

Rare Organisms Encountered In Blood Cultures of Endocarditis Cases

By

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Apart from the known causative organisms that have been proved to cause endocarditis, a number of other organisms have been also reported to cause this disease a review of which is given, so as to create an awareness that these organisms should be looked for when blood cultures are done and should not be neglected as contaminants or non-pathogens.

Haemophilus parainfluenza endocarditis.

Endocarditis caused by *Haemophilus parainfluenza* has been reported rarely, and most of the case reports were published in the pre antibiotic era. However, it has been seen that *Haemophilus parainfluenza* may cause endocarditis more frequently than has been previously recognized. James Dahlgren (1974)¹ state the clinical factors and bacteriologic techniques which facilitate recognition of this disease. *Haemophilus parainfluenza* needs carbon dioxide and enriched media for isolation and is usually grown on subculture before the original broth culture appears cloudy. These organisms require γ but not x factor for growth. (Dahlgren, 1974)¹.

Candida parapsilosis endocarditis:

Candida endocarditis has been associated with open heart surgery, prolonged intravenous

therapy and heroin addiction. The commonest species is *Candida parapsilosis* in 50 percent of the cases.

Vegetations consisting of masses of fibrin containing large number of *Candida* with giant pseudomycelia are taken as characteristic of *Candida* species.

Previously reported cases of endocarditis have been based on the absence of clinical findings and negative blood cultures. Anti-fungal therapy alone may actually facilitate further embolization, by destroying adherent viable mycotic colonies, making them less capable of withstanding turbulent flow patterns. Therefore, surgery is usually done, using antifungal agents, to eradicate any microscopic foci of *Candida* (Martin et al., 1979)².

Infective Endocarditis caused by *Rothia Dentocariosa*:

The genus *Rothia* was created by George and Brown in 1967 (cited by Pape et al.³, 1979) to include members of the family Actinomycetaceae that resemble *Nocardia* and *Actinomyces* morphologically but differ in their physiology in cell wall constituents.

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The occurrence of *Rothia dentocariosa* in the oral cavity is well established, but it has rarely been recognized as a human pathogen. The first reported case was described by Scharfen in 1975 (cited by Pape et al.³, 1979).

The risk of Endothelial infection in adults with salmonella bacteremia.

Arteritis and endocarditis are a rare complications of salmonellosis. Three workers saw that 10 out of 105 patients with salmonella bacteremia had arteritis (Cohen et al.⁴, 1978).

Pseudomonas endocarditis:

This review includes the 30 reported cases of *pseudomonas* endocarditis which did not follow cardiac surgery. The postoperative cases, which occurred primarily in the early years of extracorporeal circulation, are omitted.

It is difficult to establish the diagnosis of endocarditis in a patient who survives his disease. Prolonged or at least, repeatedly demonstrable bacteremia without another apparent source is essential. Either the presence of a significant cardiac murmur, particularly, the development of a new cardiac murmur or evidence of peripheral (or in the case of tricuspid endocarditis, pulmonic) embolization would appear to be necessary also. The review includes all cases reported as *Pseudomonas* endocarditis although sufficient data are not given in a few reports to clearly establish the diagnosis. (Carruthers and Kanokuechayant⁵, 1973).

The presumed source of *Pseudomonas* bacteremia varies. By far, the most frequent association occurred such as with self administered intravenous injections taken by narcotic

addicts. This association occurred such as with self administered intravenous injections taken by narcotic addicts. This association of narcotic use with *Pseudomonas* endocarditis probably accounts for the 2.5:1 males sex predominance and the relatively young (30 years) average age of the patients. (Carruthers and Kanokuechayant⁵, 1973).

Pseudomonas aeruginosa implants upon normal as well as abnormal cardiac valves. All of the tricuspid and approximately 50 percent of the affected mitral and aortic valves in this group were thought to have been normal before the infection.

Pseudomonas endocarditis has been treated with new antimicrobial agents as they become available. Lloyd et al in 1961⁶ reported the successful therapy of a patient with unequivocal *Pseudomonas* endocarditis. Several antibiotics, including large doses of polymyxin B and colistin sulfatem were given. Documentation of endocarditis as the source of *Pseudomonas* bacteremias, is less certain in two other successfully treated cases. Cottsgen in 1951 (cited by Carruthers and Kanokuechayant,⁵ 1973) reported cure by splenectomy in a patient in whom *Pseudomonas* bacteremia developed during antibiotic treatment of a prolonged illness diagnosed as sterile endocarditis. A number of treatment failures with polymyxin B and or colistin regimens have been recorded (Carruthers and Kanokuechayant⁵, 1973).

Flavobacterium:

Observation of a first case of endocarditis due to flavobacterium calls attention to the microorganism which has been considered to be non-pathogenic to man. The pertinent

clinical and medical bacteriological literature is therefore, reviewed. Pangalos in 1929 (cited by Schiff et al.⁷, 1961) recovered a motile gram negative bacillus. It is not quite certain whether this can be classified as Flavobacterium. Sherwood in 1931 (cited by Schiff et al.⁷, 1961) isolated Flavobacterium from the spinal fluid in a case of meningitis. Brodymore and King 1958 (cited by Schiff et al.⁷, 1961) reported two out-breaks of meningitis caused by this gram negative bacillus. Kleeman, Hewitt and Ouze in 1960, reported 100 cases of urinary tract infection due to this organism. This being its pathogenic history it was seen to cause endocarditis also as reported by Schiff et al., 1961⁷.

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