Incidence of pericardial effusion during attacks of familial Mediterranean fever

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Familial Mediterranean fever (FMF) is an autosomal recessive disorder that affects primarily Jews, Armenians, Turks, and Arabs. It is characterised by recurrent, self limited attacks of fever accompanied by inflammation of the peritoneal, synovial, and pleural surfaces.1 Pericardial involvement is a well known (0.7–1.4%) but rare feature of the disease.2,3 Our initial observation of two patients who had recurrent pericarditis as a sole manifestation of FMF4 has led us to suggest that pericardial inflammation is more prevalent than generally believed. Since echocardiography is a non-invasive and sensitive tool for the detection of pericardial effusion, we undertook an echocardiographic study to assess the exact frequency of pericardial effusions during attacks of FMF.

PATIENTS AND METHODS

Two dimensional, M mode, and Doppler echocardiographic examinations were performed during 55 consecutive FMF attacks in 42 patients (15 female, 17 male). Echocardiographic study was carried out by one of the authors (ET or SA) and reviewed by the other one, who was aware of the diagnosis of FMF but unaware of the presence or absence of chest pain. Typical attacks of FMF consisted of fever and serositis including peritonitis, synovium, and pleura lasting 1–4 days. Attacks of FMF were recurrent and self limited. FMF was diagnosed according to established clinical criteria or molecular analysis when appropriate (in 37 patients).1 None of the patients had amyloidosis. Patients who had evidence of congestive heart failure, uraemia, or other systemic illnesses known to be associated with pericardial disease were excluded from the study. A detailed cardiac physical examination, 12 lead ECG, and chest radiography were performed for all patients. Presence of pericardial effusion was evaluated from the posterior wall of the left ventricle at end diastole by M mode and two dimensional echocardiography with a Sonos 5500 (Hewlet Packard, Andover, Massachusetts, USA) echocardiography machine. The presence of pericardial effusion was defined as ≥ 2 mm echo-free space between the pericardial layers of the left ventricular posterior wall at end diastole.

Age at onset of the disease, age at diagnosis, treatment with colchicine, and the type of FMF attack during the echocardiographic study were recorded for all patients. A signed informed consent form was obtained from each parent or patient.

RESULTS

The age of the patients ranged from 3.5–22 years (mean (SD) 10.9 (3.7) years). During the echocardiographic study 27 patients had been treated with colchicine for 6 months to 15 years (mean (SD) 45 (32.3) months), and the remaining 15 were not receiving colchicine. The type of FMF attack during the echocardiographic study were recorded for all patients. A signed informed consent form was obtained from each parent or patient.

DISCUSSION

Although pericarditis is regarded as one of the clinical features of FMF, pericardial involvement has not been mentioned much in large series of FMF.1 Therefore, whether pericarditis is a manifestation of FMF or a coexisting, intercurrent illness has been debated. Re-evaluation of pericardial involvement in a recent study showed a 0.7% prevalence of pericarditis in 1553 thoracic attacks of 3976 patients with FMF. This study clearly showed that pericarditis was a manifestation of FMF.2 Similarly, the prevalence of definite pericardial attacks has recently been reported as 1.4% (34 of 2468 patients) by the Turkish FMF Study Group.3 Both studies show that pericarditis is a rare manifestation of FMF as compared with the other forms of serositis.

Why pericardium is not involved as commonly as other serosal membranes is unknown. It has been suggested that underdiagnosis may partly be responsible for the infrequent detection of pericarditis. If echocardiography were used to detect pericarditis in every attack of FMF (especially for chest attacks), it would be possible to detect pericardial attacks more frequently. Our present study, however, shows that pericardial effusion is not a frequent manifestation of FMF, even with the use of echocardiography. Only one prospective echocardiographic study was undertaken before ours, by Dabestani and colleagues.4 They reported a much higher (27%) prevalence of pericardial involvement in predominantly adult patients with FMF. However, Dabestani and colleagues described pericardial disease as an effusion in the...
pericardial space or pericardial thickening detected only by M mode echocardiography. It is known that if two dimensional and M mode echocardiography are used together, diagnostic acuity of echocardiography to detect pericardial effusion is increased. Since it is difficult to detect a thickened pericardium with echocardiography, the reliability of echocardiographic diagnosis is questionable. Thus, the high prevalence of pericardial disease that Dabestani and colleagues found in their echocardiographic study may have been an overestimation caused by the method used to define pericardial disease.

Another possible explanation of this discrepancy is the difference in the ages of the patients. Since pericarditis tends to appear at a late stage of FMF, a higher prevalence may be predicted in adult patients than in children. It is known that colchicine is effective for the treatment of recurrent, refractory pericardial effusions resulting from miscellaneous causes other than FMF. Although colchicine may prevent the occurrence of pericardial fluid in patients with these disorders, no study to date has reported that colchicine can blunt any type of FMF attacks. Moreover, both of our patients with pericardial effusion had been taking colchicine.

Previous clinical studies and the results of our study show that pericardial attacks are infrequent manifestations of FMF, and routine echocardiographic screening is not necessary in FMF attacks.

References