Infective Endocarditis is a complex inflammatory disease that can involve the heart valves, leading to heart failure. This condition affects the heart at the level of the endothelial lining and can be caused by a wide array of pathogens, most commonly bacterial in origin. Cardiovascular surgeons may be introduced to the body via medical procedures such as dental extractions and tonsillectomies, however intravenous drug use has also been known to lead to endocarditis. The organisms responsible infiltrate the mitral or tricuspid valve depending on the cause of the infection. Due to the complexity of presentation and variable etiology, it is important not only to conduct a thorough diagnostic workup, but also to obtain a comprehensive history. This case explores the management of a 54-year-old female patient presenting with symptoms of heart failure and a medical history stating remote hospitalization over 12 years ago for septic shock of unknown etiology. Upon further questioning the patient revealed that she had a history of intravenous drug use in 2002 which was not known at the time of prior hospitalization. Pericardiocentesis was performed to demonstrate jugular venous distention, bilateral lower extremity edema, lungs clear to auscultation and a normal S1/S2 with a summation gallop. These findings coupled with transthoracic echocardiogram showed evidence of right heart failure secondary to severely dilated right ventricle and severe tricuspid valve regurgitation. Transthoracic echocardiographic imaging confirmed these findings and lead to successful tricuspid valve replacement with resolution of symptoms. This case emphasizes the necessity of collecting a complete history in conjunction with diagnostic techniques to come to a sound diagnosis in order to carry out a successful treatment plan.

Case Presentation

A 54-year-old Caucasian female presents to the cardiology clinic with complaints of fatigue, dyspnea on exertion, lower extremity edema, intermittent paroxysmal nocturnal dyspnea and orthopnea. She denies chest pain, palpitations, syncope, weight gain or loss, cough, and fever. Patient reports that symptoms started about 3 months ago, however have progressively worsened over the past few weeks. Past medical history revealed a prior hospitalization in California 12 years ago due to septic shock of unknown etiology. Patient states that at the time she recovered without any problems. Past medical history revealed hypoalbuminemia and hypertriglyceridemia. No past surgical history and no pertinent family history was reported. Upon further questioning patient admits to intravenous drug use in 2002, but denies any alcohol use over the past year.

On physical exam performed in-office the patient’s vital signs was T 98 4F, HR 75 bpm, Blood Pressure 147/90 mmHg, RR 22, and SpO2 of 90% on room air. Further examination, the auscultated jugular venous distention, normal S1 and S2 with summation gallop, clear lungs, and bilateral lower 2+ extremity edema extending from the knees to the feet. The abdomen was non-distended and the liver was non-palpable. In office EKG showed normal sinus rhythm with right atrial overdrive.

Patient was sent for direct admission to the hospital where imaging studies were performed. Initial testing with TTE revealed a severely dilated right ventricle and severe tricuspid regurgitation(Figures 1 and 2). Left ventricular function and pulmonary pressures were within normal limits. Further evaluation with TEE demonstrated severe tricuspid regurgitation secondary to dilatation of the tricuspid septal leaflet. Bi-leaflet heart catheterization illustrated significant diastolic right-sided pressure, however showed normal coronary arteries without evidence of pulmonary hypertension. Pulmonary capillary wedge pressure (PCWP) was also found to be within normal limits.

As indicated by the degree of valvular destruction and tricuspid regurgitation warranted surgical intervention thus the patient underwent tricuspid valve replacement with 3mm Medtronic Porcine valve. Post-operatively, the patient was asymptomatic and follow-up echocardiogram one month later demonstrated normalization of right ventricular size and function.

Discussion

Acute infective endocarditis is treated with organism specific antibiotics to eradicate the infection and support organ function. Treatment is fraught with moderate to severe tricuspid valve regurgitation reported a tricuspid valve replacement as very few successful cases of tricuspid valve repair have been reported [Figure 3].

Acute endocarditis is treated with organism specific antibiotics to eradicate the infection and support organ function. Treatment is fraught with moderate to severe tricuspid valve regurgitation reported a tricuspid valve replacement as very few successful cases of tricuspid valve repair have been reported [Figure 3].

Conclusion

This case illustrates how imperative it is to identify the source of the bacteremia at initial presentation in an attempt to prevent heart failure. Upon initial hospitalization 12 years prior, although history was not obtained and thus the patient was only treated for sepsis without finding the source. As a result, the patient went on to develop severe tricuspid regurgitation which manifested as right heart failure several years later. This case shows how complex history taking coupled with medical imaging studies resulted in an accurate diagnosis leading to prompt treatment and resolution of symptoms.