# BRIEF REPORT

## PRIMARY CHORIOCARCINOMA OF THE MEDIASTINUM

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**Summary**

A case of primary choriocarcinoma of the mediastinum in a 22 year old man is reported. This would appear to be the 14th such case recorded.

**Case Report**

A 22-year old policeman was admitted to hospital on the 11th Oct. 1976 with a history of sudden left sided chest pain. The pain subsided in hours, but over the next 10 days, before admission, he complained of a harsh cough, with small amounts of frothy sputum and increasing dyspnoea. There was no previous history of illness and he had had a normal chest radiograph one year previously.

On examination he was acutely ill, dyspneoic at rest with pyrexia of 103°F (39.4°C). The pulse rate was 120/min, respiration rate 40/min and gynaecomastia was noted.

Multiple chest radiographs were done between 2nd Oct. 1976 and 1st Nov. 1976 (Fig. 1). These showed a large opacity lying anteriorly in the right lower zone which was well defined and was probably extrapulmonary, arising either from the pleura or the mediastinum. Further multiple fluffy opacities developed in both lung fields; these varied in size but some attained 3-4 cm over a period of 10 days from 2nd Oct. to 12th Oct. 1976. There was a right pleural effusion, aspiration of which yielded blood stained fluid in which malignant cells were not identified.

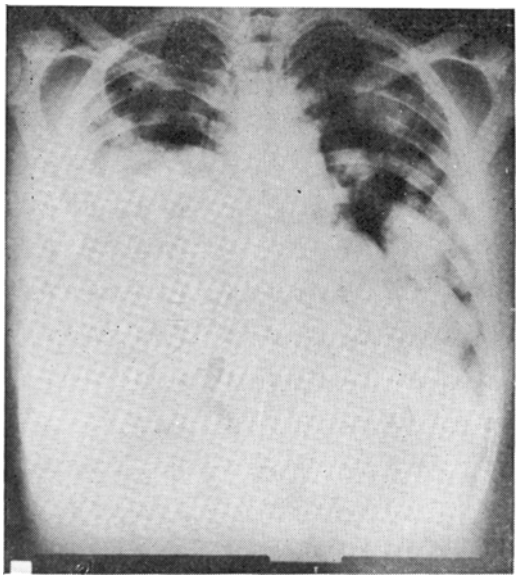

Fig. 1—Chest X-ray showing a large tumour mass in the right chest cavity and multiple fluffy tumour nodules in the left chest.

At bronchoscopy the cords were normal and the trachea was pushed forward, the middle lobe and basal bronchi were compressed with slit-like openings but the left bronchial tree appeared normal.

A biopsy from the middle lobe showed normal mucosa. A scalene node biopsy showed no evidence of lymphoma or carcinoma. An intravenous pyelogram was normal.

On the 14th Oct. 1976, a pericardial friction rub was noted and the next day cardiac tamponade developed. Three hundred and forty ml of blood-stained fluid was aspirated. The patient went rapidly downhill and died 3 weeks after admission.

**Post-Mortem Findings**

Removal of the sternal plate, revealed a large 10 cm soft haemorrhagic necrotic tumour mass, situated in the superior mediastinum, and encroaching laterally to compress and replace the right lung. Multiple soft haemorrhagic tumour nodules averaging 4 cm in diameter were present through the parenchyma of the left lung (Fig. 2). Tumour encased the pericardium and invaded it.

A single 2 cm tumour metastasis was found in the liver. Sectioning of both testes revealed a pale parenchyma; no primary tumour focus or scar could be found. Examination of secondary sexual characteristics revealed absent axillary and scanty pubic hair, with moderate gynaecomastia. Examination of the brain and pituitary gland showed no abnormality. Histological examination showed a very necrotic tumour with little viable material on which to make a diagnosis. However, a section taken through the liver metastasis revealed the typical morphology of a choriocarcinoma (Fig. 3). Clusters of tumour giant cells, with pink cytoplasm typical of syncytiotrophoblastic

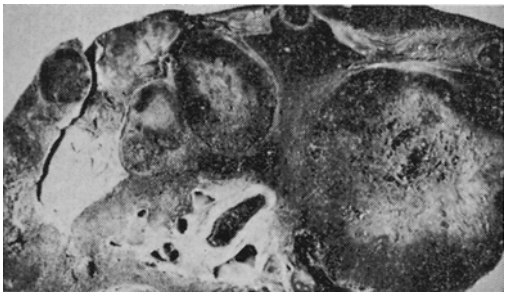

Fig. 2—Multiple tumour nodules replacing most of the parenchyma of the right lung.

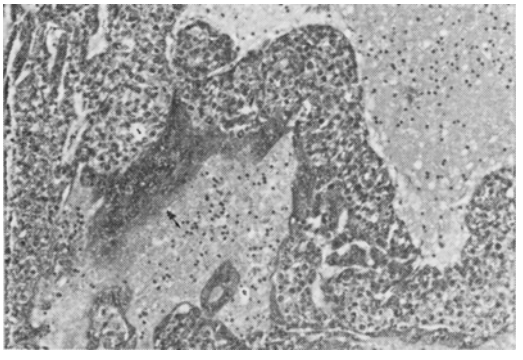

Fig. 3—Choriocarcinoma; note prominent tumour syncytial trophoblastic giant cell (arrowed). Haematoxylin and eosin. X 400.

cells were noted. Cytotrophoblastic cells with clear cytoplasm were also present. Sections through the testes showed atrophic tubules and Leydig cell hyperplasia but no microscopic evidence of a primary tumour was identified.

Human chorionic gonadotrophin was demonstrated immunohistochemically (Fig. 4) in the syncytiotrophoblastic tumour cells using an immunoperoxidase technique (Sternberger *et al*, 1970).

Blood taken 2 weeks before death and held in the deep freeze was sent for HCG radioimmunoassay to Searle Laboratories, London, where a titre of 350,000 I.U. was found.

**Discussion**

Primary choriocarcinoma of mediastinum is an exceedingly rare tumour. In a review of the literature in 1974, Sickles *et al* found only 10 proven cases. Since then, to the best of our knowledge, only 3 new cases have been added

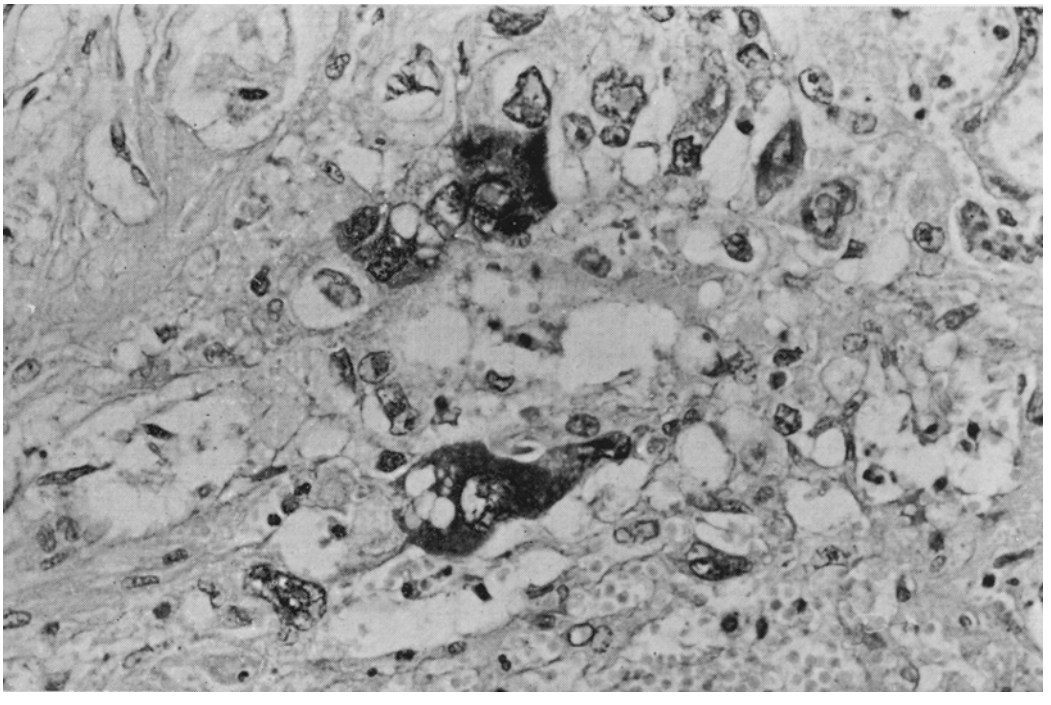

Fig. 4—Synctiotrophoblast of the tumour stained to demonstrate human chorionic gonadotrophin (darkly-staining material). Immunoperoxidase method. X 400.

(Johnson *et al*, 1973; Storm *et al*, 1976; Forest *et al*, 1977). To establish its authenticity, it is necessary first to exclude a primary tumour of testis that might have metastasised to the mediastinum and lungs. Current opinion concerning the histogenesis of this tumour favours an origin from germ cells (Brown, 1976). Germ cells first appear in the embryonic yolk sac, from whence they migrate to the genital ridge on the posterior abdominal wall where they become absorbed into the developing gonad. During this migration, the germ cells may stray or get left behind at various sites along the midline of the embryo. Tumours arising from these cells can be found in the pineal region, mediastinum, retroperitonum and sacrum. These tumours have been shown by Greenwood *et al* (1971) to produce both steroids (oestrogens, progesterone) and protein hormones, human chorionic gonadotrophin (HCG) and human chorionic somatomammotrophin (HCS) in abundance. Thus, a simple urine pregnancy test may be diagnostic in a male, if feminisation is noted clinically. HCS is a protein hormone, produced by the normal placenta and has properties similar to prolactin. It is this hormone, in association with oestrogens, which is responsible for the prominent gynaecomastia seen in male patients with this tumour.

**References**

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