SUMMARY AND CONCLUSION

With the advent of recent antimicrobial therapy , the incidence of empyema is decreasing due to control of chest infection before its development . Inspite of this, the incidence of empyema in rural areas like our countries is still relatively high. This may be due to the poor nutritional status, the high incidence of infective respiratory diseases and fevers, and the inadequate medical facilities in rural areas. Most cases occur in the months from December to April corresponding with the seasonal incidence of respiratory infections and common exanthemas of childhood period. Empyema is more common with young ages, most cases occur during infancy, then the incidence is decreasing with increasing age. During infancy, empyema is of equisexual distribution, but with increasing age in paediatrics , it is more common in males than in females as males are more exposed to infection due to their wide range of activity in our countries .

Most cases of empyema came with history of preceding respiratory infection with or without intermission period. The onset may be gradual but most commonly acute and follow progressive course. Absence of preceding infection does not exclude empyema. The commonest symptoms were respiratory distress and dyspnea, cough , irregular fever and grunting respiration . Other symptoms were : anorexia, loss of weight, chest pain or cyanosis. The symptoms may last

from one to four weeks before attendance to the hospital.

Most patients gave past history of recurrent attacks of respiratory infections. Many of them were exposed to fevers before , the most common of which was measles which was complicated in several cases by severe respiratory infection and may be empyema. Few cases gave history of similar attacks.

Immunization play an important role in prevention of many fevers and infective diseases. Most of our patients were not immunized or incompletely immunized before.

The social status play an important role in our problem. Ignorance of the parents, the big family size, the insufficient income, the poor housing and the bad enviromental conditions provide the medium for the poorly nourished child to have infection which may be complicated by more severe conditions like empyema.

The commonest signs in our patients were : restriction of respiratory movments, dullness on percussion, diminshed to absent respiratory sounds, all were on the affected side of the chest ; and tracheal displacment to the other side. Empyema was more frequent on the left than on the right side. Other signs were : fullness of the intercostal spaces on the affected side, rales and or renchi may be heard over the affected or both sides in cases with severe chest infection, or pallor. Empyema may be associated with other conditions as : measles, gastro - enteritis, hepatosplenomegally,

kwashiorkor, marasmus, congenital heart disease or heart failure.

Roentgenographic examination revealed a radiological evidence of empyema. Obliteration of the costophrenic and cardiophrenic angles was a constant sign evident in all cases. Few cases, with opacity of the lower portion of the lung field ascending to the axilla were diagnosed as small empyema. Most cases, with diffuse homogenous density obliterating all the lung markings on the affected side with shifting of the trachea to the other side were diagnosed as large or massive empyema. Few cases with fluid level were diagnosed as pyopneumothorax.

Thoracentesis revealed a more or less frankly purulent fluid which was yellow and thin in most cases, but may be thick and yellow or greenish in others. Few cases gave serous or serosangious fluid. Culture of the fluid was sterile in many cases, this may be due to : the adminstration of antibiotics prior to admission or the inaccurate laboratory methods. In cases with positive culture, the predominant isolate was staphylococcus aureus, other organisms were streptococci and pneumococci .

Anaemia was one of the predominant laboratory finding in our patients, the mean hemoglobin concentration was 8 gm./dL. and R.B.Cs. count was nearly 3.000.000. Leucocytosis with increase of polymorphnuclears was evident in most cases, the mean leucocytic count was 14.000 and polymorphnuclears

was 76.5% . Failure of the white cells to rise was evident in debilitated and malnourished cases and this was a bad prognostic sign in empyema.

The diagnosis of empyema in rural areas depends to a large extent on the background exercise and common sense. Empyema was suspected in every patient with pneumonia who fails to respond to adequate treatment. The diagnosis was determined by the clinical course, physical examination , radiological examination, thoracentesis and blood picture. The main item in the establishment of the diagnosis in the hospital was the evacuation of pus from a patient who was suspected clinically and radiographically to be empyema. Culture was needed only in few cases in which the fluid was not apparently purulent. Blood picture was useful in doubtful cases when the fluid was thin and serous or the culture was sterile. Leucocytosis with increase of polymorphnuclears makes the possibility of infection as a cause of pleural fluid the more probable.

Multiple needle aspiration with intrapleural instillation of crystalline penicillin was the routine method of treatment of empyema in our cases. Systemic antibiotics in the form of crystalline penicillin and cloxacillin were given. Supportive treatment in the form of tonics, cough mixtures , oxygen, blood transfusion, and good nutrition were needed by some patients. All patients were advised to help lung expansion by respiratory exercises. The duration of treatment was in the average of 26 days. The recovery rate was

78.8%. The mortality rate was 8.2%. The remaining patients were either complicated and / or referred to other hospitals to complete treatment. In the group of patients treated in the last year by this method, the duration of treatment was in the average of 25 days. The recovery rate at the hospital was 80% . The mortality rate was 6.6% . The remaining cases were complicated and referred to chest hospital to complete treatment.

In the group of patients treated in the last year by the closed tube drainage method, a systemic antibiotic was given in the form of penicillin or cloxacillin in the first few days, then the antibiotic was given according to the result of culture and sensitivity. The organisms in our patients were sensitive to the commonly used antibiotics. When the culture was sterile, penicillin or cloxacillin was given in high doses. The duration of treatment was in the average of 36 days. The recovery rate at the hospital was 93.4%. The mortality rate was 6.6%. Any complications were treated at the hospital .

Thus with the previous comment we can conclude that in rural areas the diagnosis of empyema in a patient suspected clinically and radiographically is established by the evacuation of pus from the pleural spaces. Blood picture is useful in the diagnosis of doubtful cases. The multiple aspiration method can be used in the treatment of empyema in rural

areas, but the closed tube drainage is the proper method when it is available. Systemic antibiotics are necessary in the treatment of empyema, and supportive treatment is usually required .