

STUDY OF SKIN LESIONS IN 221 PATIENTS OF MENINGOCOCCAL DISEASE

Pages with reference to book, From 239 To 240

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Abstract

During a meningococcal outbreak, 221 patients were studied. A skin rash was present in 78 (35.3%) patients. Twenty one (11.3%) patients had a frankly purpuric rash, involving mainly the extremities and the remaining had a generalised macular or petechial lesions. Extensive purpuric lesions, involving mainly the extremities were associated with disseminated intravascular coagulation (DIC), shock and a fatal outcome. This peripherally distributed rash may be used as a clinical substitute for the laboratory tests that confirm DIG (JPMA 39: 239,1989).

INTRODUCTION

About 60% of patients with meningococcal disease have a skin rash¹. During the early course of the disease the rash may be macular and may blanch with the application of pressure, but becomes petechial and/or ecchymotic later. This rash is very suggestive of meningococcal disease^{2,3}. The diagnostic specificity of petechial rash in a patient of purulent meningitis is quite high in adults, ranging from 87-100%⁴. The purpuric rash of meningococcal disease has been associated with a bad prognosis, specially, when it predominantly affects the extremities.⁵⁻⁷ Because of shock, and its accompanying redistribution of the blood, the areas of reduced perfusion often have the most extensive purpura. This is mainly evident on the extremities, though it does not follow an anatomic vascular pattern.⁸ In some of the patients the rash may not become purpuric and would remain as erythematous macules. The rash may be misdiagnosed as anaphylactoid purpura⁹, viral¹⁰ or drug rash¹¹. This paper reports the types of skin lesion observed during an outbreak of Group A meningococcal disease in Peshawar from December 1987 to May 1988.

PATIENTS AND METHODS

Two hundred and twenty one patients with meningococcal disease were admitted to Lady Reading Hospital, Peshawar, during an outbreak of this disease. The age of patients ranged from 12 to 65 years. Diagnosis was confirmed by positive culture in 132 (60%) cases, while rest of the patients had gram negative, intracellular diplococci on stained smears of the cerebrospinal fluid (C.S.F.). Slide agglutination of all the positive cultures yielded group A organisms. Besides the routine blood and CSF tests, platelet count, prothrombin time, partial thromboplastin time and fibrin degradation products were done in all patients with peripherally distributed purpuric rash and in a similar number of patients without a rash or with only a generalised macular rash. Blood pressure was recorded three hourly. Patients with a systolic blood pressure below 90mm Hg were labelled to have hypotension.

RESULTS

Of 221 patients, 78(35.3%) presented with a rash. Fifty seven (73%) had generalized rash mainly involving the trunk and 21 (26.9%) had peripheral purpuric rash. Fifteen (71.4%) patients with

peripheral purpuric rash had hypotension and 4(19%) died. The occurrence of hypotension and mortality in patients with generalized mainly macular rash was lower and no different from patients without skin lesions. All patients with extensive peripheral purpura and only one without skin lesions had disseminated intravascular coagulation ($P < 0.01$).

DISCUSSION

In some patients suffering from meningococcaemia a rash develops which blanches earlier and later becomes petechial and/or ecchymotic; it is very suggestive of the disease in adults, along with other symptoms¹². The distribution of the rash is variable²⁰. All patients with an acute fever, rash and vomiting during this study (extending over five months) had meningococcal infection. Other cases of such a rash include purulent meningitis with pneumococcal infection,² hemophilus influenzae^{1,12} and staphylococcus aureus¹³ infections. Aseptic meningitis due to ECHO virus has also been reported to mimic meningococcaemia¹⁴. The rash is present in 60% of the patients suffering from meningococcal disease,¹ whereas in this study only 35.3% of the patients develop a rash. When petechiae and ecchymosis develop DIC, must be suspected and investigation should be carried out immediately. Hypotension is a feature of acute meningococcaemia and it has been noted that almost all patients with hypotension have DIC. It is certain whether DIC occurs first or hypotension contributes to the development of DIC¹⁵. Probably, endotoxic damage of the vascular endothelium occurs initially¹⁶, leading to DIC, Sanarelli Schwartzman phenomenon and shock⁶. In the present study 15(71.4%) patients with peripheral lesions and DIC had hypotension and 4 (19%) died. Patients without a rash and those with a generalised rash did not have hypotension and only 4(4.7%) patients died in this group. Thus patients without a rash and those with a generalised rash, rarely have DIC, hypotension and a bad outcome. On the other hand, patients with predominantly peripheral lesions have a higher chance of having DIC, shock and a bad outcome. This study concludes that all patients of meningococcal disease with peripherally distributed ecchymosis have DIC and DIC without rash is unusual.

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