Published in final edited form as:

J Pediatr. 2009 January 1; 154(1): 131. doi:10.1016/j.jpeds.2008.07.006.

50 Years Ago in *The Journal of Pediatrics* Pediatric Empyema: A Second Look at its Incidence and Importance. Kiesewetter, WB, Rusnock JR, Girdany BR. *J Pediatr* 1959;54:81–6

William D. Hardie, M.D.

Division of Pulmonary Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

In 1957 and 1958 there was an abrupt increase in the number of children presenting to the Children's Hospital of Pittsburgh with empyema, a condition which had been steadily declining since the introduction of penicillin. To further examine this surprising upsurge in cases, these investigators retrospectively compared the incidence, etiology, treatment and outcomes of pediatric empyema in the "pre-penicillin era" from 1940–1945 with the "antibiotic era" of 1952–57. They found staphylococcus to be the primary bacteria cultured in the 1957 cases, in contrast to pneumococcus which was the predominate organism in previous years. This increasing prevalence of staphylococcus in association with the initiation and widespread availability of penicillin treatment illustrates how broad changes in pediatric medical practice can effect the etiology of empyema. Subsequent studies through the 1980s reported *Staphylococcus aureus* and *Haemophilus influenzae* as predominant pathogens in pediatric empyema. In the early 1990s, following adoption of universal conjugated *Haemophilus influenzae* vaccination, a number of centers in North America and Europe reported significant increases in empyema cases with the resurgence of *Streptococcus pneumoniae* as the foremost pathogen. Recent investigations covering the period after the introduction of conjugated pneumococcal vaccine now report a rising prevalence of *S aureus* and the emergence of MRSA as causative organisms.

The Pittsburgh data also reveals the improved outcomes penicillin therapy provided for pediatric empyema. Duration of hospitalization and mortality fell from 34 days and 16% in the pre-antibiotic era to 23 days and 8% in the 1952–1957 period. Pediatric studies from the past decade generally report duration of hospitalization of approximately 14 days with mortality rates less than 1% demonstrating the continued advances in treatment of the ensuing 5 decades.

Apparently even 50 years ago one could not write a pediatric empyema paper without addressing controversies in medical versus surgical management. The authors advocate aggressive surgical evacuation of pleural exudate either by repeated thoracentesis or tube drainage over "conservatively handled cases". Unlike current retrospective empyema studies, however, the readers are spared the common concluding cliché of: "future prospective studies are needed"!