,<sup>7</sup> and superior vena cava obstruction.<sup>8</sup> A reticular pattern suggesting lymphangitis is very uncommon. In 1970, Buchsbaum published the first case of pulmonary lymphangitis carcinomatosis from cervical carcinoma.<sup>9</sup> Since then, 16 more cases have been reported.<sup>10,11</sup> Because of the rarity of this disorder and its tendency to mimic other diseases, a diagnosis is often difficult to make and therefore, is often delayed. In the reported cases, diagnoses of pneumonia, pulmonary embolism and congestive heart failure were initially considered. In many patients, the diagnosis was made *post mortem*.

### PATHOGENESIS AND PATHOLOGY

The mechanism by which cervical carcinoma metastasizes to the pulmonary lymphatics is unclear. It has been postulated that cancer cells from the thoracic duct may reach the mediastinal and hilar lymph nodes and proliferate at these sites which results in blockade of lymphatic drainage from the lungs. Lymphangitic spread of tumour cells can then occur either by retrograde embolisation or proliferation within the lymphatics. Alternatively, intraperitoneal metastasis may lead to diaphragmatic seeding with subsequent involvement of the mediastinal and hilar lymph nodes.<sup>9</sup> In the present patient, there was no clinical evidence of intraperitoneal disease but she had hilar lymphadenopathy on computed tomography of the chest.

Interestingly, all the reported cases of cervical carcinoma who developed pulmonary lymphangitis carcinomatosis were of squamous cell carcinoma. However, in the present case, pulmonary lymphangitis carcinomatosis occurred from adenocarcinoma of the cervix five years after the initial treatment of cervical carcinoma.

### TREATMENT

The survival of patients with pulmonary lymphangitis carcinomatosis secondary to carcinoma of the cervix is very poor. Most patients die within six months of diagnosis. With the use of carboplatinum-based chemotherapy, it may be possible to increase the survival in such patients.

#### Bilateral reticulonodular shadows in chest X-ray

- idiopathic pulmonary fibrosis
- collagen vascular diseases (systemic lupus erythematosus, rheumatoid arthritis, systemic sclerosis, others)
- pulmonary vasculitis and granulomatosis
- radiation
- sarcoidosis
- hypersensitivity pneumonitis
- pneumoconiosis (asbestos, beryllium, silica)
- chemotherapeutic agents (busulphan, bleomycin)
- pulmonary haemorrhage syndromes
- pulmonary alveolar proteinosis
- pulmonary amyloidosis
- lymphangitis carcinomatosis

Box 1

#### Lymphangitis carcinomatosis: causes

- gastric carcinoma (most common)
- breast carcinoma
- primary lung carcinoma
- pancreatic carcinoma
- thyroid carcinoma
- prostatic carcinoma
- gall bladder carcinoma
- laryngeal carcinoma
- cervical carcinoma

Box 2

**Final diagnosis**

Adenocarcinoma of the cervix with lymphangitis carcinomatosa.

**Keywords:** adenocarcinoma, cervical carcinoma, lymphangitis carcinomatosa

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## A flaccid arm

K Raza, P King

A 58-year-old man presented in April 1996 with painless weakness of his left arm. Steele-Richardson-Olszewski syndrome had been diagnosed three years previously, causing increasing difficulty with mobility. He also had non-insulin-dependent diabetes, which was well controlled on metformin, with no diabetic complications. In February 1996 he fell, and sustained a left clavicular fracture, which was managed conservatively. Eight weeks later, he developed weakness of the left arm which gradually worsened over two weeks. He was otherwise well, with no weight loss, respiratory symptoms, or recent immunisations, and was a non-smoker.

On examination, there was a swelling over the mid third of the left clavicle. The left arm was flaccid and areflexic with grade 3/5 power in all muscle groups. Vibration and joint position sensation were impaired. There was no discoloration or swelling, and temperature and pulses were normal. The only other findings were of increased tone and bradykinesia in the right arm and lower limbs, which together with restriction in gaze and reduction in facial movements were consistent with a diagnosis of Steele-Richardson-Olszewski syndrome. The plantar responses were flexor.

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### Questions

- 1 What is the most probable site of the lesion?
- 2 What is the most probable pathology?
- 3 How would you investigate this patient?