Case study

RIGHT-SIDE INFECTIVE ENDOCARDITIS WITH INKNOWN VENTRICULAR SEPTAL DEFECT : CASE REPORT OF A FORM OF LATE PRESENTATION OF CONGENITAL HEART DISEASE

ABSTRACT :

Infectiveendocarditis (IE) is a severe complication in patients withcongenitalheartdisease. However, CHD-associatedmortality has decreased to 10% because of improvement in the diagnosis of infectiveendocarditis, antibiotictherapy, cardiacsurgery, and interventional procedure.[1] Herein, weaimed to describe a case of right-sideinfectiveendocarditiswithinknownventricular septal defectcomplicatedwithsepticpulmonaryemboli as a rare form of latepresentation of congenitalheartdisease. The observed high incidence of InfectiveEndocarditis warrants furtherstudies about the current use, need and efficacy of antibioticprophylaxis in CHD patients.

Keywords : *Ventricular septal defect ; right sideinfectiveendocarditis; pulmonaryembolism;*

1. INTRODUCTION

Infectiveendocarditis (IE) is one of the common causes of life-threatening infections. Compared to left-sidedendocarditis, right-sidedinfectiveendocarditisisrarer
Wepresent the case of a previouslyapparentlyhealthyyoungwomenwith a latediagnosis of congenitalheartdisease (CHD), in which IE was the first manifestation of the disease

2. PRESENTATION OF CASES

Wedescribe the case of a 27 yearoldwomen, with no knownpersonalhistory of disease (therewas no record of medicalcheck-upsduringchildhood) or previousdiagnosis of a heartdefect , with a history of repeatedcorticosteroid injection for weight gain.shepresented to the emergency for breathlessness, asthenia, andfever3 weeks duration .

At his admission the physicalexaminationfound. A blood pressure at 122/62 mmHg, regularheart rate at 130 beats per minute, a respiratoryrate at 28breaths per minute, SpO2 at 83%, temperature at 38.9°C. . Cardiac auscultation revealed a harshpansystolicmurmur at the left sternal border and a diastolicmurmur at the right second intercostal space, togetherwith a precordialthrillpulmonary auscultation revealedcrackles in bothlungfieldswithoutanyothersigns of congestion, The abdomen wassofwithhepatosplenomegaly

Laboratory tests showedmicrocytic hypo chromicanemiawithhemoglobinlevel of 6.2 g/dl and no ferritindeficiencyexplained by inflammatorysystemicdisease, withan active infection (neutrophilicleukocytosis: 26 103/µl, with 20 × 103/µlneutrophils, and C-reactiveprotein 242 mg/dl) , procalcitonine 32,2 ,

Transthoracicechocardiographywith Doppler studywasperformedwhichrevealed a smallperimembranous restrictive VSD,with a left to right shunt waspresent withaenormousvegetationmeasuring 35 x33 mm inserted on the perimembranousventricular septal defectextendedthrough the pulmonary infundibulum to the main pulmonaryarteryduring systole, Moderatetricuspidregurgitationwasdocumented, The other valves presented no vegetation or severeregurgitation. Leftventricularfunctionwaspreserved.

Achest X-ray revealedbilateralalveolarinfiltrates , In addition, a CT scan of the thorax demonstratedsepticpulmonaryemboli, as well as mild right pleural effusion

Microbiologystudiesweredone in conjunctionwithempiricsynergic dual antibiotic: ceftriaxone 02g/day and gentamicine 3mg/kg /day; whilewaiting for the antibiogram.

At least two sets of blood cultures confirmed the presence of methicillin-sensitive Staphylococcus aureus

The patient wasdiagnosedwithendocarditiscomplicatingperimembranous VSD following the 2023 European Society of Cardiologymodified diagnostic criteria of infectiveendocarditis, Despite 1 week of appropriateantibiotictherapy , shehad persistent feverwithrising CRP , repeated a CT scan of the thorax demonstrated multiple septicpulmonaryemboli

Therefore,in consensus withourendocarditis team, including a cardiacsurgeryevaluation, wedecided to performsurgicaltreatment, vegetectomy, VSD patch closure and tricuspid valve plastydepending on surgical exploration

The patient'spostoperative course wasuneventful and hewasdischarged 2 weeksaftersurgery.

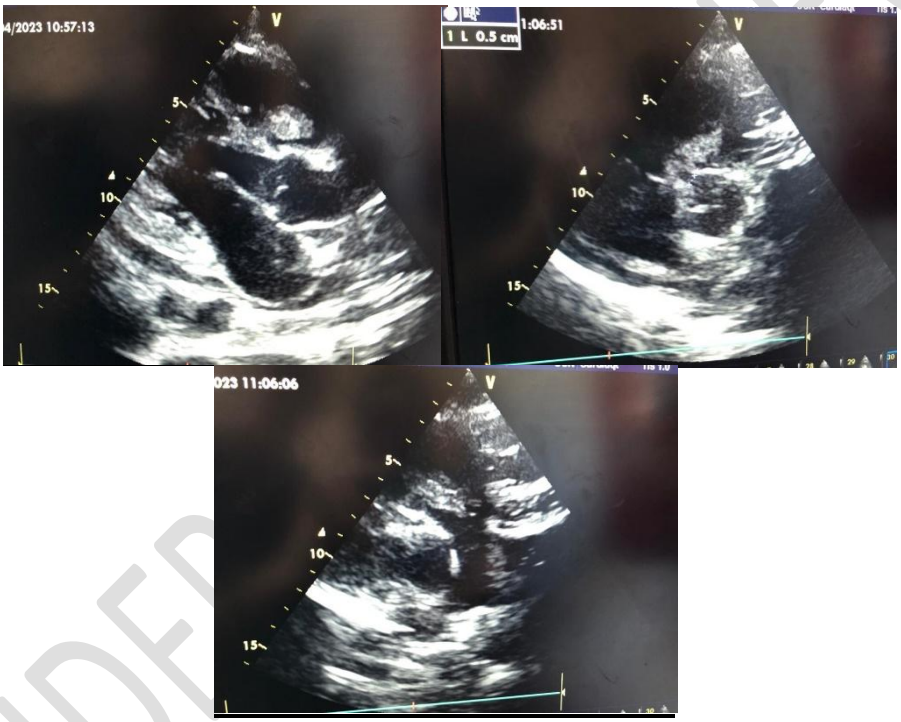
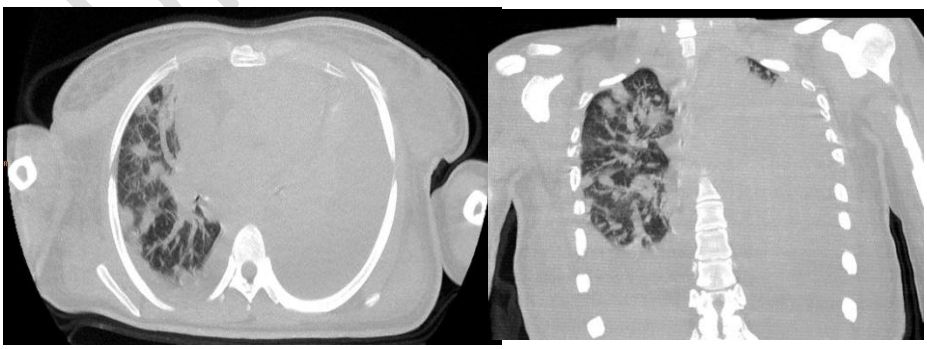


Figure 1 : Transthoracicechocardiographyshowed a enormousvegetationmeasuring 35 x33 mm inserted on the perimembranousventricular septal defectextendedthrough the pulmonary infundibulum to the main pulmonaryarteryduring systole



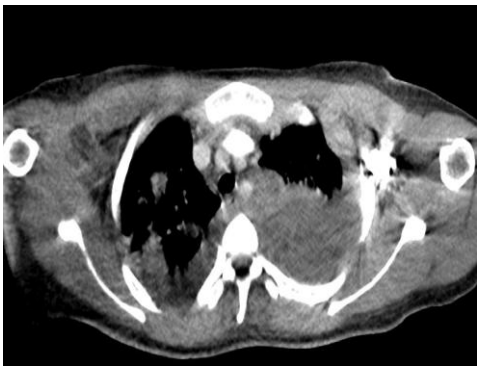


Figure 2 :CT scan of the thorax demonstratedfoci of pulmonary condensation associatedwith masses and pulmonary nodules that are scattered and excavated in places with pleural effusion of greatabundance on the right and little on the left, suggesting an infectiousorigin (septicemboli).

3.DISCUSSION

Right sided IE is rare, accounting for only 5–10% of all IE cases(1)

Infectiveendocarditisis a rare complication of ventricular septal defects. Its incidence isestimated to be 2-2 per 1000 patient-years(1)(2)(3)

Congenitalheartdiseasepredisposes to IE via severalmechanismsincluding turbulent non-laminarblood flow causingshear stress and endothelial damage,

Risk factors for right-sided IE include patients with CHD, indwellingcatheters, and CIED, as well as immunocompromised and PWID patients(1)

The mostcommonmicroorganismcausing right-sided IE is S. aureus, accounting for the majority of patients. The tricuspid valve ismuch more commonlyinfected (4)(5)

Right-sided IE patients presentwithfever, bacteraemia, and pulmonary complaints (i.e. cough, chest pain, or haemoptysis). Right-sided HF mayalsooccur due to tricuspid or pulmonaryregurgitation, or to pulmonary hypertension induced by multiple pulmonarysepticemboli. (5)(6)(7)

It had been suggestedthat patients with multiple lungcavitarylesionswithfevershouldbeworked up for right-sided IE with trans-oesophagealechocardiographyeven in the absence of significantriskfactors(8)

An active search for embolizationisalwaysrecommended in patients withendocarditis, especially in patients with large (>10 mm) and mobile vegetations, just like the case we described.3,11 Pulmonarysepticembolizationis a common complication of right-sided IE, and computedtomography scan is the imagingmodality of choice.(8)

In a retrospectiveanalysisconducted by Hecht and Berger in 1992 (9)theyfoundapproximately 55% of patients withchestradiograph infiltration on presentation consistent withpulmonarysepticemboli. Our patient hadembolization of vegetationinto the main pulmonarytrunk, ,resulting in septicatelectasis, pneumonia, and pleural effusion

Right-sided IE isgenerally a more benignclinicalentitythanleft-sided IE and can bemedicallymanaged in ~90% of patients, withsurgeryreserved for thosewho fail medicaltherapy.(10)

Surgeryisrecommended in patients with right-sided IE who are receivingappropriateantibiotictherapy in case of Right ventriculardysfunctionsecondary to acute severetricuspidregurgitation non-responsive to diuretics , Persistent vegetationwithrespiratoryinsufficiencyrequiringventilatory support afterrecurrentpulmonaryemboli. Large residualtricuspidvegetations (>20 mm) afterrecurrentsepticpulmonaryemboli. And in Patients withsimultaneousinvolvement of left-heart structures(2)

4.CONCLUSION

One of the mostseriouslate complications in CHD patients isinfectiveendocarditis (IE).

Besides, an active search for clinical and radiologicalsigns of pulmonaryembolizationisnecessary for patients with right-sidedendocarditis, especiallythosewith large and mobile vegetation.

Primaryprevention of IE in CHD patients and corresponding patient educationis essential

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard writtenethicalapproval has been collected and preserved by the author(s).

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