Teaching Chest Disease*

The Coin Lesion

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The "coin lesion" can be defined as any lesion which, on x-ray film of the chest, presents a peripheral well circumscribed shadow. It has been a difficult problem for the clinician because such a lesion may represent the most malignant or the most benign type of disease.¹

In presenting this problem to a group of students, the following technique has been used successfully. First, x-ray films portraying a typical coin lesion are demonstrated. There may be six or eight films all showing a similar lesion. The students are asked to write down their diagnoses and then one film is picked from the group as an example. One will usually find that there are several diagnoses from the group for any one particular lesion. The student is asked to justify his diagnosis, and it soon becomes apparent that this justification can apply to any of the other lesions presented and that another student can equally well justify a different diagnosis. In short, the students now realize that it is impossible to differentiate one coin lesion from another.

They are then asked to list the various disease processes which could cause such an x-ray shadow. Such a typical list includes:

- Bronchogenic carcinoma
- So-called bronchial adenoma
- Tuberculoma
- Hamartoma
- Inspissated tuberculous cavity
- Coccidioidomycosis
- Histoplasmosis
- Abscess
- Hemangioma
- Arteriovenous fistula
- Encapsulated effusion
- Mesothelioma
- Encapsulated foreign body
- Bronchogenic cyst
- Other rare tumors (lipoma, fibroma, leiomyoma)
- Sarcoma of the lung (rare)
- Metastatic tumor

Having developed such a list, the prognostic implications and, therefore, the surgical considerations become obvious to the group. With the exception of a true tuberculoma and similar forms of fungus disease, all are most adequately handled surgically.

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It has already been agreed upon by the group that with the demonstrated x-ray film any of the listed diseases is a possibility. Now, what are the further examinations which will help us in our differential diagnoses? Bronchoscopy will very seldom be of any value because the lesion is peripheral and, therefore, beyond the area which may be visualized with the bronchoscope. Sputum examinations may be of some value if positive either cytologically or bacteriologically. They are of no value if negative. Skin tests for tuberculosis and fungus disease are usually helpful if negative, but a positive reaction does not necessarily indicate the pathogenesis of the lesion. Further x-ray examinations will usually only serve to confirm the presence of a peripheral lesion, though lamination or focal calcification may be demonstrated.

The next question for discussion is the management of such a lesion. Is it safe to follow such a lesion with serial x-ray film examinations? One glance at the list the group has prepared will lead immediately to the realization that such a program is not safe in that malignancy is certainly a possibility. It, therefore, follows that the wise course to follow is thoracotomy with excision and immediate pathological examination. The further course of therapy can then be established on a firm basis.

REFERENCES