

GROUP-F STREPTOCOCCAL PLEURO-PERICARDITIS IN A MESOTHELIOMA PATIENT AFTER DENTAL SURGERY

(CASE REPORT)

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A 71-year-old mesothelioma patient developed pleuro-pericarditis and pleural empyema. Bacteriological examinations and serological identification proved group F *Streptococcus* in the pleural fluid. Anamnestic data suggested that the source of infection might have been the oral cavity after dental surgery.

Keywords: group F *Streptococcus* infection, mesothelioma

There are many species and serogroups of Streptococci. According to Lancefield classification Group-F streptococci represent a very diverse group. *Streptococcus anginosus*, *S. intermedius*, *S. constellatus* can be classified as viridans streptococci or *S. milleri*-group and all bacteria of these species can belong to F group of Streptococci. They show β or α haemolysis and normally are present in the oral cavity, the gastrointestinal tract and the female genital tract. They can be responsible for pyogenic infections, purulent suppurative lesions such as pleural empyema, meningitis, endocarditis, brain, liver, abdominal and subphrenic abscesses [1–7].

Here the authors summarize a case about a mesothelioma patient who developed pleuro-pericarditis caused by group F *Streptococcus* after dental surgery.

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Materials and methods

Bacteriological examinations were performed from pleural aspirate gained by thoracoscopy. The cultivation was performed on bovine blood and chocolate agar. Based on macroscopic colony morphology and catalase test, serological identification was performed with OXOID's Streptococcal Grouping Kit. Antibiotic susceptibility testing was done on Mueller–Hinton blood agar with antibiotic paper discs of HUMAN, OXOID and Becton-Dickinson.

Results and discussion

A 71-year-old woman was admitted to the Intensive Care Unit of the Pulmonology Clinic of the Semmelweis University of Medicine (Budapest, Hungary) for thoracoscopy. The indication of this intervention was her recurrent pleural and pericardial effusion. After thoracoscopy she developed fever – that is not unusual after such intervention –, the aspirate of the pleural fluid was thick, viscous and turbid. Bacteriological examinations of all the three consecutive pleural aspirates (native and cultured in blood culture bottles) resulted in a peculiar β -haemolytic *Streptococcus* on bovine blood agar and α haemolytic on chocolate agar plates in pure cultures.

Each isolate coagglutinated in group F streptococcal antibody solution and was sensitive to a variety of penicillins, cephalosporins, macrolides and glycopeptides tested. Meanwhile the patient was treated with amoxicillin + clavulanic acid and her pericardial effusion ceased, her pericarditis and pleural empyema healed (Figure 1). However, her hydrothorax has recurred. The histological examination of the excindate by thoracoscopy has finally proved mesothelioma.

Serial microbiological examinations were performed from pleural punctates and drains in order to check the possible infectious origin of the recurrent hydrothorax. All the cultures were negative and the histopathological result proved our supposal that the recurrence of pleural effusion was due to the malignancy.

Anamnestic data suggested that the source of group F Streptococci might be the oral cavity: eight of the patient teeth were extracted prior to the admission for thoracoscopy. We have checked samples of both oral cavity and nose and throat for a possible group F streptococcal carrier state, but these cultures have been negative for group F *Streptococcus*, attributable to the prior appropriate antibiotic therapy. On the basis of the results of microbiological and histological examinations we have considered the pleural empyema and pericardial effusion to be of infectious origin in our patient at the time of admission. The subsequent recrudescence bacteriologically

Fig. 1. Chest X-ray before and after treatment

negative hydrothorax was due to the metastasis of the malignant disease without infection.

In conclusion, group F *Streptococcus* with peculiar β -haemolytic activity on bovine blood agar may cause in patients suffering from malignant disease life-threatening pleural and pericardial infections. In the time of dental surgery the diagnosis of mesothelioma was not established yet.

Since the occurrence of this case, two other patients with lung cancer have been shown to contain group F *Streptococcus* in their bronchial lavages. Therefore, bacterial cultivation and serogrouping examination of unusual β -haemolytic *Streptococcus* isolates from such patients with known malignant disease; moreover, appropriate antibiotic prophylaxes are recommended prior to dental surgery.

To our best knowledge group F *Streptococcus* infection associated with mesothelioma and dental surgery has not been reported yet. Both the number of malignant diseases and the number of infections caused by “unusual” or rare bacteria increasing. In our case report we would like to draw the attention on such rare associations and emphasize their importance.

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