Chronic Friedlander's Pulmonary Infection Treated with Chloromycetin; Case Report*

HERMAN STEINBERG, M.D. and MILTON N. TOWBIN, M.D.
Jamaica, New York

The introduction in the past decade and a half of the sulfonamides and antibiotics in the treatment of bacterial infections has led to a variety of regimens in the therapy of Friedlander's pneumonia. Both the sulfonamides and streptomycin have been used with varying degrees of success. More recently auromycin has been employed with gratifying results. Among the newer antibiotics, chloromycetin has, to our knowledge, never been previously reported as having been used in clinical Friedlander's infections. Gill, in a recent report of the experience of the Pennsylvania Hospital with Friedlander's pneumonia, does not mention chloromycetin. Smadel, in a review of the clinical usage of chloromycetin, fails to mention its use in Friedlander's infections. Hewitt and Williams, reporting on their experience in the Massachusetts Memorial Hospital with chloromycetin in the treatment of various infections, present no data on the use of the antibiotic in Friedlander's infections. However, in vitro sensitivity studies of K. pneumonieae by the same investigators revealed that of 31 cultures, 25 were sensitive to less than five gamma per cc. of chloromycetin; three, to 5-10 gamma per cc.; one, to 10-50 gamma per cc.; and two to more than 50 gamma per cc.

Recently, we encountered a patient symptomatic with a chronic Friedlander's infection of the lungs, whose sputum cultures became negative, and who showed marked symptomatic improvement following chloromycetin therapy. Prior treatment with streptomycin and gantrisin had proved ineffective.

Case Report: F.H., a 58 year old white widow was admitted to the Queens General Hospital for epigastric pain of one week's duration. The pain was somewhat relieved by lying down, had no relation to meals and was associated with nausea. She reported a 25 pound weight loss over a period of a few years. Review of symptoms revealed chronic cough of many years' duration productive of a moderate amount of white mucoid sputum. No hemoptysis or night sweats. Physical examination revealed a moderately emaciated female with mild epigastric tenderness and bilateral medium-coarse, moist rales. Urinary examination was

*From the Department of Medicine, Queens General Hospital, James R. Reuling, M.D., F.A.C.P., Director.
Figure 1: Chest roentgenogram taken on third hospital admission following penicillin therapy, but prior to streptomycin-gentamicin and chloramphenicol therapy.

Figure 2: Chest roentgenogram following streptomycin and gentamicin therapy but prior to chloramphenicol therapy.

Figure 3: Chest roentgenogram following completion of chloramphenicol therapy.
negative. Blood count was as follows: Hgb. 11 Gms.; WBC 10,400 with 80 per cent polymorphonuclears. Erythrocyte sedimentation rate was 47 (corrected; Wintrobe). Sputum concentrates and cultures for tubercle bacilli were repeatedly negative. No smear or culture for predominating organism was recorded. Tuberculin test (1:1000) was positive. Gastric analysis revealed the absence of free HCL in the fasting specimen, but good acid response to histamine. Gastro-intestinal series was negative. Chest roentgenogram on October 14, 1947 was read as follows: "Lung fields are emphysematous. There is noted considerable accentuation of the lung markings in the right lower lobe. Lung structure in this zone has somewhat of a sponge appearance. The right costo-phrenic angle is blunted. Minimal calcific infiltration is present in the right lung apex." Repeat chest roentgenogram on November 7, 1947 showed no change. Her course was marked by afternoon rises in temperature to 100-100.5 degrees F. The abdominal symptoms responded to ant-acid therapy. No therapy was prescribed for the lung disease, and she was discharged on the 48th hospital day.

Two years later this patient was again admitted to the hospital for "weakness." For a few weeks prior to admission she had been troubled with an exacerbation of chronic cough. She had lost 20 pounds since the last admission. Anorexia was marked. A course of penicillin administered by nebulizer immediately prior to admission had not alleviated her symptoms. Past history on this occasion revealed an attack of "pleurisy" 25 years previously, and bilateral otitis media 12 years ago, which left her partially deaf. Physical examination revealed marked emaciation and bilateral, medium-coarse; moist rales, most marked on the right side of her chest. Urine examination was negative. Hgb. 12.9 Gms. WBC 16,500 with 82 per cent polymorphonuclears. Repeated smears and cultures of the sputum for tubercle bacilli were negative. Chest roentgenogram was reported as follows: "Both lung fields reveal generalized increase in broncho-vascular markings with enlargement of hili and pronounced accentuation towards the bases, much suggestive of honeycombing. There is obliteration of the right costo-phrenic angle due to thickened pleura." She ran a febrile course (to 102.5 degrees F.), which responded to penicillin. She was discharged 10 days following admission, moderately improved. No follow-up chest roentgenogram was obtained. Following discharge, reports of two sputum cultures were received, each positive for both B. Friedlander-group A and streptococcus viridans.

Two years later this patient was again admitted to the Queens General Hospital for chills, fever, headache and exacerbation of a chronic cough, of three day's duration. In the time that elapsed since her previous admission, she had continued to be troubled by a chronic cough productive of moderate amounts of mucoid, white sputum. Physical examination revealed a well-developed, markedly emaciated, elderly woman, who appeared to be both acutely and chronically ill. Temperature on admission was 101.6 degrees F. Fine, moist rales were present over both lung fields, anteriorly and posteriorly, most marked in the bases. Examination of the urine was negative. Hgb. 12.0 Gms. WBC 12,700 with 81 per cent polymorphonuclears. Fasting blood sugar 104 mg. per cent. Blod urea nitrogen was 10 mg. per cent. One blood culture was positive for staphylococcus aureus, coagulase negative. Following 48 hours of penicillin therapy (100,000 units every three hours), she evidenced moderate symptomatic improvement with a drop of temperature to 100.5
degrees F. Chest roentgenogram (Figure 1) taken at this time revealed the bilateral fibrosis and honeycombing seen on the film of two years ago, with superimposed diffuse soft infiltration in both lower lung fields. During the next three weeks five sputum specimens were reported as positive for B. Friedlander-group A in pure culture. She was therefore started on streptomycin, one gram daily in divided doses, plus gantrisin, one gram every six hours. Following three weeks of such therapy, the cough diminished, sputum production became minimal and her appetite improved. However, the temperature curve continued to show afternoon spikes to 100.5 degrees F., and multiple sputum cultures (gastrics) continued to be positive for B. Friedlander-group A. Repeat chest roentgenogram revealed no change (Figure 2). Sensitivity studies (in vitro) at this time proved that the organism was sensitive to chloromycetin in concentration of 0.2 gamma per cc.; to terramycin in concentration of 0.8 gamma per cc.; and to aureomycin in concentration of 5.0 gamma per cc. Chloromycetin was administered in doses of 500 mg. every six hours. During a three week course of therapy, her cough and sputum disappeared; there was marked improvement in appetite; and she volunteered a definite sense of well-being. However, her temperature continued to occasionally rise to 99.8 degrees F. in the afternoon. Sputum cultures (gastrics) obtained in the third week of therapy were negative. Two weeks following cessation of chloromycetin therapy, three consecutive sputum cultures (gastrics) proved again to be negative and the patient's remarkably improved clinical state continued. Chest roentgenogram at this time revealed complete regression of the soft infiltrative lesions and marked diminution of the bilaterally accentuated broncho-vascular markings (Figure 3). Repeated cultures for tubercle bacilli were negative.

Comment: This patient's course was unique for one with chronic pulmonary Friedlander's infection in that the pathology, as far as could be determined by chest roentgenogram, was that of fibrosis, emphysema and bronchiectasis rather than abscess formation. Although it has been claimed that the Friedlander bacillus is sometimes found in cases of bronchiectasis, where its significance is doubtful because it is only one of several organisms in the sputum, it seems likely that in our patient this organism was actually an active agent in the production of symptoms. Firstly, the disappearance of the bacillus from the sputum was accompanied by marked clinical improvement; and, secondly, no other organism was cultured from the sputum. However, the establishment of an active Friedlander's infection superimposed upon an old non-specific bronchiectasis cannot be ruled out.

The efficacy of chloromycetin in eradicating the Friedlander's infection, despite prior failure with streptomycin and gantrisin, is in accordance with the in vitro studies of Hewitt and Williams.

ADDENDUM: Since acceptance of this paper for publication, Kirby and Coleman have reported successful treatment with chloromycetin of two cases of Friedlander's pneumonia.
A case of chronic pulmonary Friedlander's infection, successfully treated with chloromycetin, following failure of combined streptomycin and gantrisin therapy, is described.

RESUMEN
Se describe un caso de infección pulmonar crónica por bacilo de Friedlander, que fue tratado con éxito con cloromicetina, después de haber fallado la estreptomicina y gantrisina combinadas.

RESUME
Un cas d’infection pulmonaire chronique à bacilles de Friedlander a été traité avec succès par la chloromycétine. Ce traitement efficace avait été institué après l’échec d’un traitement combiné de streptomycine et de “gantrisine.”

REFERENCES