

Peculiar Cold-Induced Leukoagglutination in *Mycoplasma pneumoniae* Pneumonia

Mycoplasma pneumoniae Pnömonisinde Alışılmamış Soğuk-Aracılı Lökoaglütinasyon

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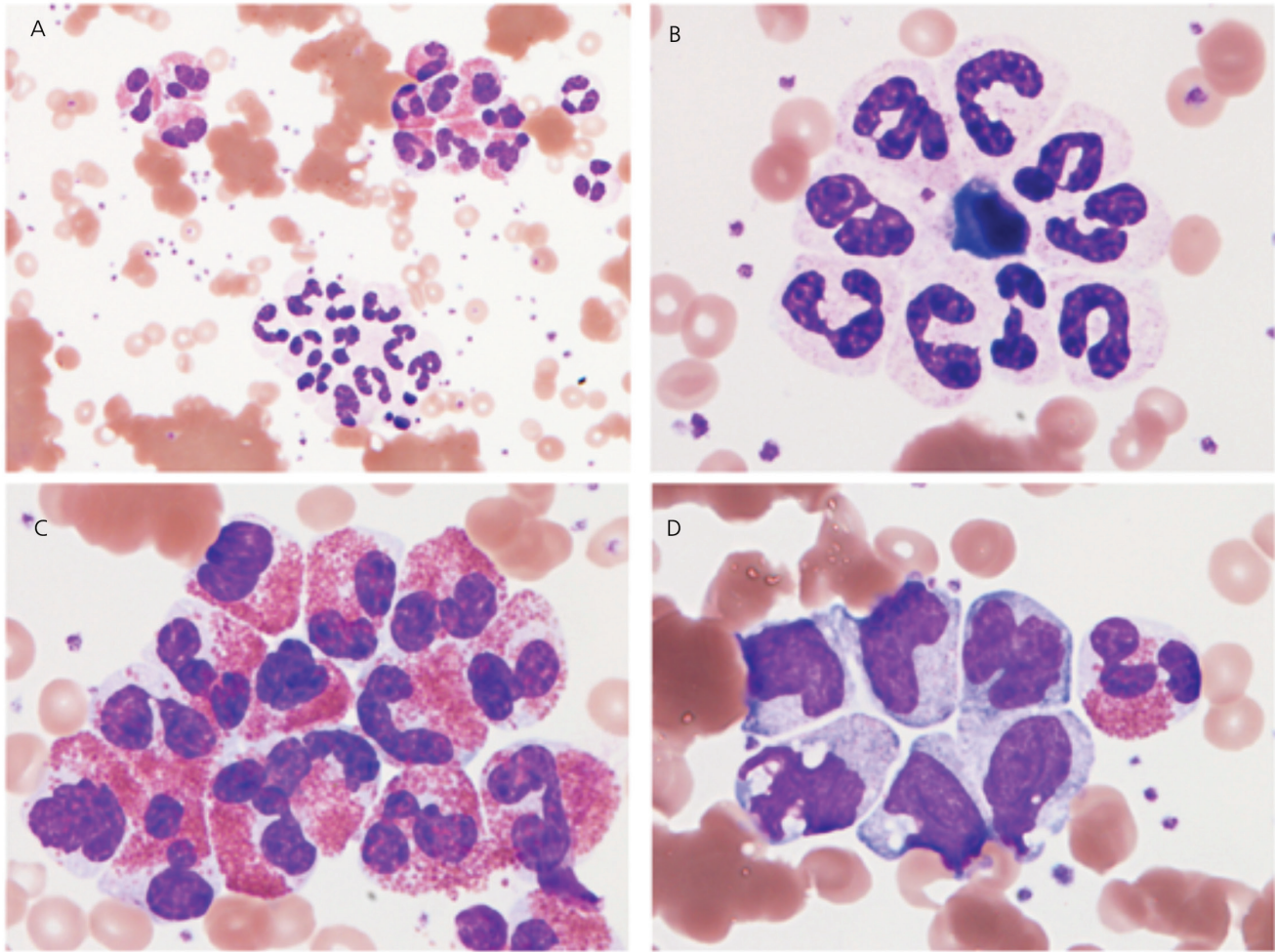


Figure 1. A peripheral blood smear showed not only RBC agglutination (A) but also neutrophil aggregates, eosinophil aggregates, and monocyte aggregates (A-D).

An 18-year-old woman was diagnosed with atypical pneumonia and treated with oral levofloxacin. Skin eruptions also appeared. On day 6 after admission, laboratory tests revealed the following: red blood cells (RBCs), $1.76 \times 10^9/L$; hemoglobin, 128 g/L; white blood cells (WBCs), $7 \times 10^9/L$ with 56% neutrophils, 27% lymphocytes, 6% monocytes, 10.5% eosinophils, and 1% basophils. A peripheral blood smear showed not only RBC agglutination but also neutrophil aggregates, eosinophil aggregates, and monocyte aggregates (Figure 1). After warming to 37 °C, the agglutination disappeared. The RBC and WBC counts returned to $4.44 \times 10^9/L$ and $9 \times 10^9/L$ with 55% neutrophils, 26% lymphocytes, 6% monocytes, 12% eosinophils, and 1% basophils. Blood chemistry analysis showed total bilirubin of 0.4 mg/dL and lactate dehydrogenase of 510 U/L. A direct antiglobulin test showed 1+ anti-C3d and 1+ anti-C3b3d. A passive agglutination test in paired serum samples revealed seroconversion of *M. pneumoniae* antibodies (1:80 to 1:20,480). Cold agglutinin was detected to a titer of 1:8192.

Cold-induced erythrocyte agglutination is frequently observed in cases of *M. pneumoniae* infection, but leukoagglutination is rare [1,2]. Though the pathomechanism of leukoagglutination is still uncertain [3], it has been postulated that immunoglobulin M cold agglutinin directed against I antigens of the leukocyte membranes is responsible for transient cold-induced

leukoagglutination [4]. A previous series of four pediatric cases of *M. pneumoniae* infection, all of which showed leukoagglutination, reported that eruption, eosinophilia, a high titer of cold agglutinin, and a high titer of *M. pneumoniae* antibodies were observed [5]. When leukocytopenia occurs in patients with these symptoms, pseudoleukopenia induced by leukoagglutination should be recognized as one potential cause.

Keywords: Leukoagglutination, Cold agglutinin, *Mycoplasma pneumoniae*, Eosinophilia, Pseudoleukopenia

Anahtar Sözcükler: Lökoaglutinasyon, Soğuk aglutinin, *Mycoplasma pneumoniae*, Eozinofili, Psödolökopeni

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