Native-valve tricuspid endocarditis due to Neisseria \textit{Sicca} with bilateral pulmonary embolism

\textbf{Keywords:} Endocarditis; \textit{Neisseria sicca}; Embolism; Tricuspid valve; Calcifications

\textbf{Case}

A 44-year-old woman was admitted to our hospital to explore a tachycardia with renal failure and hypokalemia. She was treated 14 years ago by chemotherapy and radiotherapy for stage 3 Hodgkin’s disease, considered in remission. She was complaining for a few days of an increasing effort stage 3 dyspnea (chronic effort dyspnea stage 1 was known and thought to be linked to post-radiation pneumonia) with precordial pain, conjunctive icterus, abdominal discomfort without pain, and gingival bleeding. The physical examination found a tachycardia (130 bpm), a hepatomegaly without other signs of cardiac failure, a bilateral decreased breath sound without rest dyspnea, some purpuric lesions. There was no heart murmur, no fever, and no splenomegalia.

Laboratory investigations revealed thrombocytopenia (36,000/mm$^3$), lymphopenia (237/mm$^3$), an inflammatory syndrome with leucocytosis (10,460/mm$^3$) with dominant segmented neutrophils (90%) and a high C-reactive protein concentration (352 mg/L, normal < 5 mg/L), a renal failure (creatinine at 1.79 mg/dL, normal < 1.2 mg/dL), and coagulation anomalies with a decreased prothrombin time of 67% and activated partial thromboplastin time of 53 s (control = 33 s). The total bilirubin was increased (51 mg/L, combined bilirubin = 44 mg/L).

Aerobic blood cultures revealed a \textit{Neisseria sicca} septicemia. Anaerobic blood cultures were negative. Serologies (HIV 1 and 2, HBV, HCV, \textit{Streptococcus pneumoniae}, \textit{Bartonella henselae} and \textit{Bartonella quintana}, \textit{Hantaan} virus, \textit{Rickettsiae}, \textit{Leptospiriosis}) were negative.

The transthoracic and transoesophageal echocardiography showed a remaining and thickened tricuspid valve, with oscillating calcified mass lesions, extending to the sub-valvular apparatus and the septal pillar. The lateral leaf was almost broken, which led to a severe dysfunction of this valve, with significant inferior cava vena dilatation and inverted flow in hepatic veins.

A coronary CT showed large calcified vegetations (75 mm) pendant to the tricuspid valve (Fig. 1). Calcified emboli were present in the right pulmonary artery, and in the inferior lobar left artery (Fig. 2). Inferior vena cava was dilated.

Considering surgical risk and general state improvement under 6 weeks IV antibiotic (ceftriaxone and ofloxacin), the patient is for the time not being operated. All blood cultures are negative. Control transthoracic echocardiography showed unmodified calcified tricuspid vegetations.

\textbf{Discussion}

\textit{Neisseria} are gram-negative diplococci that are divided into two groups: pathogenic species (\textit{Neisseria gonorrhoeae} and \textit{Neisseria meningitidis}), and saprophytic non-pathogenic species, including \textit{Neisseria sicca} \cite{1}. Saprophytic \textit{Neisseria} are commensal organisms of the upper respiratory tract \cite{2,3}. \textit{Neisseria sicca} are exceptionally rare causes of infections: meningitis, pneumonia, inflammatory spondylitis, osteomyelitis, urethritis, but particularly severe endocarditis, especially in immuno-compromised hosts, pre-existing heart disease, or an IV drug addiction \cite{4,5}.

Typically, \textit{Neisseria sicca} endocarditis causes severe endocarditis of the left cardiac chambers (especially the mitral valve) \cite{6}, with multiple arterial embolic complications if not diagnosed early. The originality of this case was the location in the right cardiac chambers, the very important volume of the vegetations, the bilateral pulmonary emboli and the calcifications of these lesions, which suggest a sub acute phenomenon.

Considering the history of Hodgkin’s disease of our patient, we presume that the tricuspid valve was altered because of radiotherapy. In the same way, thrombocytopenia and lymphopenia may reflect myelosuppression, and likely an immunodeficiency. A TEP–CT eliminated a lymphoma recurrence. Hepatomegaly was linked to cardiac failure. Because of very severe tricuspid dysfunction, no heart murmur was heard at the physical examination.
Figure 1.  

a: transthoracic echocardiography: oscillating calcified mass lesions of tricuspid valve.  
b–d: coronary CT. Large calcified tricuspid vegetation (75 mm); b: axial image, spontaneous contrast;  
c: axial contrast agent–enhanced image; d: coronal contrast agent–enhanced image.

Figure 2.  

Coronary CT.  
a: calcified emboli in the right pulmonary artery, axial contrast agent–enhanced image;  
b: calcified emboli in the right pulmonary artery, curvilinear reformation;  
c: calcified emboli in the inferior lobar left artery, axial contrast agent–enhanced image;  
d: bilateral pulmonary calcified emboli, MIP reformation.
Conclusion

To conclude, this case shows the potential severity and embolic complications of endocarditis due to Neisseria sicca, a saprophytic germ that can lead to severe infection especially in immuno-compromised patients.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References


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