

MEDICAL GRAND ROUNDS
PARKLAND MEMORIAL HOSPITAL

March 6, 1958

[Endocarditis]

Case I. -- Enterococcal endocarditis.

The patient was a 30 year old housewife with rheumatic heart disease who developed bacterial endocarditis following the delivery of her second child. She had been treated in another hospital for nearly 10 months prior to admission to this hospital. The diagnosis of bacterial endocarditis had been made five weeks post-partum, the causative microorganism being reported as resistant to penicillin (2 u/cc. MIC.) and streptomycin (30 micrograms/cc.) During the course of this 10 month period she had been treated consecutively with massive doses of penicillin, with tetracycline, chloramphenicol and with combinations of these drugs. In each instance although symptomatically improved, positive blood cultures were obtained promptly after cessation of each course of treatment. It had been considered that streptomycin therapy was of no value because of the report of in vitro resistance. Shortly before transfer to this hospital she developed a left hemiparesis.

Patient had classic signs of bacterial endocarditis. Blood cultures yielded enterococci with drug susceptibilities essentially the same as previously noted.

She was treated with six million units of penicillin and 1.5 Gm. dihydrostreptomycin daily for six weeks. Except for residual signs of the hemiparesis she recovered uneventfully and has remained free of signs of infection.

Case II. -- Bacterial endocarditis due to *Str. viridans*, Short-term therapy.

This 40 year old man entered the hospital because of fever, sweats and joint pains which he had noted for approximately four weeks prior to admission. He had a history of rheumatic fever in childhood and had been told he had a valvular lesion. The patient was febrile, and had numerous petechiae and splinter hemorrhages. Examination of the heart showed signs of mitral stenosis and insufficiency. The spleen was enlarged and there was microscopic hematuria. Three blood cultures yielded viridans streptococci, inhibited by penicillin 0.1 u/cc. and streptomycin 3.1 micrograms/cc. Antistreptolysin titer was 100 units.

As part of an experimental series this patient was treated for 14 days with penicillin six million units and dihydrostreptomycin 2.0 Gm. daily. He improved symptomatically during this time, although low grade fever persisted. He continued to have joint pains and new showers of petechiae at intervals for a total of four weeks. At the end of this time he gradually became completely afebrile and asymptomatic. Repeated blood cultures in the post-treatment period were negative. The patient subsequently has remained well.

Case III. -- Chronic recurrent endocarditis due to penicillin-sensitive streptococcus.

This 52 year old man was admitted to the hospital with the complaint of "endocarditis" for two and one half years. He had kept a detailed record of his illness, and this will be illustrated in slides. He had no history suggestive of rheumatic fever but had known he had a heart murmur since the age of 39. He first developed symptoms of fever, malaise, anorexia and fatigue two and one half years prior to this admission

and the diagnosis of bacterial endocarditis was substantiated by demonstration of streptococcal bacteremia. The streptococcus was highly susceptible to penicillin. During the ensuing one and one half years he had repeated courses of treatment with penicillin in doses up to 14 million units a day. He had had streptomycin for one week only. After each course of therapy, fever and bacteremia promptly recurred, the organism remaining highly susceptible to penicillin in vitro. During the year prior to admission he had been taking 900,000 units of procaine penicillin daily and with this was relatively free of symptoms. The treatment was stopped the day before admission.

The patient was febrile. Numerous petechiae were seen. There were flame-shaped hemorrhages in the right optic fundus. The heart was not enlarged. There was a loud systolic murmur heard all over the precordium, maximally at the apex. The spleen was palpable.

Repeated blood cultures yielded viridans streptococci which were inhibited by penicillin 0.16 u/cc. and streptomycin 125 micrograms/cc.

The patient was treated for six weeks with six million units of penicillin and 2.0 Gm. dihydrostreptomycin daily. He rapidly became afebrile, gained weight and became free of symptoms. He has remained well during the several years of follow-up.

Case IV. -- Staphylococcal endocarditis. Emergence of erythromycin resistant staphylococcus.

A 30 year old woman was admitted to the hospital with fever of undetermined origin. She had previously received penicillin, and oxytetracycline therapy with symptomatic improvement during therapy, but with recurrence of fever thereafter. Examination of her heart revealed signs of mitral stenosis and aortic insufficiency. Blood cultures yielded staphylococcus aureus susceptible to erythromycin (0.4 micrograms per cc.) and Novobiocin (0.1 microgram per cc.). The patient was treated with 2.0 Gm. daily of erythromycin and initially appeared to do well. After three weeks bacteremia recurred, and this strain of staphylococcus was now highly resistant to erythromycin (50 micrograms per ml.). The patient subsequently died despite treatment with other antimicrobial drugs.

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I plus I - frequently synergistic, never antagonistic.

II plus II - neither synergism or antagonism.

I plus II - may be synergistic or antagonistic.

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