Comorbidity of Constrictive Pericarditis and Hemophilia A

Ergun Demiralp^a Rifat Eralp Ulusoy^a Ata Kirilmaz^a Bekir Sitki Cebeci^a
Nezihi Kucukarslan^b Namik Ozmen^a Mustafa Aparci^a

Departments of ^aCardiology and ^bCardiovascular Surgery, Gata Haydarpasa Teaching Hospital, Istanbul, Turkey

Key Words

Comorbidity, hemophilia A-constrictive pericarditis

Abstract

Objective: To report a case of comorbidity of constrictive pericarditis and hemophilia A. **Clinical Presentation and Intervention:** A 21-year-old male with hemophilia A was referred to our clinic and was examined with the subsequent evaluation of shortness of breath, leg edema and ascites. Clinical and laboratory examinations were performed. The results were consistent with constrictive pericarditis (CP), and the symptoms were completely relieved following institution of medical therapy. **Conclusion:** Because hemophilia A and pericarditis may be co-incidentally present clinical conditions, avoidance of surgical procedures in hemophilic patients is preferable unless the resolution of the symptoms of pericarditis cannot be effected by medical therapy.

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Introduction

Constrictive pericarditis (CP) is a clinical pathology consistent with adhesion or dense fibrosis of both the parietal and visceral pericardium causing restrictive impairment of diastolic ventricular filling. Two thirds of the cases are idiopathic, whereas cardiovascular surgery, ra-

diation therapy to the mediastinum, infectious diseases (e.g., tuberculosis, fungus), malignancies, collagen tissue disease and chronic renal insufficiency may underlie the pathophysiology [1–3]. The precise incidence of the comorbidity of CP and hemophilia A is not known. The symptoms and signs leading to CP are insidious and often overlooked because of the extracardiac findings of the systemic disease. The definitive treatment of CP is pericardiectomy, but at the early stage (functional class 1) or advanced stage (functional class 4), which is a high-risk surgical condition, surgery may not be life-saving [6]. Comorbidity with hemophilia A is also a life-threatening medical problem because of its complications, which include hemorrhage into the skin, muscles, mucous membranes (e.g., epistaxis, gastrointestinal and urological bleeds), retroperitoneal hematoma, prolonged postpartum bleeding, cerebral hemorrhage and excessive bleeding following trauma and intraoperative as well as postoperative bleeding [7, 8]. We report a case of comorbidity of hemophilia A and CP, treated medically.

Case Report

The present case is a 21-year-old male diagnosed with hemophilia A during childhood, which was confirmed after an unstoppable bleeding of a finger cut by knife (activated partial thromboplastin time: 47 s) was treated with factor VIII replacement therapy (recombinant factor VIII, 500 IU/week) for a period of 1 month. He was referred to a training hospital in 2003 for evaluation of

Fig. 1. Lateral chest X-ray imaging of CP. Thick pericardial layer surrounds the heart.

dyspnea, swelling of both ankles and feet, with signs of ascites (especially at the level of the waist) as evidence of progression during the last 6 months. Liver enlargement, extensive ascites and right atrial mass (thrombus, scarred valve?) were diagnosed. Subsequently, he was discharged from the hospital following symptomatic therapy. However, after acceleration of his complaints in the last 6 months, he was referred to our hospital for evaluation.

Physical examination revealed a blood pressure of 100/60 mm Hg, radial pulse 102/min, regular respiratory rate of 22/min, pale skin and conjunctivae, tachycardiac heart sounds with normal S1, loud S2, no S3 but positive S4, without any cardiac murmur or pericardial friction rub. Pulmonary examination revealed inspiratory crackles heard at both bases, and abdominal side grooves were scraped, consistent with ascites. Hepatosplenomegaly, edema (at the dorsal face and both ankles) without any lymphadenopathy was found. The peripheral pulses were patent and equal.

The EKG showed sinus tachycardia, low voltage and T-wave inversion at V1 and V2 leads. The lateral chest X-ray showed a calcified thick pericardial layer surrounding the entire heart (fig. 1). The biochemistry showed hypochromic anemia without any hepatic or renal functional abnormality (table 1). The patient was negative in terms of tuberculosis, HIV virus, cytomegalovirus, hepatitis B and C virus, Brucella and Toxoplasma. Transthoracic echocardiography revealed pericardial thickening and calcification, right atrial indentation with respiratory variations of tricuspid inflow Doppler recordings consistent with CP. Paracentesis yielded ascites with a high albumin content and the abdominal ultrasound (USG) revealed hepatosplenomegaly with extensive ascites localized most notably at the Douglas pouch. Venous Doppler USG of the distal extremities revealed lymphedema of both feet and thighs but no scrotal edema.

Table 1. Biochemical and microbiological parameters

Hemoglobin, g/dl	10.3
Hematocrit, %	33
Mean corpuscular volume, fl	74
White blood cells	6,900
Red blood cells	3,700,000
Platelets	294,000
Sedimentation, mm/s	17
T ₃ , U/l	2.3
T ₄ , U/l	0.8
TSH, U/l	4.8
Glycemia, g/dl	87
Urea, mg/dl	24
Creatine, mg/dl	0.9
Sodium, mEq/dl	141
Potassium, mEq/dl	3.4
Total protein, g/dl	3.7
Albumin, g/dl	2.4
Direct bilirubin, mg/dl	0.1
Indirect bilirubin, mg/dl	0.5
SGOT, U/l	28
SGPT, U/l	59
Total CPK, mg/dl	101
LDH, U/l	241
Prothrombin time, s	13.2
INR	1.08
APTT, s	44.4
ASO, U	54.3
CRP, U	5.6
Rheumatic factor, U	9.19
Prealbumin, mg/dl (ascites)	26 (18–45)
Purified protein derivat	negative for 3 samples
Brucella	negative
Cytomegalovirus	negative
Toxoplasma	negative
HbsAg	negative
Anti-HBs	negative
Creatinine clearance, ml/min	76
24-hour urine	
Protein, mg/day	168
Sodium, mEq/day	59

A CT scan of the thorax was consistent with extensive nodules localized at centrilobular and acinar parts of the lung and mediastinal, paracaval and para-aortic lymphadenopathy associated with a thick pericardium covering the entire heart, measuring 5 mm in thickness (fig. 2, 3). Gastrointestinal endoscopic findings were normal. An abdominal CT scan was negative for pathologic lymph node enlargement; therefore, lymph nodes were not biopsied, which accounts for the absence of tissue diagnosis in this regard. Upon confirmation of a diagnosis of CP, medical therapy with diuretics (furosemide 20 mg b.i.d., spironolactone once a day), an anti-inflammatory agent (indomethacin 25 mg once a day) and nonspecific antibiotic therapy (ampicillin/sulbactam 1 g once a day) were instituted despite the existence of the thick restrictive pericardium.

Fig. 2. Cardiac MR imaging of CP. The thick calcified pericardial layer surrounds the heart.

Fig. 3. Cardiac MR imaging of CP.

Medical therapy was utilized in this particular case because of the high risk of bleeding in terms of resolving the CP symptoms. Indomethacin was chosen because the patient had had a mild degree of hemophilia without any past bleeding episodes in the last 5 years and had not required any factor VIII replacement therapy.

The patient lost 7 kg in 1 week. Dyspnea, congestion, and the majority of the constrictive symptoms resolved following treatment. The patient did not give consent for pericardiectomy. He was followed up for 7 months and kept on a treatment regimen of indomethacin 50 mg 1 × 1 orally for a total of 4 months and a diuretic during the acute and follow-up period. The last 5 months were free of symptoms after withdrawal of indomethacin.

Discussion

To the best of our knowledge, this is the first case of comorbidity of CP and hemophilia A. There is 1 case in the literature reporting HIV virus infection with postcardiac injury, a cardiac tamponade drained surgically [7]. That particular case was also significant for the beneficial effects of anti-inflammatory agents, aspirin and prophylactic factor VIII infusions. The same medications were administered to this patient in addition to diuretic therapy for ascites. From this case, it might be concluded that good practice would consider medical treatment before surgery due to a possible favorable outcome in CP, as in this case.

Asymptomatic attacks of recurrent pericarditis are another cause of CP. Of note, this case has demonstrated similar findings, which might have resulted in CP via the same mechanism. Confirming the diagnosis may help prevent future morbidity and mortality. In this regard, we utilize laboratory parameters, especially ultrasonography and CT scan, to help modify the type of treatment. The sensitivity and specificity of coronal and axial spin-echo cardiac MR imaging of CP are 88 and 100%, respectively. It has been reported that detecting abnormal diastolic septal motion with cardiac MR for the differential diagnosis of CP and RC might be beneficial [9]. Chronic liver disease, infectious diseases, malignancies and connective tissue disease must be considered for differential diagnosis.

Conclusion

Hemophilia and pericarditis may be coincidentally present clinical conditions. Avoiding surgical procedures in hemophilic patients is preferable if the resolution of pericarditis symptoms can be effected with medical therapy. One must be aware of this rare comorbidity of hemophilia A and CP, and consider medical therapy before surgery.

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