Arthralgia as a First Symptom of Pulmonary Lesions*

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It is the purpose of this communication to emphasize that arthralgia may be the earliest manifestation of hypertrophic pulmonary osteoarthropathy and consequently, at times, the earliest symptom of intrathoracic disease. That clubbing of the fingers is an early manifestation of hypertrophic pulmonary osteoarthropathy was suggested by Marie\(^1\) in 1890, Bamberger\(^2\) in 1891, and shortly after by Lefebvre,\(^3\) Thompson,\(^4\) Landis,\(^5\) and others. Locke,\(^6\) in 1915, determined conclusively that clubbed fingers are an early phase of hypertrophic pulmonary osteoarthropathy. "Simple clubbing of the fingers and secondary hypertrophic osteoarthropathy should be considered as identical, the former representing an early stage of the latter." He reiterated that in the majority of instances hypertrophic osteoarthropathy is secondary to a primary pathological process involving the organs of the thorax.

Van Hazel,\(^7\) in 1940, stressed the fact that joint manifestations, when occurring rapidly, in the absence of pulmonary symptoms, may be interpreted as arthritis. This error precludes an early diagnosis of the pulmonary pathology which may be a malignant neoplasm. Pain, although not always present in pulmonary osteoarthropathy, may be the first symptom of the process. This is of extreme diagnostic importance. Regarding this important point, the literature is deficient. Craig,\(^8\) Nef,\(^9\) Van Hazel,\(^7\) and Pavlovsky\(^10\) are among the few who have made the correlation.

Many cases are incorrectly treated for arthritis without the underlying pulmonary disease, frequently a tumor, being suspected. Three of Craig's\(^8\) cases were treated for rheumatism. Six of the seven cases collected by Van Hazel\(^7\) were treated for arthritis. Locke's\(^6\) first case had arthritis. Nineteen months before the first recorded pulmonary symptom, an hemoptysis, occurred. This case is an excellent example of arthralgia as the first symptom of hypertrophic pulmonary osteoarthropathy due to a carcinoma of the lung. Of course, in 1915, this was of academic interest only. Nevertheless, he failed to note the diagnostic value of the symp-

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toms. It was to be 18 years before the lesion was successfully dealt with.\textsuperscript{11}

The diagnostic importance of arthralgia as an early symptom of hypertrophic pulmonary osteoarthropathy is not mentioned in most textbooks of general medicine, monographs concerning symptom diagnosis, and treatises on chest diseases. Keller and Callender,\textsuperscript{12} Nef, Van Hazel, Brum,\textsuperscript{14} Pavlovsky and Poppe\textsuperscript{13} commented on the marked, often immediate relief of arthritic phenomena following resection of the offending lesion. This was striking in one of our cases.

An attempt was made to collect cases from the literature in which arthralgia was the first manifestation. Certainly these do not represent all of them, but the difficulty of such a task is readily appreciated when it is realized that many of the authors whose cases are presented did not note the temporal relation of the arthralgia to subsequent pulmonary symptoms. The specific joints involved are not mentioned for they were multiple and varied. Many of the patients listed were completely bedridden for months because of “arthritis.”

Case 1, Locke, 1915: A 32 year old white male who had arthralgia 19 months before the first pulmonary symptom, an hemoptysis, occurred. The case was proved to be a bronchogenic carcinoma by necropsy three years and 10 months after he first sought medical attention. There was marked clubbing of the fingers, and x-ray films showed evidence of periostitis of the long bones.

Case 2, Keller and Callender, 1930: A 38 year old Philippine female who had arthralgia 12 months. Symptoms and anatomical changes in the joints subsided after resection of a perineural fibroma weighing 660 grams from the pericardium of the right chest. She had marked clubbing of the fingers and toes.

Cases 3, 4 and 5, Craig, 1937: (3) A 58 year old white female who had arthralgia for seven months before the diagnosis of a neoplasm of the lung was made by x-ray. Clubbing was noted after five months of arthralgia.

(4) A 58 year old white male who had arthralgia and swelling of the joints three months before clubbing was noted and for 11 months before a diagnosis of carcinoma of the right lung was made by bronchoscopic biopsy. He was treated for arthritis for 11 months, and denied pulmonary symptoms during the first three months of his arthralgia.

(5) A 45 year old white male who had arthralgia and swelling of the joints for eight months before the diagnosis of carcinoma of the lung was made by bronchoscopic biopsy. Clubbing was noted one month after the onset of pain and cough occurred seven months later.

Craig suggests “that investigation of the lung should not be overlooked in patients with rheumatism or with changes in the joints appearing without known causes as well as in those with acromegaly.”
Case 6, Nef: An 11 year old white female who noted arthralgia and clubbing 12 months before a diagnosis of mediastinal tumor was made. Two months later a granulomatous xanthofibroma containing many lymphocytes and plasma cells was surgically removed. The patient experienced immediate dramatic relief from joint pains and fever. She had no symptoms referable to the chest at any time.

Case 7, Brum: An 11 year old white female who had malaise, fatigue, and failure to gain weight for four months followed by arthralgia and fever. Five months from the onset of symptoms, a diagnosis of a lung tumor was made by x-ray inspection of the chest. At no time did the patient have cough, sputum, or hemoptysis. The fingers were clubbed. A circumscribed tumor was resected from the right upper lobe and proved to be a myoma of the lung with lymphocytic infiltration. The patient's symptoms responded dramatically to its removal.

Cases 8, 9, 10, 11 and 12, Van Hazel: (8) A 46 year old white female who had arthralgia for one month which recurred one year later along with noticeable clubbing and cough. A diagnosis at exploratory operation of carcinoma of the lung was made two years after the onset of initial arthralgia.

(9) A 52 year old white female with arthralgia and swelling of the joints eight months before symptoms of "pressure in the chest" and dyspnea occurred. A diagnosis of pulmonary carcinoma was proved by biopsy. There were marked clubbing of the fingers and hypertrrophic pulmonary osteoarthropathy type of periostitis of the long bones of the upper and lower extremities on x-ray inspection.

(10) A 40 year old white female who complained of arthralgia, swelling and stiffness of the joints two months before the first pulmonary symptom of hemoptysis occurred. Five months after the onset, a right pneumonectomy was performed for carcinoma. There was dramatic, immediate relief of the arthralgia. Physical examination and x-ray films in this case demonstrated marked clubbing of the fingers and hypertrrophic periostitis of the long bones.

(11) A 32 year old female who noted stiffness, arthralgia and swelling of the joints seven months before an anterior mediastinal fibroma weighing 610 grams was removed. This was followed by dramatic relief of arthralgia. There was marked clubbing of the fingers on physical examination.

(12) A 74 year old female who had arthralgia, swelling and clubbing of the fingers eight months before a metastatic fibrosarcoma of the lung was diagnosed by x-ray examination. Pulmonary symptoms and cough appeared 10 months after the onset of arthralgia.

Case 13, Duncan: A 50 year old white male with arthralgia one year before death due to adenocarcinoma of the lung proved by biopsy. No mention was made of pulmonary symptoms. Physical examination revealed marked clubbing.

Case 14, Pavlovsky: An adult male presenting symptoms of arthralgia. No pulmonary symptoms noted. Because of the patient's clubbing, a chest x-ray film was taken and an adenocarcinoma of the lung found, which was resected. There was dramatic immediate postoperative relief of pain.
Case 15, Lopez: A 43 year old white male who six months before entry to the hospital suffered arthralgic pains in the hands and feet followed shortly thereafter by fever. Two months later he developed pulmonary symptoms of cough and hemoptysis. At the time of entry to the hospital he exhibited clubbing of the fingers and toes and necropsy revealed carcinoma of the right lung.

Case 16, Berg: A 51 year old white male whose first complaint was pain in the legs. A diagnosis of rheumatic fever was made and three months later a chest x-ray film revealed a circumscribed opacity in the right upper lobe. A right pneumonectomy was performed for an adenocarcinoma of the lung. There was immediate relief of arthralgia postoperatively. He exhibited minimal or no clubbing of the fingers but x-ray films of the hands and tibia showed some evidence of periostitis.

Case 17, Berg: A 12 year old white female, congenital luetic, who entered a hospital complaining of arthralgia and swelling of the feet. Clubbing of the fingers and toes was noted. The patient was treated for arthritis. On July 9, 1946, because of progression of her arthritic process, a chest x-ray film was taken in the course of a routine work-up. Evidence of a lesion in the left upper lobe was seen. There was no pulmonary complaint at any time. On September 22, 1946, after a failure of x-ray therapy and sulfarsphenamine therapy, the patient was referred here and the left lung was removed for what appeared to be a malignant tumor. Section revealed it to be a cystic granulomatous mass of questionable pathology.

Case 18, Berg: A 53 year old white male who had arthralgia and swollen joints eight months before entry to the hospital. He denied all pulmonary complaints. He had received no therapy for his arthritis and while receiving hydrotherapy, the doctor noted clubbing of his fingers and toes and had an x-ray film taken of the chest. This revealed a circumscribed shadow, 5 cm. in diameter, in the right lung which was resected with immediate dramatic improvement of the arthralgia postoperatively. There was an associated effusion in the right knee joint. The lesion proved to be a bronchogenic carcinoma.

Case 19, Berg: A 62 year old white male coal miner who complained of headache, pain in the neck, shoulder, left arm and leg migrating to the right arm and leg, associated with an effusion of the right knee, two weeks prior to entry. There were no pulmonary symptoms whatsoever. A diagnosis of fibrositis due to dental caries was then made. The referring doctor took an x-ray film of the chest in a routine examination and a hilar shadow was discovered. At operation, an undifferentiated carcinoma of the left lung was identified. The lesion was not resectable.

Case 20, Berg: A 49 year old white male who first noted arthralgia in November, 1946. He developed pain and tenderness in both knees and ankles. Two months later he observed clubbing of the fingers. One year before entry he developed a hacking cough. He had an hemoptysis six days before admission. At operation, an inoperable carcinoma was found in the left upper lobe.

SUMMARY

Arthralgia may be the earliest symptom of intrathoracic disease. The patient who presents this complaint should have a thorough
study of his chest including x-ray inspection. The surgical removal of an intrathoracic neoplasm often may bring about dramatic relief of such arthralgia.

RESUMEN

El primer síntoma de enfermedades intratorácicas puede ser la artralgia. A todo enfermo que se queje de este síntoma debe hacersele un examen completo del tórax, inclusive de radiografías. La excisión quirúrgica de una neoplasia intratorácica a menudo conduce al alivio espectacular de la artralgia.

REFERENCES