Bronchogenic Carcinoma Complicating Situs Inversus Totalis*
Report of a Case

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The percentage of occurrence of situs inversus totalis varies considerably with different reports in the literature. The incidence in the largest reported series of cases was a little more than one in 10,000. Complete situs inversus is more commonly found than dextrocardia without situs inversus or vice versa. Because of the x-ray finding of a pneumonic lesion in the right upper lobe, a patient with situs inversus was admitted to the Sanitarium.

Case Report

A 58-year-old white man was admitted to the Municipal Tuberculosis Sanitarium on August 26, 1960 in fair general condition with the chief complaints of weight loss and cough. He dated the onset of his pulmonary disease to early 1960, but it was not until June that he began to lose weight. A week prior to admission, he noticed pain in the right lower chest. His past history and family were not unusual. He stated that he smoked about one package of cigarettes daily.

At the time of admission, he was alert and in fair general condition. His blood pressure was 110 systolic and 76 diastolic mm. Hg. Physical examination revealed reverse cardiac dullness and liver dullness on the left side. A chest roentgenogram taken at the time of admission (Fig. 1) showed a dextrocardia and a sharply circumscribed pneumonic area in the right first and second anterior interspaces. This density contained several small radiolucencies.

A hemogram taken on admission showed a leukocyte count of 15,400 per cmm. with 69 per cent neutrophiles, 8 per cent eosinophiles, 16 per cent lymphocytes and 7 per cent monocytes. The erythrocyte count was 3,910,000 per cmm. and the hemoglobin level was 10.8 gm. per 100

Figure 1
Figure 2

Figure 1: Chest x-ray film at the time of admission shows the cardiac shadow on the right side and an infiltrate in the right first and second interspaces. Figure 2: Chest x-ray film taken on October 10, 1960 shows the infiltrates to be somewhat smaller with definite evidence of excavation.

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Repeated sputum smears and cultures were negative for tubercle bacilli, fungi and pyogenic organisms. The result of the serologic test for syphilis was negative. The reaction to the tuberculin test was positive in a 0.1 mg. dosage. Cytology studies of sputum and bronchial aspirates were negative for malignant cells.

Shortly after admission, treatment was begun with isoniazid, streptomycin and demethylchlorotetracycline (Declomycin). Bronchoscopic examination revealed the pattern to be reversed with a middle lobe orifice on the left side. No mucosal abnormality was noted. The scalene fat pad was taken from either side for biopsy and microscopic examination showed only minimal inflammatory change with anthracotic pigmentation.

His condition deteriorated in spite of therapy. A chest x-ray film taken about six weeks after admission (Fig. 2) showed some decrease in size of the pneumonic infiltrate, but further excavation of the lesion. Because of some complaints referable to the intestinal tract, an upper gastrointestinal x-ray series was ordered, but no abnormality other than the reversal of the pattern was noted. Right thoracotomy was recommended, but his condition did not permit any major surgical procedure. He expired on December 8, 1960 and permission for necropsy was granted.

Upon opening the body cavities transposition of all the organs was observed (Fig. 3). The right lung contained only two, whereas the left lung was made up of three lobes (Fig. 4). The visceral are arranged in the mirror image of their usual position.

FIGURE 3: Photograph taken at the time of necropsy. The viscera are arranged in the mirror image of their usual position.

FIGURE 4: Photograph of lungs and heart with aorta and great vessels. The aorta courses to the right of the trachea and the innominate artery can be seen crossing the trachea and pointing to the left. The left lung has three lobes.
SITUS INVERSUS TOTALIS

Figure 5: Photograph of a surface made by cutting through the posterior portion of the right lung. The tumor with central excavation can be seen.

The aorta passed to the right of the trachea and the pattern of the great vessels was reversed. A posterior dissection showed the bronchial pattern to be reversed with the left main bronchus exhibiting the more acute angle with the midline. In the posterior portion of the right upper lobe, there was a tumor mass measuring 6.0 cm. in diameter with an excavated central zone (Fig. 5). This tumor involved the overlying pleura and was adherent to the chest wall. Other findings included metastatic carcinoma to the liver and sixth rib and an ulcer 1.5 cm. in diameter in the second portion of the duodenum. The right spermatic vein emptied into the renal vein.

Comment

The importance of diagnosing situs inversus totalis is not because it is an anatomic curiosity, but rather because of the clinical significance. Ignorance of the condition may result in faulty diagnosis or misdiagnosis with serious consequences especially in those cases which require surgery. This is especially true of those patients suffering from cholecystitis and appendicitis. In one study, concerning surgical intervention in patients with situs inversus, 158 operative cases were summarized. Of this group, there were 99 operations for appendicitis and 24 operations for gall bladder disease. An error in diagnosis occurred in approximately 45 per cent of the cases. Transposition was recognized in 55 per cent of the cases prior to surgery.

No case of bronchogenic carcinoma complicating situs inversus was encountered in a review of the literature. Bronchiectasis is frequently encountered, especially as part of Kartagener's triad (situs inversus, bronchiectasis and chronic sinusitis). Because of the routine chest roentgenograms at the time of admission, situs inversus should not pose any problem in sanitarium patients.

References


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SCALENE LYMPH NODE BIOPSY

Three instances of major complications encountered during the performance of 350 biopsies are reported. These consisted of an almost fatal injury to the subclavian artery and two cases of air embolism. The injured subclavian artery was exposed by excising the medial half of the clavicle. Suture repair of the tear controlled the hemorrhage and reestablished a patent vessel. The patient recovered without circulatory embarrassment of the involved arm. The air emboli were treated by occlusion of the sucking wound in the injured veins, placing the patients in the left lateral decubitus position, and supportive therapy. Each patient made a gradual but complete recovery. It is cautioned that scalene lymph node biopsy is not a simple and harmless operation, for it may result in a complicated course or possible fatal outcome.