Metastatic Pulmonary Melanoma of 15 Months’ Duration

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The lung is a common site for metastatic foci from extrapulmonary malignancies. Abrams found the lung involved, metastatically, in 46.5 per cent of 1,000 autopsied cases of carcinoma. On the basis of radiographic evaluation, Pendergrass estimated the incidence of pulmonary metastases from all carcinomas to be 30 per cent and as high as 75 per cent from renal cancer. In general, the secondary deposits in the lung appear on the roentgen film as bilateral, multiple, rounded shadows of varying size and are the result of hematogenous embolic spread. The primary tumors usually associated with this type of lesion arise from the thyroid, genitourinary tract, intestinal tract and bones.

Malignant melanoma commonly involves the lung by way of vascular spread but the relative rarity of the tumor usually precludes its inclusion in the differential diagnosis of pulmonary lesions. In a radiographic study of 314 cases of pulmonary metastases, Minor found 15 secondary to melanoma. The average time that elapsed between the onset of the primary lesion and the appearance of pulmonary metastases was 32.5 months and the interval between appearance of the metastases and death was 4.1 months. Most of the patients with melanomatous pulmonary deposits are diagnosed in the preterminal stages of the disease. The following case of malignant melanoma is therefore of unusual interest in that there was roentgen evidence of extensive metastases 15 months prior to death, during the greater part of which time the patient was completely asymptomatic. The diagnosis of melanoma was established 14 months after the initial roentgen observation of the pulmonary nodules.

The patient was a 61 year old, white clerk who presented himself at the Union Health Center on August 22, 1952 for a routine check-up. There was no significant complaint. With the exception of post-nasal discharge of 20 years' duration he had enjoyed excellent health. The past history revealed an appendectomy at age 15. His parents had died of heart disease in the eighth decade. Three brothers were alive and well. His appetite was good; bowels were regular, once daily; there was no genito-urinary or cardiovascular symptom. The physical examination and routine laboratory studies of the blood and urine were negative. A routine chest x-ray film (Figure 1) disclosed several large round nodules involving both lung fields. A tentative diagnosis of metastatic carcinoma was made and he was referred to the Memorial Hospital for further study.

A comprehensive examination was made at the Memorial Hospital and repeated at the Mount Sinai Hospital. Roentgen examination of the genito-urinary tract, entire intestinal tract, gall bladder and bones failed to reveal a primary lesion. Bronchoscopy and esophagoscopy were negative. Cytologic examination of the sputum, bronchial washings, gastric washings and urine were negative. He was advised to undergo exploratory surgery of the thorax and the abdomen on different occasions but refused. Between hospital and clinic visits he continued working and had no complaint other than the anxiety induced by the medical interest in his condition.

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FIGURE 1: Routine chest film, August 22, 1955, showed large nodular densities in both lung fields. No pulmonary symptoms. (Courtesy of The Union Health Center.)—Figure 2: Films on October 5, 1956 (14 months later) showed a slight increase in the rounded densities previously observed. No pulmonary complaints during the interval between films.

Examination by one of us (M. B. R.) on May 1, 1956 found him to be well developed and nourished with evidence of recent weight gain. There were multiple pigmented nevi distributed over the thorax. The pupils reacted to light and accommodation and the external ocular movements were normal. The nasopharynx appeared negative. There were no palpable cervical or axillary nodes. The thorax was symmetrical, breath sounds vesicular and percussion note unimpaired. The cardiac outline was within normal limits, the sounds were of good quality, regular sinus rhythm, no murmur, ventricular rate of 80 per minute. The blood pressure was 140/80. There was a post-operative scar on the abdomen. The liver and spleen were not palpable. Rectal examination was negative. There was no peripheral edema. The reflexes were active and equal, bilaterally.

FIGURE 3: Metastatic melanoma of lung showing the marked anaplasia.
Roentgen examination of the chest showed no definite change in the number or size of the shadows seen on the film of August 22, 1955. The electrocardiogram showed left axis deviation. The sedimentation rate was 35 mm. per hour (Westergren). The blood count revealed hemoglobin of 82 per cent, 4,400,000 red blood cells, 8,750 white blood cells with normal differential. The urinalysis was negative. Intradermal tests were negative for coccidiomycosis and positive for histoplasmosis. Papanicolaou smears of the sputum were negative. The gastric washings were negative for tubercle bacilli.

He had no complaint until October 1956 when he suddenly became aware of spasmodic twitching of the right shoulder muscles and of the tongue. This was followed by weakness in the lower extremities, right hemiplegia and dysarthria. The pulmonary status was unchanged clinically and the roentgen examination (Figure 2) showed slight increase in the diameter of the nodular densities previously observed. He was admitted to the neurologic service of the Mount Sinai Hospital where a small pigmented area was noted on the lower lip near the buccal mucosa. Biopsy revealed the lesion to be a malignant melanoma. He was transferred to the Doctors Hospital on November 19, and died on November 26, 1956 after a series of convulsive seizures.

Necropsy examination revealed metastatic melanoma of the lungs, adrenals, jejunum, ileum, colon, ribs and brain. Gross inspection of the lungs showed tumor masses scattered throughout all the lobes. The masses were colored dark brown, were firm in consistency and measured up to 4.5 cm. in diameter. The right upper lobe contained one mass, the middle lobe had two, and the lower lobe four masses. The left upper lobe and lower lobe had four and five masses, respectively. The intervening parenchyma appeared normal. There was mild hyperemia of the trachea and main bronchi.

Microscopic examination showed the pulmonary masses (Figure 3) to consist of extremely bizarre cells having a spindle appearance and displaying anisocytosis, macronucleation, hyperchromatism and mitoses. There were focal areas of nests heavily pigmented by melanin. The non-tumorous portions of the lungs were normal.

The tumor masses in the adrenals were similar to those in the lungs and occupied the entire thickness of the cortex. In the intestinal tract, the tumors involved the muscle and submucosa and were about 2 cm. in size in the jejunum and ileum and smaller in the colon. The marrow of the third and fourth left ribs was diffusely brown to black and presented a striking appearance. The vertebrae were normal. The brain was deeply pigmented with the same cellular changes. In the cerebellum, the lesions were limited to the cortical gray and were characterized by necrobiosis and hemorrhage.

In all probability, the primary site of the melanoma was the lesion in the mouth, although this was not suspected for 14 months after the pulmonary metastases had been recognized. The large number of pigmented nevi scattered over the thorax probably contributed to the diagnostic confusion. It is also possible that in the course of the convulsive seizures, he had bitten his lip and drawn attention to the small pigmented area. According to Pack1 and Moore,2 the oronasal region is an infrequent primary site for malignant melanoma, comprising approximately 2 per cent of the total. Origin from the lips is extremely uncommon.

REFERENCES